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Changes in Labor Force Activities and Income of the Elderly Before and After Retirement: A Longitudinal Analysis

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This paper analyzes the changes in work hours and the economic profile of the elderly for a period of 11 years before and after retirement. Workers of all economic status decreased their work hours gradually as retirement approached. But findings show that, as they decreased their work hours, workers with higher preretirement economic status experienced more drastic reduction in income than those with lower economic status. Nevertheless, the preretirement income gap was maintained in postretirment economic status mostly due to differences in asset income and pension benefits. Policies to assist low-income retirees are recommended.

As the length of time an elderly person has to spend in retirement has increased because of increased longevity, retirement has become the most important life event that requires careful financial planning. Despite the replacement of earnings with Social Security benefits, public and private pension benefits, and other transfer payments, retirement is characterized by reduced income for a majority of workers whose preretirement income consisted mostly of earnings. Although the economic status of the elderly for the past two decades has improved faster than that of the general population, owing especially to public transfer payments, reduction in the absolute level of income caused by retirement has been documented as the source of low life satisfaction, to say nothing of lower living standards, in the lives of many retired elderly (Maxwell, 1985).

Primarily because they anticipate these financial problems, an increasing number of workers have made a gradual, not an abrupt, transition from the world of work to the world of leisure. Many workers approaching retirement age gradually

detach themselves from paid employment by reducing their work hours (therefore, earnings) and substituting pension benefits, Social Security benefits, and other types of transfer income for the lost earnings. Others, not fortunate enough to expect pension benefits, continue, after retirement from their primary occupation, to work in a secondary job on a full- or part-time basis; most of them then work at the secondary job for only a few years. For many workers, therefore, the transition from work to leisure is not a very finite process, at least in the early years of retirement.

Given that the modern-day trade-off between work and leisure can be a very fluid situation, especially during the early years of retirement, analysis of the dynamic process of retirement can be a valuable addition to the current body of knowledge regarding retirement income and income policy. In particular, possible differences between races, genders, and income strata in the process of retirement and postretirement economic status need to be analyzed so as to understand differential implications of retirement for people in these groups. The analysis in this paper of the changes in work hours and in various income sources is intended to present a more clear picture of the dynamic nature of the retirement processes of whites, blacks, men, women, rich, and poor. That is, this study analyzes the changes in work hours and the changes in the economic profile of the elderly before and after retirement by following, for a period of 11 years, sample members of the Panel Studies of Income Dynamics (PSID) who retired between 1978 and 1982. Specifically, the study analyzes, first, the longitudinal changes in the sources and amounts of income for 5 years prior to retirement and 5 years following retirement. Second, it analyzes the relative importance of each source of pre- and postretirement income. Third, it examines the adequacy of retirement income by analyzing the changes in the poverty status of elderly people before and after retirement. Fourth, it analyzes the sociodemographic and occupational determinants of an individual's income 5 years after retirement. In all these analyses, special emphasis is placed on differential effects of race, gender, and income strata.

Previous Studies

The general economic status of elderly in the United States has been remarkably improved over the past two decades. Poverty rates among the population aged 65 and older have been declining faster than those of the younger population, and the elderly's mean/median income has also been rising faster than that of the younger population for the same period. Indeed, the remarkable economic gains of the elderly in the midst of growing federal budget deficit, inflation, and budget cuts for many domestic social programs have often led to criticism of federal social policy as having tilted disproportionately in favor of the aged. But treatment of all elderly persons as a homogeneous group and examination of a point-in-time distribution of income do not capture the real dynamics of the elderly's economic status. Duncan, Hill, and Rodgers's study (1985), based on the PSID, in fact showed that the much-heralded economic gains of the elderly did not necessarily mean real improvement in the economic status of all elderly persons. The appearance of economic improvement of the elderly as a group is due largely to the entry of new cohorts of elderly persons whose economic status is much better than that of previous cohorts.

Nevertheless, most people who have become elderly even recently experience serious economic setbacks with retirement and widowhood. The immediate negative economic consequences of retirement and widowhood are indeed so great that they constitute a greater reduction in the economic status of most elderly persons than even the long-term consequences of erosion in retirement income due to inflation, illness, and so forth. For example, Holden, Burkhauser, and Feaster's study (1988) found that the initial fall into poverty among those who had not been poor before the husband retired is more closely linked to the event of retirement or widowhood than to the slowly eroding household income over the period of retirement and widowhood. Ross, Danziger, and Smolensky's study (1987), based on 1949–1979 census data, had also concluded that the decline in the average income of each birth cohort, controlling for sex, retirement, and marital status, was due not to aging itself (passage of time) but to changes in income that occur at retirement and at widowhood.

Especially with respect to retirement, a marked decline in income due to loss of or reduction in earnings puts most elderly people in a postretirement economic circumstance inferior to their preretirement economic status. Despite Social Security benefits with COLAs (cost of living adjustments) and a host of other old-age income-maintenance programs that support postretirement life, the income reduction created by the loss of or reduction in earnings experienced by most workers and their families at retirement is still the largest of any caused by various lifetime events.

Because they expect the economic consequences of retirement to be devastating, however, many workers tend to gradually decrease work hours as retirement age approaches. As evidenced by Fox's study (1984) which followed Social Security beneficiaries for 4 years after their first benefit receipt, "retirement is a gradual process rather than an immediate cessation of all paid work" (p. 3). That is, retirement in reality is a process of change, from work to leisure, that often takes more than a couple of years. The study showed that about half the persons continued some paid employment after they began receiving benefits. In particular, a considerable number of those whose only pension was from Social Security and whose total income was by and large not very high continued to work, at least part time, although mostly for only a few years after receiving their first Social Security benefits (Fox, 1984). So, those who expected to experience the greatest decrease in their economic well-being because of retirement are the least likely to sever their link to the world of work completely at the time of retirement. On the other hand, one study indicates that nearly half of those opting for early retirement before age 65 had second pensions (Meier & Torrey, 1982). These people were more likely to cease work completely and to have a shorter period of transition to retirement.

Of course, some people continue to work full time past age 65 because they love to, whereas others are forced to quit for reasons of poor health or job-related pressures. But for an average worker, the trade-off between work and leisure may be a calculated movement based on the projection of retirement income. When the projected retirement income is not adequate,

these older workers appear to prolong the transition process to assure that the drop in economic resources will not be too sudden and devastating.

The issue of the adequacy of pre- and postretirement income can also be examined by analyzing the changes in the poverty rate and, to a certain extent, in the level of median income. As mentioned, downward changes in income typically occur as people prepare for retirement by reducing work hours. Data on labor force participation rate show that a lower proportion of those aged 55–64 years are engaged in full-time work than are those aged 45–54 years. Data on the distribution of income also show that median income of all those aged 55–64 years has been significantly lower than that of those aged 45–54 years. Median income of full-time workers aged 55–64 years, however, has been on a par with median income of full-time workers aged 45–54 (U.S. Bureau of the Census, 1978–1990).

As previous studies have shown, the gradual deterioration in real income during retirement may not be as serious as the immediate effect of reduced or stopped earnings. Nonetheless, studies have also indicated that the elderly experience a substantial drop in economic status with the passage of time (Duncan et al., 1985). Fox's study (1984) also found that during the 4-year period following the initial benefit receipt, the average Social Security beneficiary experiences about 10% deterioration in real income. Thus, as indicated by the higher poverty rate and lower median income among older cohorts of retirees, retirement income may become less adequate over time, and a retiree's risk of failing into poverty may grow as he/she ages. Even the elderly who continue some paid employment after retirement from their main jobs to supplement their Social Security benefits stop working as they age. Although Social Security benefits are protected against inflation to ensure constant purchasing power, the majority of private pensions are not. During times of high inflation, fixed-dollar-value pension benefits quickly lose their real purchasing power. Moreover, further erosion in the level of income due to illness and widowhood (especially for women) is more likely as the retiree ages. Especially with the current Medicare policy, which provides limited coverage for hospitalization, elderly people with chronic

illness must buy medigap policies and/or pay medical expenses out of pockets.

Data and Sample

    The data for this study are drawn from the Panel Studies of Income Dynamics (PSID), 1973–1987 interview waves, which were conducted by the Institute of Survey Research, the University of Michigan. The PSID are longitudinal surveys of about 6,000 nationally representative sample families that began in 1968 and cover such matters as sociodemographic variables, employment, and economic status. Although the PSID collected information on each family member (individual files), they amassed detailed employment, earnings, and other income information only for household heads (and wives, to a certain extent). Therefore, the sample for this study consists of 331 household heads (221 whites and 110 blacks) who were in the original PSID sample, had worked 10 or more years since age 18, and retired between 1978 and 1982. (The PSID oversampled blacks by 3 to 1.) The year of retirement—1978, 1979, 1980, 1981, or 1982—is defined as the year when the respondent indicated that he/she had retired. Previous studies have shown that self-definition of retirement is usually identical to objectively defined retirement based on such criteria as work hours and Social Security or pension benefit receipt.

    In addition to grouping of the sample members by race and gender, the top and the bottom quartiles were also chosen, on the basis of total income 5 years prior to retirement, and compared in demographic and economic profiles. The top income group consisted of 98.9% white and 94.5% male, whereas the bottom group consisted of 76.1% white and 55.3% male.

    Data in Table 1 show that the gender distribution was 78.2% male and 21.8% female, with no significant racial differences in gender distribution. At retirement, 70% of the sample were married. Because the PSID ascribed the status of household head to a woman only when she was the single head of a household, however, all women included in the sample were widowed, divorced, separated or never married. On the other hand, 89.5% of men were married. The mean level of education was 11.1 years, with a median of 12 years. But, significant racial

differences were found in the level of education and marital status. As expected, blacks had a lower level of education and were less likely to be married than whites. Those in the bottom quartile strata of income also had a lower level of education than did those in the top quartile strata of income. The mean number of years of employment since age 18 was 38, with a median of 40 years, with significant differences between genders only. In terms of the type of occupation 5 years prior to retirement, 22.4% of the sample held professional, administrative, or technical positions, 37.0% held service, sales, or clerical positions, and 40.5% held other types of positions. As expected, however, significant differences in the type of occupation were found between races, genders, and income strata.

Because the sample consisted of household heads only, the findings may not be generalizable to all elderly. Especially for women, the generalizations are limited to single people. Despite these shortcomings, this panel study provides the most accurate tracking available of income changes before and after retirement.

Methods

The process of retirement was examined by the changes in work hours starting from 5 years before retirement to 5 years after retirement. As for changes in income, given that earnings, asset income (including income from business, market gardening, roomers and boarders, dividends, interest, and rent), Social Security benefits (for a couple if married), pension benefits, and other transfer payments (Supplemental Security Income (SSI), food stamps, miscellaneous transfers, money received from relatives) constitute the majority of income for most people, this study utilized the following methods: (1) comparison of the amount of income (all in 1987 dollars) from each major source every year from 5 years before retirement to 5 years after retirement; (2) comparison of the proportion of income from each income source to the total income for the same 11-year period; and (3) comparison of poverty status for the same 11-year period. (Except for the analysis of poverty status, wife's income from such sources as earnings, income from assets, and pensions was not included. On the other hand, wife's

Table 1.

Demographic and Work-Hour Characteristics of Sample

	All	Race		Gender		Income Stratum	
		White	Black	Male	Female	Top Quartile	Bottom Quartile
N	331	221	110	244	87	83	82
(%)	(100)	(88.8)	(11.2)	(78.2)	(21.8)	(25.0)	(25.0)
Race (%)							
White	88.8			89.2	87.5	98.9***	76.1***
Black	11.2			10.8	12.5	1.1***	23.9***
Gender (%)							
Male	78.2	78.6	75.7			94.5***	55.3***
Female	21.8	21.4	24.3			5.5***	44.7***
Level of	11.1	11.6***	7.7***	11.1	11.3	13.3***	9.1***
education (yr.)	(0.2)	(0.2)	(0.6)	(0.2)	(0.3)	(0.3)	(0.3)
Work history (yr.)	38.1	37.8	40.2	40.0***	31.0***	37.8	38.8
	(0.5)	(0.5)	(1.7)	(0.4)	(1.4)	(0.6)	(1.5)
Age at	64.0	63.8	65.6	63.5**	65.8**	62.1***	68.6***
retirement (yr.)	(0.4)	(0.4)	(1.3)	(0.4)	(0.7)	(0.6)	(0.8)
Marital status 5 years							
before retirement (%)							
Married	70.0	71.7*	56.4*	89.5***	0***	85.4***	39.8***
Single	30.0	28.3*	43.6*	10.5***	100***	14.6***	60.2***
Pre-retirement							
occupation (%)							
Prof/adm/tech.	22.4	24.1***	9.2***	25.5**	11.4**	55.9***	1.5***
Services/clerk	37.0	38.9***	22.5***	35.2**	43.7**	31.9***	31.8***
Laborer/others	40.5	37.1***	68.3***	39.3**	44.9**	12.2***	66.7***
Annual work hours (hr.)							
5 years before	1,776	1,811*	1,488*	1,854***	1,404***	2,158***	982***
retirement	(47.1)	(48.9)	(157.9)	(52.1)	(94.9)	(64.6)	(91.9)
4 years before	1,771	1,812**	1,438**	1,871***	1,342***	2,113***	1,070***
retirement	(49.7)	(52.0)	(154.6)	(54.3)	(105.4)	(73.7)	(108.4)
3 years before	1,669	1,705*	1,377*	1,777***	1,279***	2,075***	1,006***
retirement	(49.2)	(51.4)	(158.5)	(55.4)	(94.5)	(70.6)	(98.3)
2 years before	1,590	1,619	1,356	1,681***	1,262***	2,030***	948***
retirement	(51.0)	(53.6)	(160.1)	(56.8)	(106.5)	(79.9)	(99.3)
1 year before	1,352	1,373	1,182	1,440***	1,033***	1,729***	700***
retirement	(49.7)	(53.0)	(141.5)	(57.1)	(91.6)	(89.9)	(82.0)
Year of	634	646	545	651	575	735***	346***
retirement	(39.2)	(41.9)	(111.1)	(45.6)	(74.6)	(72.8)	(59.4)
1 year after	181	185	147	196	126	191**	78**
retirement	(23.8)	(25.3)	(70.0)	(28.3)	(39.4)	(48.1)	(22.5)
2 years after	175	180	130	192*	114*	140	97
retirement	(26.7)	(28.4)	(79.7)	(33.0)	(31.2)	(42.0)	(33.7)

Table 1

Continued

		Race		Gender		Income Stratum	
	All	White	Black	Male	Female	Top Quartile	Bottom Quartile
N	331	221	110	244	87	83	82
(%)	(100)	(88.8)	(11.2)	(78.2)	(21.8)	(25.0)	(25.0)
3 years after	176	180	150	192	120	157**	29**
retirement	(29.4)	(31.8)	(72.5)	(35.7)	(41.4)	(50.3)	(12.5)
4 years after	185	191	137	214**	80**	201**	41**
retirement	(29.3)	(31.8)	(69.2)	(36.6)	(25.1)	(68.8)	(18.9)
5 years after	180	187	131	204**	94**	210**	58**
retirement	(27.8)	(30.3)	(62.0)	(33.7)	(39.4)	(62.5)	(23.3)

(): Standard error of the mean.
***p<.001; **p<.05; *p<.10: Denote significant differences between races, genders, or income strata.
Note: Statistics are all weighted.

Social Security and SSI benefits were included, because the earlier interview waves of the PSID did not separate the wife's benefits from the husband's.) In all analyses, racial and gender differences as well as differences between those in the top quartile and those in the bottom quartile of preretirement income strata were examined, because blacks and women, to say nothing of those whose preretirement income is relatively low, are more likely than other sample members to experience hardship from inadequate retirement income. Because of lack of space, however, findings regarding the changes in the proportion of income from each source and poverty rates are reported in 5 years before retirement, 1 year before retirement, year of retirement, 1 year after retirement, and 5 years after retirement only.

For the determinants of total income 5 years after retirement (logged), two models of multivariate ordinary least squares (OLS) regression analysis were conducted. In Model I, race, gender, years of education, years of work history since age 18, age at the time of retirement, marital status 5 years before retirement, and the amount of total income 5 years before retirement (logged) were entered as explanatory variables. It has been previously noted that these variables are good predictors of

retirement income. In Model II, to examine differential effects of race and gender, the interaction effects between these variables and race and gender were also entered.

Findings

   Changes in work hours.   Examination of annual work hours of the members of this study's sample shows that they worked 1,590 hours (with median 1,840 hours) and 1,352 hours (with median 1,581 hours) on the average 2 years before retirement and in the year preceding the retirement year, respectively (see Table 1). These represent 11% and 24% decrease, respectively, from 1,776 annual work hours 5 years prior to retirement. The sample members worked 634 hours on the average (with median 364 hours) in the retirement year. In the year following retirement, the average work hours were 181 with median 0. In other words, 71.0% of them did not work at all in the year following retirement. Five years into retirement, 80.4% of them did not work at all. Thus, the data show that workers indeed decreased their work hours gradually as retirement approached. Nevertheless, the data also indicate that 1 of 5 retirees continued working after retirement. Although the proportion of retirees who were found working after retirement is not huge, the finding still renders support to the gradual process of detachment from work for some workers.

   An interesting finding with respect to racial differences is that blacks, in the 5 years prior to retirement, worked significantly fewer hours annually than did whites. Data showed that this significant difference continued until 3 years before retirement but disappeared thereafter. This means that, as retirement approached, white workers were reducing their work hours faster than were black workers.

   For most of the study period, women also worked significantly fewer hours than did men, implying that more women than men worked part time. As retirement approached, both men and women apparently reduced their work hours at the same rate. As a result, gender differences in work hours were maintained until retirement. Four years after retirement, gender differences were again significant, indicating that more men (21.8%) than women (11.2%) were engaged in post-retirement

work. As mentioned, however, women retired at a later age than did men.

The most persistent differences in work hours were found between those in the top quartile and those in the bottom quartile of income. Throughout the study period, the differences between the two groups were maintained: The top income group always worked at least twice as many hours as did the bottom income group. In other words, 24.5% of those in the top quartile versus 9.3% of those in the bottom quartile continued working 5 years after retirement. As in the case of women, however, the bottom group retired at a significantly later age than did the top group, 68.6 years versus 62.1 years (p<.001).

Thus, for both women and those in the bottom quartile, delaying retirement may have been a means of avoiding the precipitous decline in income expected to accompany retirement. Also, given that the total number of hours worked annually was significantly lower than those of men and people in the top quartile, respectively, it is possible that women and those in the bottom quartile were supplementing their Social Security benefits with earnings, as was indicated by Fox (1984). In fact, further analysis shows that 2 years before the self-claimed retirement year, 69.5% of those in the bottom quartile, as compared to 9.8% of those in the top quartile were receiving Social Security benefits (p<.0001). The proportion of women receiving Social Security benefits 2 years before retirement was 46.5%, as compared to 32.7% for men (p<.02).

Changes in pre- and postretirement income.   Table 2 shows changes in the average total income and the proportion of income from each income source for the 11-year study period by race, gender, and income strata. For all categories of retirees, total income 1 year after retirement was significantly lower than total income in years preceding retirement. And incomes 1 year prior to retirement and at the retirement year were lower than incomes in earlier years. The significant differences between races, genders, and income strata, needless to say, were not unexpected.

The most interesting change that occurred with retirement, however, was the shift in the proportion of income from each income source. Naturally, the share of earnings in total income

Table 2.

Comparison of the Changes in the Proportion of Income from Each Source by Race, Gender, and Income Strata

	Total Income ($)[a]		Earnings (%)		Asset Income (%)		SSA (%)		Pension		Other Trans.	
	White	Black	White	Black	White	Black	White	Black	White	Black	White	Black
N	221	110										
5 years before retirement	29,356 (1,258.4)	15,656*** (1,896.2)	77.4	76.4	8.8	1.3***	10.1	16.7	3.4	1.3	0.3	4.4
1 year before retirement	28,853 (1,354.6)	14,181*** (2,206.6)	61.7	63.4	13.6	6.8**	19.0	23.0	5.5	1.9	2.2	5.0
Year of retirement	24,573 (1,499.3)	12,032*** (1,731.2)	32.4	33.7	17.9	8.1**	33.0	36.7	14.3	15.2	2.8	6.3
1 year after retirement	19,780 (906.8)	9,918*** (1,016.7)	8.6	7.0	23.8	9.8***	42.8	58.5**	23.1	19.5	1.7	5.3
5 years after retirement	19,009 (1,067.2)	10,289*** (1,341.0)	5.5	6.2	21.8	10.0**	49.8	56.4	21.5	19.1	1.0	8.3***
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
N	244	87										
5 years before retirement	30,722 (1,353.5)	16,451*** (1,433.2)	80.1	67.4**	8.2	7.2	9.0	17.6**	2.5	5.5	0.3	2.3
1 year before retirement	29,589 (1,411.5)	16,782*** (1,427.9)	65.4	49.1**	12.8	13.3	17.4	26.8**	3.0	4.5	1.4	6.3**

	Amount	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
Year of retirement	25,683 (1,579.0)	33.3	27.7	17.7	15.4	31.9	37.9	13.9	15.9	3.2	3.1
1 year after retirement	20,604 (998.1)	8.8	6.9	23.8	16.8**	42.6	51.4*	23.6	19.4	1.1	5.5**
5 years after retirement	20,140 (1,177.0)	6.4	2.6**	21.2	17.9	49.1	55.9	21.6	20.0	1.3	3.6

N	Top Quart.	Bottom Quart.	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
	83	82										
5 years before retirement	55,512 (2,426.5)	7,939*** (477.9)	85.8	55.3***	11.9	7.6	0.5	30.9***	1.8	4.1	0	2.1*
1 year before retirement	52,206 (3,210.4)	11,284*** (946.5)	71.2	35.8***	19.9	9.6**	4.1	44.4***	4.2	3.1	0.6	7.2**
Year of retirement	44,462 (3,600.8)	9,271*** (769.1)	36.8	15.3***	27.7	12.3***	12.1	57.7***	21.3	8.4***	1.1	6.3**
1 year after retirement	34,225 (2,180.5)	8,137*** (629.0)	8.3	6.0	33.8	13.9***	23.3	68.9***	34.3	5.2***	0.3	6.1**
5 years after retirement	34,653 (2,790.2)	7,956*** (809.8)	6.9	1.8**	29.2	15.5***	31.2	71.2***	31.6	5.0***	0	6.6**

(): Standard error of the mean.
[a]: In 1987 constant dollars.
***p<.001; **p<.05; *p<.10: Denote significant differences between races.
Note: Statistics are all weighted.

decreases most dramatically upon retirement and in the imme-
diately ensuing years, and for most categories of retirees the
share of Social Security benefits in total income is the largest of
all. Only for those in the top quartile stratum of income was
the share of Social Security benefits in total retirement income
sometimes a little lower than or the same as those of asset
income or pension benefits. For other groups of retirees with
low total income—blacks, women, those in the bottom quar-
tile stratum of preretirement income—the share of combined
income from assets, pension plans, and other transfer programs
was still smaller than that of Social Security benefits.

   In terms of changes in real dollar amount of income with
retirement, Figs. 1–5 provide a clear picture. Figure 1, in fact,
shows that average total income for sample members in most
categories started to decline 2 years before their self-claimed
retirement, apparently due to declining earnings in the same
period. Especially between 1 year before retirement and 1 year
after retirement, earnings of sample members in all categories
dropped sharply. As shown in Fig. 2, the incomes of those

Figure 1.

*Changes in Mean Total Income Before and After Retirement by Race,
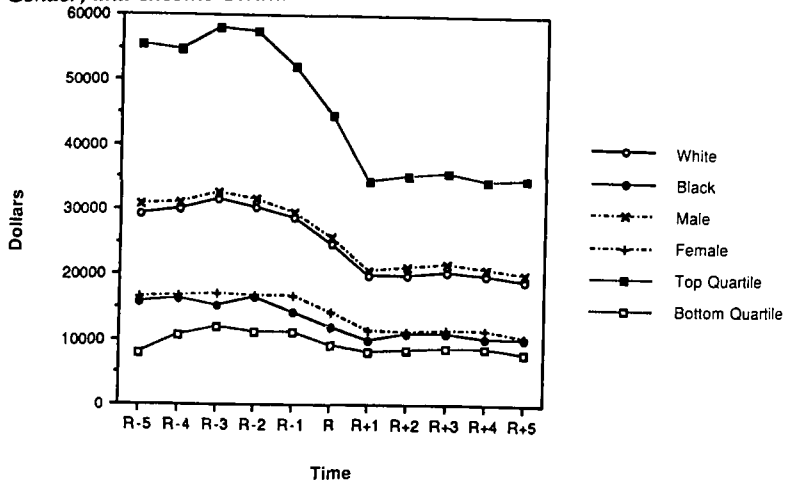Gender, and Income Strata*

Figure 2.

Changes in Earnings Before and After Retirement by Race, Gender, and Income Strata
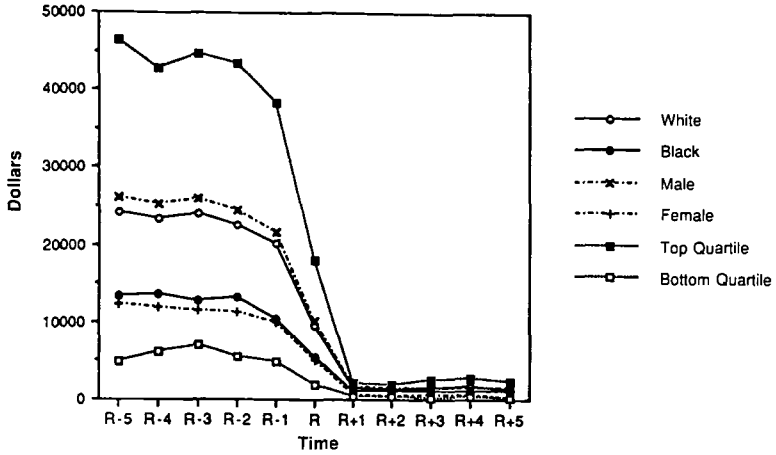

Figure 3.

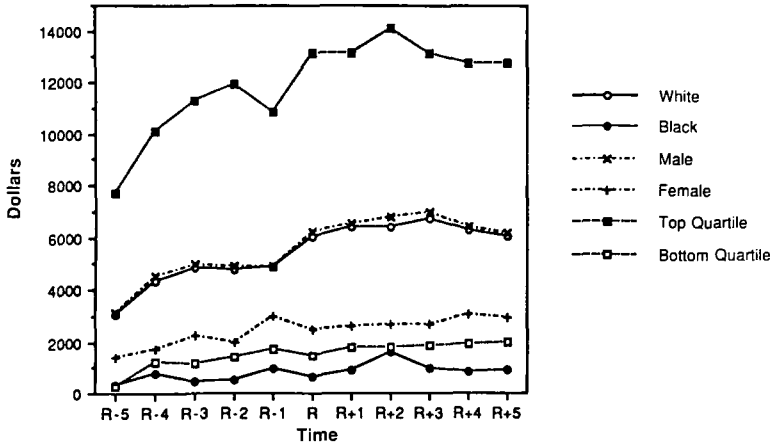*Changes in Income from Assets Before and After Retirement by Race, Gender, and Income Strata*

Figure 4.

*Changes in Social Security Benefits Before and After Retirement by Race,
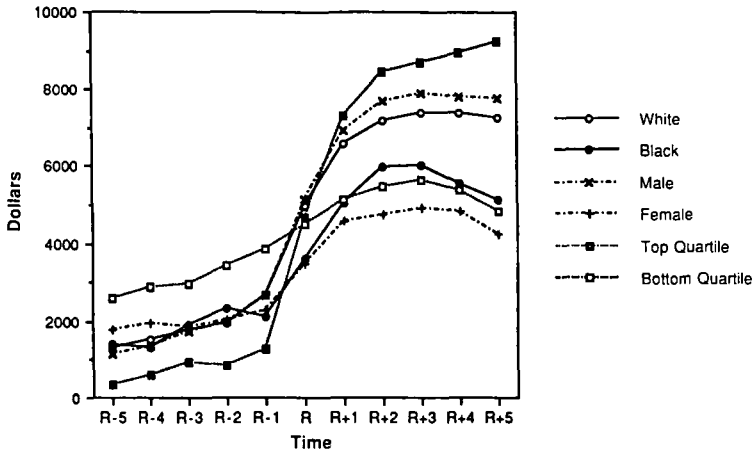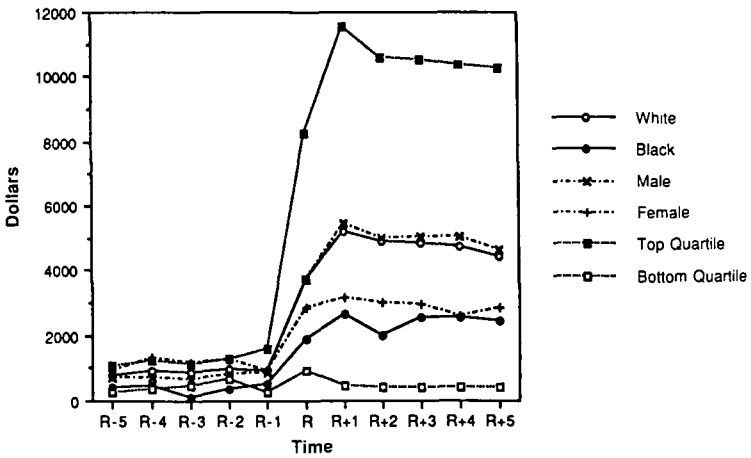Gender, and Income Strata*

Figure 5.

*Changes in Pension Benefits Before and After Retirement by Race, Gender,
and Income Strata*

who had the highest preretirement earnings dropped the most drastically, yet they still managed to have higher postretirement earnings than any of the others.

Owing to increased Social Security income, pension benefits, and income from assets at and after retirement, however, mean postretirement income appears to have been quite stable for all retirees throughout the study period. Fortunately for those in lower economic strata—blacks, women, and those in the bottom quartile—their retirement income did not quite represent a precipitous decline from preretirement income. Although the preretirement economic gap between races, genders, and income strata continued after retirement, those who experienced the most precipitous decline in income due to retirement were the ones who had the most income before retirement.

The continued income gap between races, genders, and income strata in postretirement years can be explained by significant differences in the amount of income from assets and pension benefits (see Figs. 3 and 5). For income from both assets and pension benefits, the difference in the average dollar amount between the top quartile and the bottom quartile was as high as $10,000. More importantly, further analysis showed that fewer than 15% of those in the bottom quartile received any pension benefits after retirement, whereas about 65% of those in the top quartile did. A little more than 50% of those in the bottom quartile, in contrast to approximately 90% of those in the top quartile, had income from assets to support their retirement. Moreover, especially in terms of income from assets, blacks appeared to be the most disadvantaged of all. Although a noticeable gap also exists in the distribution of postretirement Social Security benefits (see Fig. 4), it is relatively small compared to the gaps in income from assets and pension benefits. An interesting but expected finding is that single women received the smallest amount of Social Security benefits after their retirement due mostly to their shorter work histories and lower wage levels than those of workers in other categories.

Changes in the poverty rate.   In fact, the most important indicator of the differences in the level of retirement income between races, genders, and economic strata was the poverty rate. (For the calculation of poverty rates, both household heads'

and wives' incomes were used for married couples, while obviously only the head's income was used if he/she was single.) That is, 5 years prior to retirement, 6.1% of all sample members had total income (including food stamps) below the official poverty threshold, still with significant racial differences. A difference was also found, naturally, between the top and the bottom quartiles of income, with 24.6%, or almost one quarter, of those in the bottom quartile having had income below the official poverty line. But slipping of economic status was quite evident for almost all sample members in the year of retirement, with the addition of 3+ percentage points in the poverty rate. Five years after retirement, the overall poverty rate was increased by more than 300%, to 19.9% as compared to that 5 years before retirement. The significant differences between genders as well as races were still maintained, as shown in Table 3. That is, 5 years after retirement, about one third of black and female sample members were living below the poverty line, and close to one half of all those who had been in the bottom quartile stratum of income early on were living below the poverty line at the end of the study period. Even the proportion of white and male sample members who were poor was quite high. So, although the average income of retirees appeared to be stable in postretirement years, the findings essentially confirmed those of earlier studies that showed the precipitous drop in income at retirement and its gradual deterioration afterward.

Determinants of postretirement income level. As shown in Table 4, the results of the OLS regression analyses show that those who were married, those who had higher education, and those with a higher preretirement income were more likely to have a higher postretirement income than those who were single, those who had lower education, those with and a lower preretirement income. Although Table 4 presents coefficients that are significant at a level .05 or lower, further analysis shows that being a male in itself is significantly positively associated with high postretirement income at a .10 level. Interestingly, despite the obvious racial differences in the level of both pre- and postretirement income, race in itself was apparently not a significant determinant of total income 5 years after retirement.

Table 3.

Changes in Poverty Rate (%) Before and After Retirement

		Race		Gender		Income Stratum	
	All	White	Black	Male	Female	Top Quartile	Bottom Quartile
N	331	221	110	244	87	83	82
(%)	(100)	(88.8)	(11.2)	(78.2)	(21.8)	(25.0)	(25.0)
5 years before retirement	6.1	4.5***	19.2***	5.1	9.9	0***	24.6***
1 year before retirement	8.3	5.1***	33.4***	5.8**	16.9**	1.7***	24.6***
Year of retirement	11.3	9.1***	28.6***	9.7*	17.0*	3.4***	33.0***
5 years after retirement	19.9	18.5*	30.8*	16.2***	33.1***	3.3***	46.7***

***p<.001; **p<.05; *p<.10: Denote significant differences between races, genders, or income strata.
Note: Statistics are all weighted.

It is most likely that differences in education and preretirement income between whites and blacks are real causes for their postretirement income differences.

In Model II, in addition to the variables found significant in Model I, gender and the interaction terms between gender and preretirement income, education, and work history were also significant. The interaction effects indicated that being a male significantly added to the positive effects preretirement level of income and education had on the postretirement level of income. Although work history in itself is not a significant predictor of postretirement income, being male and having long work history were significantly positively related to postretirement income level. But it should be noted that the gender variable and all the interaction terms added only 3% to the total variance explained.

Table 4.

Determinants of Income 5 Years After Retirement: Stepwise OLS Regression Coefficients

Dependent variable: Income 5 years after retirement (logged)	Model I		Model II	
	Beta	T	Beta	T
Marital status	.187	4.232	.257	3.853
Education	.154	3.245	.508	4.793
Age at retirement		n.s.		n.s.
Income 5 years prior to retirement (logged)	.558	11.019	.283	2.764
Work history since age 18		n.s.		n.s.
Race		n.s.		n.s.
Sex		n.s.*	1.639	3.016
Sex × education			.732	3.737
Sex × income 5 years prior to retirement (logged)			2.070	3.327
Sex × work history			.227	2.209
Multiple R	.725		.230	
R²	.526		.563	
Adjusted R²	.521		.552	
SE	.237		.230	

*Significant at a .10 level.
Note: For interaction effects, only those that are found significant are listed.

Discussion and Summary

The findings of this analysis confirm our hypothesis. Older workers were indeed found to reduce their work hours and earnings 2 to 3 years prior to retirement in preparation for the retirement. The sharpest drop in work hours was found in those in the highest income group who have had the longest preretirement work hours. The comparison of changes in average total income due to retirement also showed that the higher the preretirement income, the wider the range of change. So, retirement leveled off the income gap between rich and poor to a certain extent, owing especially to Social Security benefits; the

average difference between the two groups 5 years after retirement, though, was still more than $25,000. This postretirement income difference was due largely to differences in income from assets and pension benefits, whereas the preretirement income difference was due to differences in earnings.

Significant differences in the level of income and in poverty rates were also found between races and genders. Blacks and women had lower pre- and postretirement income than whites and men, respectively. But multivariate analyses showed that the racial effect is more spurious than real. The real cause of blacks' low postretirement income level lay in their low education and low preretirement income level. And the effect of gender, when the other variables were held constant, was also marginal.

An interesting finding, however, was that examination of Social Security benefit receipt, as shown in Fig. 4, indicated that many workers in low-income groups, including women and blacks, had in fact received Social Security benefits well before their self-claimed retirement. Previous studies have often defined the receipt of Social Security benefits as coterminous with retirement and thus have reported frequent postretirement work activities of low-income retirees in an effort to supplement their retirement income. This study also showed that some low-income retirees continued working after self-claimed retirement, but not to the extent of what previous studies have indicated. The difference is believed to be due to the difference in the definition of retirement. What this study found was that many low-income workers in reality started to receive Social Security benefits to compensate their decreasing earnings as they approach retirement. Social Security benefits were thus found to serve as an equally important safety cushion for both those approaching retirement and those retired in low economic status.

It should be also noted that the income of 1 out of 5 retirees in this study was below the poverty line 5 years after retirement. Specifically, approximately one third of blacks and women were in poverty 5 years after retirement. Given that the average ages at retirement were 65.6 years and 65.8 years for blacks and women, respectively, they were in their early seventies when they had been retired for 5 years. So, it appeared that most of

them were not able to engage in any income-producing work and that they were likely to live in old age on whatever they received from current sources of income. In addition to the increasing cost of health care in old age, however, the dwindling value of pensions even for those who now enjoy some pension benefits puts a higher proportion of retirees into poverty as the length of their retirement increases.

The policy implications of the findings are these: (1) Given that Social Security benefits constitute a major source of income for low-income elderly people, especially blacks and women, we have to continue providing the cost of living adjustment (COLA) for the benefits. (2) Low-income retirees should be encouraged to take postretirement jobs, to a greater extent, which will supplement their meager retirement income. Policies and programs can be designed to help connect low-income retirees with jobs. (3) Given that the low level of preretirement income is the real cause of the low level of postretirement income, a system to promote and guarantee private pensions or individual or group retirement account for low income workers should be studied and instituted.

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