Women Born in the Early 1900's: Employment, Earnings, and Benefit Levels

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The women who became newly entitled to retirement benefits in 1970 were the war workers of the 1940's. They pioneered the trend for large numbers of married women to work outside the home. This article reports on their lifetime work experience—comparing their years of covered employment, covered earnings, and social security benefits to men's. As expected, their years of employment were fewer and less continuous than men's and their highest annual earnings were lower. A part, but only a part, of the difference in earnings between the sexes would disappear if employment histories were the same. Moreover, the difference in benefits, although already substantial, does not yet fully reflect these differences in employment and earnings.

AT PRESENT, WOMEN with the same work histories as men are entitled to slightly higher social security retirement benefits because, until 1975, the benefit formula gives a slight advantage to women. Nevertheless, average benefits received by retired women are lower than those received by men because in fact women have different work histories and earnings records. In June 1973, for example, the average monthly benefit paid to retired men was $180.72; to women, $144.24. Since the benefit formula is based on monthly earnings, averaged over much of an adult life, it is often thought that women receive lower benefits because they typically have shorter and more frequently interrupted worklives than men.

This article reports on the work patterns, earnings levels, and benefit levels of women workers in the particular age cohort becoming entitled to retirement benefits in 1970. Actual work histories from the social security record system were used.

POPULATION COVERED

For many years during the first half of this century, improvements in the technology of housekeeping, a decrease in family size, the growing availability of consumer goods, and an expansion in occupations that require little physical strength gradually decreased the costs and increased the rewards of working for many married women. The labor shortage and concomitant social acceptance of working women in World War II accelerated this long-term process. Since then, labor-force participation of married women has grown rapidly. Studies made in the 1960's found a lifetime participation pattern for women that peaks in their early twenties and midforties and drops off during the childrearing and preretirement years.[1] These studies also found that race, employment status of one's husband, education, and other factors were important in deciding whether or not married women worked.

During the past 10 years these studies have become dated. The pronounced drop in participation during childrearing and preretirement years may not occur in the future, as the birth rate falls, work by mothers of small children becomes more socially acceptable, and arrangements develop to facilitate child care. Table 1

TABLE 1.—Labor-force participation rates [1] of married women with husband present, by presence and age of children, March 1960–73

Year	All wives	Wives with no children under age 18	Wives with children under age 18				
			Total	Children aged 6–17 only	Children under age 6		
					Total	Children aged 3–5 [2]	Children under age 3
1960	30 5	34 7	27 6	39 0	18.6	25.1	15.3
1961	32 7	37 3	29 6	41.7	20.0	25 5	17.0
1962	32 7	36.1	30 3	41 8	21.3	27.2	18.2
1963	33 7	37.4	31.2	41 5	22.5	28.5	19.4
1964	34 4	37 8	32.0	43 0	22.7	26.7	20 5
1965	34 7	38 3	32.2	42.7	23 3	29 2	20.0
1966	35.4	38 4	33.2	43 7	24 2	29.1	21.2
1967	36 8	38 9	35.3	45 0	26.5	31.7	23 3
1968	38 3	40 1	36.9	46 9	27.6	34.0	23.4
1969	39 6	41 0	38.6	48 6	28.5	34 7	24 2
1970	40 8	42 2	39.7	49 2	30 3	37.0	25 8
1971	40 8	42 1	39 7	49 4	29.6	36 1	25 7
1972	41.5	42 7	40 5	50 2	30 1	36 1	26.9
1973	42.2	42 8	41.7	50 1	32.7	38 3	29 4

[1] As percent of total population.
[2] No children under age 3
Source Bureau of Labor Statistics, *Special Labor Force Report Summary, Marital and Family Characteristics of Workers, March 1973*, Aug 1973, table 2, p. 5

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[1] Many of these studies are enumerated in Herbert S. Parnes et al., *Dual Careers* (Manpower Research Monograph No. 21), U.S. Department of Labor, 1970, page 53.

shows the extent of changes in labor-force participation rates for women since 1960. In 1973 half the married women who were mothers of children as young as age 6 were working, compared with only 39 percent in 1960. Almost one-third of the mothers of preschool children were working in 1973, compared with less than one-fifth in 1960. These figures represent a very significant change in work patterns over a short span of years.

This article studies women who became entitled in 1970 to retirement benefits based on their own wage records. These women represent about half the 1 million women aged 62 and over who were newly entitled[2] to all types of benefits in 1970, as the following distribution shows.

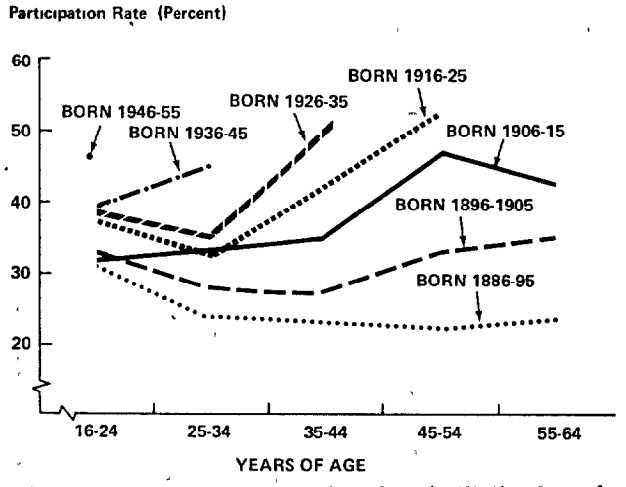
Beneficiary type	*1970 awards to women*
Total percent	100
Retired workers	48
Widows	24
Wives	28

Of the 52 percent receiving dependent's benefits as widows or wives, an unknown number may have worked at some time but were not in the covered labor force long enough to be eligible for even a minimum retirement benefit on their own record. Conversely, about 11 percent of these retired women workers were dually entitled as workers and dependents. That is, the retirement benefit on their own work record was so small that they received that benefit plus a supplemental benefit to equal the amount they would receive as a wife or widow.

The cohort of women newly entitled to retired-worker benefits in 1970 is worthy of special study for it is among the first to have worked outside the home to any large extent. The depression of the thirties, in which few babies were born, came during their normal childbearing period. World War II, with its extraordinary calls on labor resources, found them with few children to care for and husbands away, and thus they entered the labor force in great numbers. Further, many did not return to their homes when the war was over but remained in the labor force.

The vast majority of this cohort was born between 1905 and 1908. The difference between

CHART 1.—Labor-force participation over a working life of cohorts of women born in selected time intervals, 1886–1955



[1] Total labor force as percent of total noninstitutional population in group specified

Note: For women born between 1885 and 1915, the first age plotted is 14–24 years. Cohorts reach each age interval according to the midpoints of their birth years. Thus, the cohort born 1886–95 reached ages 25–34 in 1920 and ages 55–64 in 1950; the cohort born 1916–25 reached ages 25–34 in 1950 and ages 45–54 in 1970.

Source: *Economic Report of the President*, page 94, January 1973

their worklife pattern and the patterns of preceding and, to some extent, succeeding cohorts is shown in chart 1. Those born before 1905 had very low participation throughout their working lives, and those born after 1915 dropped out of the labor force for a short time in their twenties and early thirties but later reentered in great numbers. Since almost 45 percent of the cohort born between 1936 and 1945 was working between ages 25 and 34, the most recent cohorts cannot even be said to be dropping out to a large extent for childrearing. The 1970 retirement cohort had an unique worklife pattern and appears to represent a transition between two eras.

DATA SOURCE

Data in this article are from the Continuous Work History Sample (CWHS) maintained by the Social Security Administration. The CWHS is a 1-percent sample of holders of social security numbers and includes records of covered earnings and benefits claimed. This data source has important strengths and weaknesses.

First, the CWHS is one of a few available sources of longitudinal data and covers the large majority of working women. It exists because it is necessary for the administration of the social security program, not primarily for research

[2] See the Technical Note at the end of the article for a discussion of entitlements in relation to awards.

purposes. Many researchers, however, both within the Social Security Administration and outside, have found the existence of such a large sample of records (2 million) to be a rich source of data.

The CWHS is very valuable for purposes of research on lifetime employment patterns and is much superior to the cross-sectional data usually used for labor-force description. The analysis using longitudinal data follows actual people during their working lives. In contrast, cross-sectional data compare people of different ages at a given time (the year 1970, for instance). Thus, the CWHS permits comparison of different life stages of individual women; the cross-sectional method permits comparisons only across generations.

The cross-sectional method has been less than successful in predicting changes in labor-force participation of married women. Predictions, for example, that current rising trends would level off have not been fulfilled. In fact, the female labor force surpassed Bureau of Labor Statistics projections by about 6 percent in 1970 and will again in 1975, perhaps by another 6 percent.[3]

The cohort method is intermediate between the longitudinal and cross-sectional methods. Used to construct chart 1, the method follows not individuals but groups of individuals of about the same age. Though it shows averages for generations, it can show only net change, not gross change. A complete turnover of personnel between, say, ages 40 and 50, would be missed by the cohort method.

Though an exceptional longitudinal data source, the CWHS also has important limitations. First, it only contains records on work covered by the social security program. Work that took place before 1937 is not recorded. In addition, work that may have taken place since then in noncovered employment is not included. What appears to be entrance into the labor force may in reality be new coverage of old employment. Fortunately, most of the recent expansion of coverage is identifiable as such because it took place in two years of particularly heavy increases, 1951 and 1955. From 1950 to 1951, coverage increased from 64.5 percent to 79.5 percent of paid employment. Most of this increase was among domestic workers, nonfarm self-employed workers, and State and local government employees. From 1954 to 1955, coverage rose from 79.3 percent to 85.3 percent of paid employment because of new coverage of farm workers, self-employed farmers, employees of nonprofit organizations, and some other small groups. Since then the percentage of workers covered has increased gradually until 90 percent are now covered, with Federal Government workers the largest group excluded.

Because of the expansion of coverage in 1951 a "new start" was established in that year, and benefits are computed from that date if it is to the advantage of the worker. The records for work performed from 1937 through 1950 are kept in considerably less detail than those for work performed after. Only enough is retained in the record to tell which method of computation produces a greater benefit.

For the 1970 entitlement cohort, these limitations mean that the CWHS provides detailed data on work patterns after about age 40, less detailed data during the worker's late twenties and thirties, and no data at all before that. In addition, "entrance into the labor force" in the year 1951 and 1955 (19 or 15 years before entitlement, respectively) has an ambiguous meaning for this cohort.

The second major problem with the CWHS is that only those earnings at or below the taxable maximum in any year are recorded. Therefore, care must be taken in drawing conclusions about total earnings from the earnings record data. Data on covered earnings tend to underestimate differences in total earnings between men and women, for the maximum has a different effect on each sex. In 1970, 38 percent of the men and 6 percent of the women had earnings above the maximum taxable amount ($7,800 in that year).

Still another limitation of the data is that little demographic detail about workers is given. Only race, age, and sex are known, leaving important questions unanswered about education, marital status, and total financial resources.

WORK PATTERNS

Length and Continuity of Employment

The data show many women in this age group had long and continuous careers after 1937 (table

[3] See Marc Rosenbloom, "On Accuracy of Labor Force Projections," *Monthly Labor Review*, October 1972.

TABLE 2.—Number of years with covered earnings and career continuity, by sex, 1937–69. Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable and postponed at award

Years with covered earnings and career continuity	Women	Men
Total number (in thousands)	492	718
Total percent	100	100
Continuous, total	39	46
Discontinuous, total	61	54
33	8	27
Continuous	8	27
Discontinuous		
27–32	14	28
Continuous	4	6
Discontinuous	10	22
21–26	17	15
Continuous	4	2
Discontinuous	13	13
15–20	26	17
Continuous	9	7
Discontinuous	17	10
9–14	23	8
Continuous	8	3
Discontinuous	15	5
Less than 9	12	5
Continuous	6	3
Discontinuous	6	2

2). As might be expected, however, many more men than women had long, unbroken worklives.

Length in this context means time in covered employment after 1937, so work performed in their teens and twenties is omitted for this cohort. The period before or just after marriage is a time of life when many women work; for some women it is their only work experience. For this cohort it coincided with a period when jobs were available, before the onset of the depression. For this reason the CWHS underestimates not only the amount of work done by women (as it does for men) but also the total number of women in this cohort who worked at some time during their lives.

Continuity of career means that there was no break in earnings receipt for as long as a year. All careers with breaks of a year or more are classified as discontinuous, whether the break was caused by sickness, unemployment, noncovered employment, or just being out of the labor force. Thus, this is a heterogeneous group. Since receipt of as little as $50 in a calendar quarter qualifies a worker for coverage, less than this amount must be received for four consecutive quarters if a discontinuity is to be recorded. Continuous coverage then becomes a somewhat heterogeneous category also. Nevertheless, as will be discussed below, the distinction between continuous and discontinuous employment is a significant one. Thirty-nine percent of all women entitled to retirement benefits had continuous careers (as did 46 percent of all men).

Of the women, 39 percent had careers of more than 20 years before entitlement (and, as will be seen later, some of them went on working after entitlement as well). Sixteen percent worked this span without interruption; 23 percent had careers that were more than 20 years though broken at least once. For men the picture is very different: 70 percent worked more than 20 years, and half of this group had continuous careers.

Though continuity of career is somewhat more rare for women than for men, CWHS data clearly show that a large number of women do stay in the labor force (though of course an earlier break may have taken place before 1937). Many women also had interrupted, although long, careers. For men, both continuous and discontinuous careers tend to be long. Breaks in employment for men appear to be few and/or short. Two-thirds of the men with discontinuous careers, for example, had covered employment of more than 20 years.

Timing of Employment

The late twenties and early thirties are the time of life when most married women with children do not work. Nevertheless, 42 percent of the women in this cohort (and 70 percent of the men) entered covered employment between 1937 and 1941, at an age range of 29–35 (table 3).[4] Some of the reasons why such a large number worked at this time have already been mentioned: low fertility and perhaps postponement of marriage during the depression. Many of this group were also working in the year before entitlement—24 percent of the women and 58 percent of the men. Only 7 percent of the women worked without a break in service for this long span (compared with 37 percent of the men).

One-fourth of the women entered the covered labor force during World War II, and an additional 8 percent entered immediately after. Finally, 25 percent of the women entered during their middle forties or later. It should be remembered that some of those who entered employ-

[4] Where data permit, this article deals with all workers entitled to benefits, though in some cases, such as table 3, because of data constraints, only those workers with payable awards are presented.

TABLE 3.—First year with covered earnings, approximate age in first year, and career continuity, by last year with covered earnings and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable at award

First year with covered earnings, approximate age, and career continuity	Last year with covered earnings													
	Women							Men						
	Total	1969	1966-68	1963-65	1959-62	1951-58	Before 1951	Total	1969	1966-68	1963-65	1959-62	1951-58	Before 1951
Total number (in thousands)	394							454						
Total percent	100	62	12	8	6	8	4	100	83	9	3	2	3	1
Continuous, total	37	24	3	2	2	3	3	42	37	2	1	(1)	1	1
Discontinuous, total	63	38	9	6	4	5	1	58	46	7	2	2	2	(1)
Before 1941 (late 20's-early 30's)	42	24	5	3	3	4	4	70	58	6	2	2	2	1
Continuous	12	7	3	1	1	1	3	29	26	2	(1)	(1)	(1)	1
Discontinuous	30	17	2	2	2	3	1	41	32	4	1	2	2	(1)
1941-45 (middle 30's)	25	15	3	2	2	3	1	12	10	1	(1)	(1)	(1)	(1)
Continuous	6	3	1	(1)	(1)	1	(1)	3	3	(1)	(1)	(1)	(1)	(1)
Discontinuous	19	12	2	2	2	2	1	9	7	1	(1)	(1)	(1)	(1)
1946-50 (late 30's-early 40's)	8	5	1	1	1	1	(1)	4	3	(1)	(1)	(1)	(1)	
Continuous	3	2	(1)	(1)	(1)	1	(1)	1	1	(1)	(1)	(1)	(1)	
Discontinuous	5	3	1	1	1	(1)	(1)	3	2	(1)	(1)	(1)	(1)	
1951-54 (middle 40's)	10	7	1	1	1	(1)		6	5	1	(1)	(1)	(1)	
Continuou	5	4	(1)	(1)	1	(1)		3	3	(1)	(1)	(1)	(1)	
Discontinuous	5	3	1	1	(1)	(1)		3	2	(1)	(1)	(1)	(1,	
1955-60 (late 4 's or older)	14	12	2	1	(1)			8	7	1	(1)	(1)	(1)	
Continuous	8	8	1	1	(1)			6	6	(1)	(1)	(1)	(1)	
Discontinuous	6	4	1	(1)	(1)			2	1	(1)	(1)	(1)	(1)	

[1] Less than 0 5 percent.

ment at this time "entered" only in that their job became covered for the first time and that, of course, any of these patterns may have been preceded by work before 1937.

If women enter the labor force late, they may still make a significant contribution, even though they are "workers" rather than "housewives" for only about half of a full working life. Even at age 40, then, women are likely to be excellent employment and training prospects not subject to high turnover rates.

A short worklife is by no means synonymous with an unstable one. Whether a worklife of 20 years or less is a significant commitment to the labor force depends on whether it is spread out over many years or concentrated on one period of intensive work. Two women may have the same total worklives, measured in quarters of coverage. Yet one of them may have worked off and on in many different jobs over her entire adult life. The other may have entered the labor market when her children were elementary school or high school age and worked steadily, perhaps at the same job, for 20 consecutive years. These women make very different work commitments and are likely to think of themselves differently.

About half the women in the group had careers of from one to two decades (table 4). The timing of the employment of these quarter of a million women varies, as can be seen in this percentage distribution:

Years worked before 1951	Career continuity		
	Total	Continuous	Discontinuous
Total with worklives from 9–20 years	100	34	66
5 or more	34	6	28
1–4	29	2	27
None	37	26	11

Thirty-seven percent of the women worked only after 1951, that is, they entered in their early or middle forties. Seventy percent of this group worked continuously—an indication that many women (although by no means a majority of the cohort) enter late but work steadily until retirement.

Timing of Retirement

Another dimension of choice about one's career pattern, besides when to enter the labor force and how regularly to work, is when to retire. Many people have choice in these matters, even within the limits imposed by health and job-related considerations (such as compulsory retirement policies of an employer).

Entitlement to social security benefits is not the same as complete retirement, since a limited

TABLE 4.—Length of covered employment, 1937–69, and number of years worked before 1951, by benefit-payment status at award and career continuity: Number of women workers newly entitled in 1970 to retired-worker benefits payable and postponed at award

Years of covered employment and years worked before 1951	Total number (in thousands)			By benefit-payment status at award (in thousands)					
				Payable			Postponed		
	Total	Continuous	Discontinuous	Total	Continuous	Discontinuous	Total	Continuous	Discontinuous
Total	492	193	299	395	145	250	97	48	50
33 years, total	39	39	0	24	24	0	16	16	0
29–32 years, total	39	13	26	29	10	19	10	3	7
25–28	59	19	40	44	14	30	15	5	10
9–14 before 1951	30	8	22	24	6	17	7	2	5
5–8	28	11	18	20	8	13	8	3	5
21–24	57	13	44	45	11	34	13	2	11
9–14 before 1951	14	3	10	12	3	9	1	(1)	1
5–8	23	3	20	18	3	15	5	(1)	5
1–4	20	6	14	14	5	9	6	2	4
15–20	126	42	84	101	30	72	25	12	13
9–14 before 1951	20	4	16	18	4	14	1	(1)	1
5–8	25	2	23	23	2	21	2	(1)	2
1–4	41	3	38	32	3	29	9	1	8
None	41	33	8	28	21	7	13	11	2
9–14	115	40	76	101	33	68	15	7	8
All before 1951	8	5	3	8	5	3	1	1	0
5 or more (but not all)	29	3	26	27	3	24	2	(1)	2
1–4	29	2	27	25	2	24	4	0	4
None	49	30	19	41	24	17	9	7	2
1–8	57	27	30	51	24	28	5	3	2
All before 1951	12	8	4	12	8	4	0	0	0
Some	15	2	13	14	1	13	1	(1)	1
None	30	18	13	26	15	12	4	3	1

[1] Less than 500.

amount can be earned while benefits are being paid.[5] For many, however, a substantial withdrawal from the labor force must take place before benefits are payable. A worker can become entitled to benefits at ages 62–64 with an actuarial reduction of the benefit amount or at age 65 or older without such a reduction.[6] Most postponed awards occur when insured workers file for Medicare at age 65 but are still earning too much to be eligible for retirement benefits.

For all workers, the choice must depend on the financial and personal rewards of working in relation to the rewards of not working. Early retirees in good health either have good second pensions that enable them to retire with sufficient financial resources or, at the other extreme, have had difficulty finding work in the years just before retirement. For women, another factor that often weighs in the retirement decision is the probability of having a somewhat older husband who has already retired.[7]

Half the women workers in the group and only one-third of the men claimed benefits at age 62. Twenty percent of the women, compared with 37 percent of the men, claimed postponed benefits —that is, they continued to work after retirement age. Postponed benefits are related to length of career for women. Both long careers and election of postponed benefits may be interpreted as evidence of strong labor-force attachment. For men, postponed benefits do not vary so much by years of covered employment:

Years of covered employment, 1937–69	*Postponed benefits*	
	Women	*Men*
Total percent	20	37
33	40	45
27–32	26	36
21–26	23	33
15–20	20	35
9–14	13	31
Less than 9	9	26

[5] Under the earnings test in 1970 benefits for workers under age 72 were reduced $1 for every $2 of annual earnings from $1,680 to $2,880 and $1 for every $1 earned above $2,880 a year; regardless of annual earnings, benefits were paid for any month in which the beneficiary earned less than $140. Effective January 1, 1974, the annual exempt amount is raised to $2,400 (the monthly amount to $175) and the $1-for-$1 reduction is replaced by a $1-for-$2 reduction above $2,400.

[6] Retired-worker benefits are reduced by 5/9 of 1 percent for each month before age 65 for which a benefit is paid (up to a total of 20 percent if claimed at age 62).

[7] Reasons for early or late retirement are complex. See, for example, Virginia Reno, "Why Men Stop Working At or Before Age 65," *Social Security Bulletin*, June 1971, and "Women Newly Entitled to Retired-Worker Benefits," *Social Security Bulletin*, April 1973.

TABLE 5.—Last year with covered earnings, by age at entitlement, benefit-payment status at award, and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable and postponed at award

Last year with covered earnings	Benefit-payment status at award											
	Women						Men					
	Total	With payable benefits at age—				With postponed benefits	Total	With payable benefits at age—				With postponed benefits
		62	63–64	65	66 and over			62	63–64	65	66 and over	
Total number (in thousands)	492	255	87	32	21	97	718	238	153	45	19	264
Total percent	100	100	100	100	100	100	100	100	100	100	100	100
1969	68	55	75	77	66	95	87	78	90	86	80	95
1968	5	7	3	5	3	1	3	7	2	2	4	1
1966–67	5	8	4	4	6	1	3	6	2	2	4	1
1963–65	6	9	5	4	5		2	4	2	2	2	1
1959–62	5	8	2	3	6	1	2	3	1	2	2	1
1951–58	7	9	7	4	8	2	2	3	2	4	3	1
Before 1951	4	5	4	4	7	1	1	1	1	3	5	1

Continuity of career is another clue to strong labor-force attachment. Early retirement is less likely and postponed benefits are more likely if the career has been continuous than if it has been intermittent. For the 1970 entitlement cohort the percentage distribution of payable and postponed benefits was as follows:

Career continuity and sex	Total	Benefit-payment status at award				
		Payable benefits at age—				Postponed benefits
		62	63–64	65	66 and over	
Women, total	100	52	18	6	4	20
Continuous	100	44	19	7	4	26
Discontinuous	100	56	17	6	4	17
Men, total	100	33	21	6	3	37
Continuous	100	27	21	7	2	43
Discontinuous	100	39	21	5	3	32

The data in table 4 also reveal that continuous workers are more likely than discontinuous workers to claim postponed benefits—48 out of 193 versus 50 out of 299, respectively. About 20 percent of the women who worked one to two decades continued working after retirement age.

Many people who elect early retirement benefits have not worked for some time.[8] By the same token, a person in his late fifties or early sixties is more likely to continue working up to entitlement if he has a steady job than if he has a less secure job. Thus, 77 percent of the women and 86 percent of the men who claimed payable benefits at age 65 had worked in the previous year, compared with 95 percent of the workers who filed for postponed benefits (table 5). Of the persons claiming benefits at age 62, however, only 55 percent of the women and 78 percent of the men had worked in the previous year.

In summary, women are likely to claim benefits earlier than men and are less likely to work right up to the time of entitlement. Similarly, women are less likely than men to choose postponed benefits. Both men and women who retire at or after age 65, however, are likely to have had longer, more continuous careers than those who receive benefits at age 62. Women in this cohort have shorter careers, are less likely to work continuously once in the labor force, and usually begin their careers later and end them earlier than men. Nevertheless, these women were significantly attached to the labor force. As expected, this attachment frequently appears in the later years of a woman's worklife, but many had early work experience and some had very long careers in covered employment. During their forties and fifties a large number of women worked for more than a decade. Of these, many worked continuously and many worked after the age of entitlement to retirement benefits.

EARNINGS LEVELS

Social security benefits depend not only on the number and timing of years in covered employ-

[8] See Patience Lauriat and William Rabin, "Men Who Claim Retirement Benefits Before Age 65: Findings From the Survey of New Beneficiaries, 1968," *Social Security Bulletin*, November 1970.

ment but also on covered earnings averaged over those years. Earnings and experience are not separate topics, however. Because of the accumulation of human capital through on-the-job learning, experience contributes to productivity and thus influences earnings. The question addressed here is to what extent do differences in earnings between men and women disappear when experience is the same?

Earnings for Men and Women in General

An earnings differential between men and women has always existed. In 1971 median annual earnings for women were $2,986, just 40 percent of the men's median earnings of $7,388.

The earnings differential has several components. First, annual earnings for men and women are not strictly comparable, since men work more weeks in the year and more hours in the week than do women (table 6). Eighty-one percent of the men and 68 percent of the women worked at full-time jobs in 1971. Furthermore, 65 percent of the men but only 42 percent of the women worked full-year full-time. Comparison of median annual earnings of full-year full-time workers shows that women's earnings were 60 percent of men's in 1971. Even comparing full-time workers does not adequately adjust for differences in time worked during the year, however. In 1972, average full-time hours for men were about 10 percent higher than those for women.[9]

Second, there may be productivity differences between men and women that make men more qualified for some jobs. Amount of schooling is one example; physical strength, important for a few jobs, is another. Recently, analysis has turned to the role of experience in earnings differentials. One study[10] found that, if account were taken of the sequence of work episodes in a woman's life, most of the difference between the earnings of men and married women could be explained by differences in amount of work experience. The analysis also took explicit account of the depreciation of skills that may take place during the period when a woman is out of the labor force.[11]

Third, another component in earnings differences—of unknown size—is discrimination. Some of the most prevalent forms of discrimination are: differences in recruitment for and availability of educational and training programs; the socialization of children into men's and women's roles; barriers to certain occupations; reluctance to promote women; and different pay for the same work. As long as these conditions persist, assurance of equal productivity and equal experience can never close the whole earnings gap.

TABLE 6.—Work experience in 1971, by sex: Percentage distribution and median annual earnings for the civilian population aged 14 and over with earnings in 1971

Work experience	Percentage distribution		Median earnings of—		
	Women	Men	Women	Men	Women as per cent of men's
Total					
Number (in thousands)	38,485	56,886			
Median earnings			$2,986	$7,388	40
Total percent	100	100			
Weeks worked on full-time job, total	68	83	$4,358	$8,269	53
50–52	42	65	5,593	9,399	60
40–49	6	7	4,016	7,011	57
27–39	6	5	2,867	5,029	57
14–26	7	5	1,726	2,634	66
13 or less	7	4	492	752	65
Weeks worked on part-time job, total	32	14	818	891	92
50–52	10	5	1,755	1,696	104
40–49	3	1	1,623	1,637	99
27–39	4	2	1,181	1,389	85
14–26	6	3	653	838	78
13 or less	9	4	305	319	96

Source: Bureau of the Census, *Current Population Reports* (P-60, No. 85), "Money Income of Families and Persons in the United States, 1971," p. 123.

Earnings and Employment Patterns: 1970 Entitlement Cohort

The CWHS data show that: (1) earnings are higher for men than for women, even when length and continuity of career are held constant; and (2) though high earnings are associated with long and continuous work experience for both men and women, the pattern of association is different.

[9] June O'Neill, "The Sex Differential in Earnings and Labor Market Discrimination Against Women," *Journal of Contemporary Business*, Summer 1973.

[10] Jacob Mincer and Solomon Polachek, "Family Investments in Human Capital: Earnings of Women," *Journal of Political Economy*, forthcoming.

[11] The Mincer and Polachek study utilized retrospective data on a cohort of married women 30–44 years of age in 1965—the National Longitudinal Sample. For a full description of this sample, see Herbert S. Parnes et al., *op. cit.*

The variable used to measure earnings is "highest taxable earnings" from 1951 through 1969. Since the taxable maximum has been rising over the years, the amount of highest earnings depends on the timing of the last year of work. In a single retirement cohort the last year of work is fairly standardized, and, when this is not the case, the degree of departure can be measured.

Earnings and years in covered employment, 1937–69.—A comparison of median earnings for men and women shows that, on the average, an added year worked gives a positive increment to the highest earnings attained. Table 7 shows that for every length of career the median earnings for men is well above that for women. Even after removing the effects of length of career, large earnings differences remain between men and women.

The distributions of highest earnings shown in table 7 are also revealing. Overall, 28 percent of the men but only 5 percent of the women earned as much as $7,800. Further, of the men who worked in covered employment every year since 1937, 57 percent attained highest earnings of $7,800 or more but only 13 percent of the women with similarly long careers had such high earnings. The same sorts of comparisons can be made for those who worked 30–32 years or 25–29 years, and the proportion of men with maximum earnings is always larger. Moreover, the highest earnings attained were less than $3,000 for 9 percent of the women who worked 33 years, 17 percent of those who worked 30–32 years, and 21 percent of those who worked 25–29 years. The corresponding percentages of men with such low incomes are much smaller.

When measured in earnings attained, therefore, a year of experience is not worth as much to a women as to a man. Reasons for this may be that a woman does not work as many weeks per year as does a man, or because her work may be part-time. Another explanation could be that not as much time or money is invested in a woman's training, either by herself or by her employer, because it may be expected that her career will not be as long or as steady as a man's. At the higher pay ranges the inequality may have to do with the lack of opportunities for promotion of women.

Earnings and years in covered employment, 1951–69.—The same patterns appear if only the

TABLE 7.—Highest covered earnings, by number of years with covered earnings, 1937–69, and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable at award

Highest covered earnings	Years with covered earnings							
	Total	Less than 10	10–14	15–19	20–24	25–29	30–32	33
	Women							
Total number (in thousands)	395	72	80	86	60	53	20	24
Percentage distribution	100	18	20	22	15	13	5	6
Total percent	100	100	100	100	100	100	100	100
$7,800	5	1	5	7	4	6	5	13
6,600–7,799	4	2	3	4	3	4	10	15
4,200–6,599	22	7	12	19	28	36	42	43
3,000–4,199	20	9	16	19	30	33	27	20
Less than 3,000	[1] 49	[1] 81	64	51	35	21	17	9
Median	*$3,201*	*$1,852*	*$2,344*	*$2,941*	*$3,600*	*$4,068*	*$5,433*	*$5,884*
	Men							
Total number (in thousands)	454	35	34	66	58	76	76	109
Percentage distribution	100	8	8	15	13	17	17	24
Total percent	100	100	100	100	100	100	100	100
$7,800	28	3	7	17	16	20	34	57
6,600–7,799	14	5	5	7	10	16	20	19
4,200–6,599	28	15	24	25	38	40	34	19
3,000–4,199	13	13	18	23	21	16	9	4
Less than 3,000	[1] 17	[1] 65	47	28	16	7	3	1
Median	*$5,937*	*$2,308*	*$3,933*	*$4,148*	*$6,084*	*$6,110*	*$7,500*	*$7,800*

[1] Includes those with no covered earnings in 1951–69

period 1951–69 (for which detailed records are available) is considered. This period is of prime importance for benefit purposes. Members of the 1970 cohort were distributed as follows:

Years with covered employment, 1951–69	*Women*	*Men*
Total percent	100	100
19	28	56
17–18	11	12
15–16	10	10
13–14	11	6
10–12	12	5
5–9	18	7
1–4	8	4
No earnings [1]	1	4

[1] Entitled to benefits based on earlier employment.

The difference between the overall earnings medians for this period is about the same as for the total period 1937–69. The same association of higher earnings and length of employment appears for both sexes (table 8). The same details of the inequalities of the distributions can be observed: for example, 19 percent of the women but only 6 percent of the men had earnings of less than $1,800. None of the men who worked 19 years fell into this bracket, but 4 percent of the women did. At the top of the distribution, 51 percent of the men who worked all 19 years attained earnings as high as $7,800, but only 13 percent of the women with similar work experience did as well.

Both payable and postponed awards are tabulated in table 8; because of data constraints, only payable awards appear in table 7. This difference in population accounts for most of the differences in median earnings shown in the two tables —$3,201 and $3,710 for women, and $5,937 and $6,771 for men. Some of the difference, however, comes about because table 8 also omits workers who had no covered earnings between 1951 and 1969 (5 percent of the women and 1 percent of the men).

Table 9 also shows data for covered earnings from 1951 through 1969, but the data are tabu-

TABLE 8.—Highest covered earnings, by number of years with covered earnings, 1951–69, and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable and postponed at award [1]

Highest covered earnings	Years with covered earnings							
	Total	1–4	5–9	10–12	13–14	15–16	17–18	19
	Women							
Total number (in thousands)	474	37	87	59	53	49	53	138
Percentage distribution	100	8	18	13	11	10	11	29
Total percent	100	100	100	100	100	100	100	100
$7,800	8	1	3	3	14	13	6	13
6,600–7,799	6	1	2	3	6	7	5	10
4,800–6,599	18	2	7	13	18	22	27	27
4,200–4,799	8	1	4	8	9	11	11	12
3,600–4,199	10	4	7	10	10	12	13	13
3,000–3,599	11	3	11	11	11	10	13	13
2,400–2,999	9	7	13	13	10	8	12	6
1,800–2,399	9	14	15	17	10	8	8	3
Less than 1,800	19	67	38	23	13	9	6	4
Median	*$3,720*	*$1,343*	*$2,280*	*$2,862*	*$3,960*	*$4,364*	*$4,108*	*$4,750*
	Men							
Total number (in thousands)	711	27	47	36	46	68	86	402
Percentage distribution	100	4	7	5	6	10	12	56
Total percent	100	100	100	100	100	100	100	100
$7,800	37	2	11	9	29	23	24	51
6,600–7,799	14	4	3	4	8	12	20	17
4,800–6,599	21	6	14	22	21	25	28	20
4,200–4,799	6	6	11	11	9	8	9	5
3,600–4,199	6	7	18	11	9	9	7	3
3,000–3,599	4	7	5	8	7	10	5	2
2,400–2,999	3	6	10	9	5	5	2	1
1,800–2,399	2	10	6	8	6	3	3	----
Less than 1,800	6	52	23	17	7	5	1	----
Median	*$6,771*	*$1,731*	*$3,800*	*$4,036*	*$5,400*	*$5,520*	*$6,279*	*$7,800*

[1] Excludes those with no covered earnings in 1951–69.

TABLE 9.—Highest covered earnings, by number of years with covered earnings, 1951–69, and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable at award [1]

Highest covered earnings	Years with covered earnings							
	Total	1–4	5–9	10–12	13–14	15–16	17–18	19
	Women							
Total number (in thousands)	377	35	78	54	42	38	41	89
Percentage distribution	100	9	21	14	11	10	11	24
Total percent	100	100	100	100	100	100	100	100
$7,800	5	1	1	1	11	8	4	10
6,600–7,799	5	1	2	3	5	6	4	9
4,800–6,599	15	1	5	11	15	21	25	24
4,200–4,799	8	1	4	7	8	10	12	11
3,600–4,199	10	3	7	10	10	12	12	12
3,000–3,599	12	3	10	11	13	10	13	16
2,400–2,999	11	7	14	14	12	10	14	8
1,800–2,399	11	14	15	18	12	10	9	4
Less than 1,800	24	69	42	25	16	12	8	6
Median	*$3,250*	*$1,304*	*$2,120*	*$2,700*	*$3,462*	*$4,000*	*$3,900*	*$4,418*
	Men							
Total number (in thousands)	449	22	35	27	30	49	60	226
Percentage distribution	100	5	8	6	7	11	13	50
Total percent	100	100	100	100	100	100	100	100
$7,800	28	2	3	4	16	15	15	45
6,600–7,799	14	4	3	3	8	10	22	17
4,800–6,599	21	6	11	17	21	25	29	22
4,200–4,799	8	5	10	12	10	10	9	6
3,600–4,199	8	6	19	13	10	12	9	4
3,000–3,599	6	6	5	9	11	11	7	3
2,400–2,999	4	6	11	11	6	7	3	1
1,800–2,399	4	11	8	9	8	4	4	1
Less than 1,800	8	54	29	22	10	7	2	(1)
Median	*$6,000*	*$1,667*	*$3,240*	*$3,533*	*$4,500*	*$4,740*	*$5,793*	*$7,518*

[1] Excludes those with no covered earnings in 1951–69

lated for workers with payable awards only. The overall medians in this table are much closer to those in table 7 than to those in table 8. Further, the median earnings for workers with the same number of years of earnings credits are also higher in table 8 than in table 9, indicating that workers with postponed awards generally have higher paying jobs than those with payable awards.

When continuous and intermittent workers are considered separately, earnings react as might be expected: continuous workers attained higher earnings than intermittent workers who worked the same number of years (table 10). Thus, a break in work continuity has an appreciable effect on earnings ever attained, even if the break occurred 20 years or more before retirement.

Seventy-seven percent of the men who were continous workers were employed all 19 of the years after 1950, as were 48 percent of the women continuous workers, but nevertheless, only 15 percent of the women received $7,800 or more, although 57 percent of the men did. The median highest earnings for men are consistently above those for women and those for continuous workers above those for intermittent workers, even if the break in career occurred before 1951 —that is even for persons who had worked 19 years.

Highest covered earnings and last year with earnings.—The percentage difference between median earnings for men and women is not particularly affected when the year last worked is held constant. In other words, highest earnings for men and for women maintain their usual relationship for any given retirement year (table 11). Apparently, then, this relationship is not greatly changed by the fact that women retire earlier, and so have not had as many years to earn the $7,800 maximum.

Race.—In general, black women earn much less than white women, and black men earn much less than white men. Though both earnings and length of employment are higher for black men

TABLE 10.—Highest covered earnings for continuous and intermittent workers, by number of years with covered earnings, 1951–69, and sex· Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable and postponed at award [1]

Highest covered earnings	Years with covered earnings							
	Total	1–4	5–9	10–12	13–14	15–16	17–18	19
	Women							
Continuous workers								
Total number (in thousands)	179	9	23	16	17	15	13	8
Percentage distribution	100	5	13	9	10	8	7	48
Total percent	100	100	100	100	100	100	100	100
$7,800	12	----------	5	2	25	18	7	15
6,600–7,799	9	1	5	5	7	13	6	12
4,800–6,599	21	2	10	19	21	19	29	26
4,200–4,799	10	1	7	7	7	9	12	12
3,600–4,199	10	4	8	11	10	8	10	11
3,000–3,599	11	6	12	13	7	6	18	12
2,400–2,999	8	11	13	11	9	8	7	5
1,800–2,399	7	19	14	13	8	4	5	3
Less than 1,800	12	55	26	20	6	14	6	4
Median	*$4,329*	*$1,636*	*$2,862*	*$3,277*	*$5,057*	*$4,895*	*$4,400*	*$5,008*
Intermittent workers								
Total number (in thousands)	294	27	64	43	35	34	39	52
Percentage distribution	100	9	22	15	12	12	13	18
Total percent	100	100	100	100	100	100	100	100
$7,800	6	1	2	3	8	11	6	10
6,600–7,799	4	1	1	2	5	4	4	9
4,800–6,599	16	2	6	10	17	23	26	27
4,200–4,799	8	1	3	8	9	11	11	10
3,600–4,199	11	4	7	10	10	14	14	15
3,000–3,599	11	2	11	11	13	11	11	15
2,400–2 999	10	6	13	16	10	8	13	6
1,800–2,399	11	12	15	18	10	10	9	4
Less than 1,800	24	71	42	24	17	7	6	4
Median	*$3,273*	*$1,267*	*$2,120*	*$2,700*	*$3,599*	*$4,199*	*$4,071*	*$4,560*
	Men							
Continuous workers								
Total number (in thousands)	327	8	12	5	12	23	12	255
Percentage distribution	100	2	4	2	4	7	4	77
Total percent	100	100	100	100	100	100	100	100
$7,800	50	4	28	17	51	26	18	57
6,600–7,799	16	10	5	2	9	14	45	17
4,800–6,599	20	13	14	45	23	30	24	18
4,200–4,799	4	7	8	11	5	6	4	3
3,600–4,199	4	9	13	4	2	8	2	3
3,000–3,599	2	7	5	2	3	6	2	2
2,400–2,999	1	7	8	6	2	5	2	1
1,800–2,399	1	9	4	6	4	4	4	----------
Less than 1,800	2	36	15	8	3	4	2	----------
Median	*$7,800*	*$2,829*	*$4,575*	*$5,320*	*$7,667*	*$5,820*	*$6,867*	*$7,800*
Intermittent workers								
Total number (in thousands)	384	19	35	31	34	45	74	147
Percentage distribution	100	2	4	2	4	7	4	77
Total percent	100	100	100	100	100	100	100	100
$7,800	26	1	5	8	21	22	25	43
6,600–7,799	12	1	3	5	7	12	16	17
4,800–6,599	22	4	13	18	21	23	29	24
4,200–4,799	9	5	11	11	10	9	9	7
3,600–4,199	8	7	19	13	10	10	8	4
3,000–3,599	6	7	5	9	9	11	6	3
2,400–2,999	4	6	11	10	6	5	3	1
1,800–2,399	3	11	7	9	7	3	3	1
Less than 1,800	9	59	26	19	8	6	1	----------
Median	*$5,700*	*$1,525*	*$3,632*	*$3,738*	*$4,800*	*$5,270*	*$6,041*	*$7,306*

[1] Excludes those with no covered earnings in 1951-69.

TABLE 11.—Highest covered earnings, by last year with covered earnings before entitlement, 1951–69, and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable and postponed at award [1]

Highest covered earnings	Last year with covered earnings						
	Total	1951–58	1959–62	1963–65	1966–67	1968	1969
	Women						
Total number (in thousands)	474	32	26	30	26	23	336
Percentage distribution	100	7	6	6	6	5	71
Total percent	100	100	100	100	100	100	100
$7,800	8					1	12
6,600–7,799	6				4	5	8
4,800–6,599	18		5	11	18	18	21
4,200–4,799	8	2	7	7	9	10	9
3,600–4,199	10	6	10	10	8	7	11
3,000–3,599	11	9	8	11	7	12	12
2,400–2,999	9	14	12	13	15	16	8
1,800–2,399	10	18	18	17	13	9	7
Less than 1,800	19	51	40	32	27	22	13
Median	*$3,060*	*$1,800*	*$2,193*	*$2,446*	*$2,800*	*$3,150*	*$4,145*
	Men						
Total number (in thousands)	711	15	12	15	20	24	625
Percentage distribution	100	2	2	2	3	3	88
Total percent	100	100	100	100	100	100	100
$7,800	38					8	42
6,600–7,799	14				22	30	14
4,800–6,599	21		21	35	27	22	21
4,200–4,799	7	12	16	10	10	6	6
3,600–4,199	6	24	15	15	10	8	5
3,000–3,599	4	6	8	3	4	7	4
2,400–2,999	3	14	4	11	7	3	2
1,800–2,399	2	8	8	6	6	6	2
Less than 1,800	6	38	28	21	15	10	4
Median	*$6,771*	*$3,571*	*$3,689*	*$3,960*	*$4,689*	*$5,600*	*$7,114*

[1] Excludes those with no covered earnings in 1951–69

than for black women (as is true for white men and white women), the relative patterns are not the same.

When length of covered employment since 1950 is examined, distributions for black women and white women (and for black men and white men) are the same (table 12). When earnings are examined, however, a very different picture emerges. Median highest earnings for black and white women and for black men are, respectively, 31 percent, 54 percent, and 63 percent of white men's. Earnings of black men are closer to those

TABLE 12.—Number of years with covered earnings, 1951–69, by sex and race: Percentage distribution and median highest covered earnings for workers newly entitled in 1970 to retired-worker benefits payable at award

Years with covered earnings	Percentage distribution				Median earnings						
					Amount				As percent of amount for white men		
	Women		Men		Women		Men		Women		Black men
	Black	White	Black	White	Black	White	Black	White	Black	White	
Total											
Number (in thousands)	40	332	44	395							
Median earnings					$1,912	$3,350	$3,850	$6,191	31	54	63
Total percent	100	100	100	100							
19	23	24	45	52	3,027	4,600	5,088	7,600	40	61	67
17–18	12	11	12	14	2,500	4,157	4,120	5,979	42	70	69
15–16	9	10	9	11	2,014	4,100	3,528	5,008	40	82	70
13–14	9	11	9	6	2,040	3,667	2,640	4,818	42	76	55
10–12	13	14	9	6	1,920	2,829	2,625	3,771	51	75	70
5–9	23	20	9	8	1,364	2,240	2,452	3,630	38	62	68
1–4	9	9	6	5	1,034	1,343	1,385	1,667	62	81	83

TABLE 13.—Work experience in 1971, by sex and race: Percentage distribution and median annual earnings for the civilian population aged 14 and over with earnings in 1971

Work experience	Percentage distribution				Median earnings						
					Amount				As percent of amount for white men		
	Women		Men		Women		Men		Women		Black men
	Black	White	Black	White	Black	White	Black	White	Black	White	
Total											
Number (in thousands)	4,351	33,713	5,068	51,205							
Median earnings					$2,370	$3,064	$4,829	$7,685	31	40	63
Total percent	100	100	100	100							
Weeks worked on full-time job, total	70	68	84	86	3,637	4,446	5,575	8,589	42	52	65
50-52	42	42	57	66	5,014	5,651	6,669	9,659	52	59	69
40-49	6	6	8	7	3,521	4,092	4,815	7,257	49	56	66
27-39	7	6	7	5	2,550	2,916	3,731	5,197	49	56	72
14-26	8	7	5	5	1,480	1,766	2,227	2,688	55	66	83
13 or less	8	7	6	4	451	499	571	744	61	67	77
Weeks worked on part-time job, total	30	32	16	14	641	842	625	918	70	92	68
50-52	10	10	5	5	1,241	1,844	1,541	1,708	73	108	90
40-49	2	3	1	1	1,245	1,670	(1)	1,672	75	100	
27-39	4	4	1	2	916	1,211	(1)	1,409	65	86	
14-26	5	6	3	3	530	669	867	832	64	80	104
13 or less	9	9	6	4	278	308	297	323	86	95	92

[1] Not computed where base less than 75,000

Source. Bureau of the Census, *Current Population Reports* (P-60, No 85), "Money Income of Families and Persons in the United States, 1971," pp 123-24

of white women than to those of white men and about twice those of black women. These differences in earnings would have been even greater had the data included postponed as well as payable awards, since white men and women (with their higher earnings) postpone their awards more often than black men and women postpone theirs.[12]

These length of employment relationships for the 1970 cohort are true for the general population as well (table 13). Employment patterns for black women and white women are similar, and for black men and white men. Forty-two percent of black women and white women work full-time full-year, for example, as do 84 percent and 86 percent, respectively, of black men and white men. Median earnings, however, are in very different proportions. Among full-year full-time workers median annual earnings for black women are 52 percent, for white women 59 percent, and for black men 69 percent of the median earnings of white men.

Earnings differences and length of employment.—If length of employment explained the whole difference in earnings, then men and women with the same experience would have the same earnings. Although some of the difference does vanish within experience classes, it is clear from the results presented that this is not universally the case.

The amount of the earnings difference explained by sex cannot be pinpointed precisely in this article. Some of the information desired is unobtainable because of data constraints. First, only covered earnings up to the taxable maximum are available. Second, the number of years since 1936 is often not equivalent to an entire career. Third, differences in length of time worked during the year are not taken into account. Finally, the data do not permit the calculation of the simple or complicated effects of education, occupation, and other characteristics not recorded in the CWHS. There is no way, for example, of knowing from the data if the nontabulated characteristics are themselves correlated with length of career. Is a woman with a high educational level more likely to have a lifetime commitment to the work force than a woman with less education? (The studies mentioned in footnote 1, however, indicate a positive relationship in this case.)

[12] The sample of black workers is too small to provide complete distribution of earnings; thus only medians are shown.

TABLE 14 —Highest covered earnings, 1951–69, for men, women, and women with men's worklives: [1] Percentage distribution and median highest covered earnings for workers newly entitled in 1970 to retired-worker benefits payable at award [2]

Sex	Total number (in thousands)	Total percent	Highest covered earnings										Median earnings
			$7,800	$6,600–7,799	$4,800–6,599	$4,200–4,799	$3,600–4,199	$3,000–3,599	$2,400–2,999	$1,800–2,399	$1,200–1,799	Less than $1,200	
Men	449	100	28	14	21	8	8	6	4	4	4	4	$6,172
Women with men's worklives and women's earnings [3]	377	100	7	8	22	10	11	13	9	8	7	7	4,036
Women	377	100	5	5	15	8	10	12	11	11	10	14	3,250

[1] See text footnote 13 below

[2] Excludes those with no covered earnings in 1951–69.

Subject to these limitations, the part played by work experience in explaining earnings differences between men and women can be summarized by the following adjustment. If it is assumed that women who work long years earn the same as men who do so, then it is only the difference in proportions of men and women who have long worklives that accounts for the difference in earnings. If these proportions were equalized, then earnings distributions should be similar. This adjustment would have had some effect, as shown in table 14, but it is clear that earnings differences would not have completely disappeared if no other change took place.[13] Median earnings for women ($4,036) would be 35 percent less than those for men instead of 47 percent less, as is the actual case. Only a few more women would earn more than $6,600, more women would earn in the middle ranges than do now, and fewer would earn in the very low ranges (under $3,000).

BENEFIT LEVELS

As expected, benefit levels of retired workers are much higher for men than for women because of disparate earnings and work histories. As shown in table 15, men were more than three times as likely as women to be entitled to a relatively high primary insurance amount (PIA) of $190 or more and women were three times as likely as men to be entitled to the minimum PIA of $70.40 (at 1971 levels).[14]

The figures in table 15 include workers with payable as well as postponed awards. For this latter group, who have had a strong commitment to the labor force throughout their careers, the distributions for men and for women are much

[13] This adjustment is a simple standardization procedure. For the method of calculation, see Henry S. Shryock, Jacob S. Siegel, et al., *The Methods and Materials of Demography*, U.S. Department of Commerce, Bureau of the Census, 1971, pages 289–91.

[14] The primary insurance amount is derived from a worker's average monthly taxable earnings and is the basis for computing all benefits based on his or her wage record.

TABLE 15.—Primary insurance amount, by benefit-payment status at award and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable and postponed at award

Primary insurance amount (at 1971 levels)	Benefit-payment status at award									
	Women					Men				
	Total	With payable benefits			With postponed benefits	Total	With payable benefits			With postponed benefits
		Total	Reduced	Full			Total	Reduced	Full	
Total number (in thousands)	492	395	342	52	97	718	454	390	64	264
Total percent	100	100	100	100	100	100	100	100	100	100
$70 40	22	27	27	30	3	7	9	8	18	2
70 50–109 90	21	24	25	16	7	11	14	14	11	5
110 00–149.90	25	25	26	22	25	17	20	21	15	10
150 00–189 90	19	16	15	20	33	24	25	25	19	24
190 00 or more	13	8	7	13	31	42	33	32	38	59

TABLE 16.—Primary insurance amount, by benefit-payment status at award and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable and postponed at award

Benefit-payment status	Primary insurance amount (at 1971 levels)											
	Women						Men					
	Total	$70 40	$70 50–109 90	$110 00–149 90	$150 00–189 90	$190 00 or more	Total	$70 40	$70 50–109 90	$110 00–149.90	$150 00–189 90	$190 00 or more
Total number (in thousands)	492	109	101	124	95	63	718	47	75	118	174	303
Total percent	100	100	100	100	100	100	100	100	100	100	100	100
Payable	80	97	93	80	66	51	63	89	84	77	64	49
Reduced	69	83	85	71	55	40	54	65	74	69	57	41
Full	11	14	8	9	11	11	9	24	9	8	7	8
Postponed	20	3	7	20	34	49	37	11	17	23	36	51

closer. That is, men whose awards are postponed are less than twice as likely as women to have high PIA's, and few of either sex had very low PIA's.

Beneficiaries with payable benefits may receive either full or reduced amounts. In either case, workers with many different labor-force histories may be included,[15] so that the distributions with and without reductions give little information about employment patterns.

On the other hand, whether or not a benefit is actuarially reduced is very important if one wants to know the size of the benefit actually received by the retired worker. Sixty-five percent of the minimum benefits received by the men and 74 percent of the benefits in the second lowest PIA class (the class above the statutory minimum benefit) were actuarially reduced (table 16).[16] This means that these men, with short work histories in covered employment and/or low earnings—which would give low benefits in any case—end up with even smaller amounts. Many had additional sources of retirement income, however. They may, for example, have other public pensions from noncovered employment.[17] Similarly, 83 percent of the minimum benefits for women and 85 percent of the benefits in the next lowest class were reduced. For women who have additional resources to live on, such as other pensions or husband's income, a reduced minimum benefit may not mean a very low living standard. For women—or men—who must rely on their own retirement benefit, however, real hardship may result when an already low benefit is even further reduced.

Since the focus of this article is on benefits earned rather than on adequacy of benefits received, the fact that some benefits are reduced because of early retirement is ignored here. The discussion concentrates on PIA levels, which reflect length of employment and level of earnings.

PIA Levels and Covered Employment Since 1936

The influences of both low earnings and short work histories are reflected in chart 2. The top bar shows overall distributions of PIA's for men and women with payable awards. The influence of years of service is shown by the diagonal sweep in both halves of the chart. Note that the minimum benefit is extremely rare for long tenures, as is the maximum benefit for short tenures. The effect of different earnings patterns on the PIA levels of men and women can be seen by comparing distributions for a given tenure—30–32 years, for example. Even with the influence of number of years thus removed, the difference in PIA levels is still very sharp.

Another way to see the relative effects of employment histories and earnings patterns on PIA levels is to adjust the overall distribution for women by assuming women worked the same number of years as men but retained their present PIA patterns for each career length,[18] as is shown in the following tabulation.

[15] Virginia Reno and Carol Zuckert, "Benefit Levels of Newly Retired Workers," *Social Security Bulletin*, July 1971.

[16] In the tables concerning PIA levels, starting with table 16, only payable awards are included since ultimate benefit levels have not been determined for postponed awards.

[17] Virginia Reno and Carol Zuckert, *op. cit.*

[18] Henry Shryock, Jacob Siegel, et al., *op. cit.*

Sex	Percentage distribution by PIA (at 1971 levels)					
	Total	$70 40	$70 50–109 90	$110 00–149 90	$150 00–189 90	$190.00 or more
Women	100	24	24	27	17	8
Women with men's work-lives and women's PIA pattern	100	11	17	30	26	16
Men	100	9	14	20	25	33

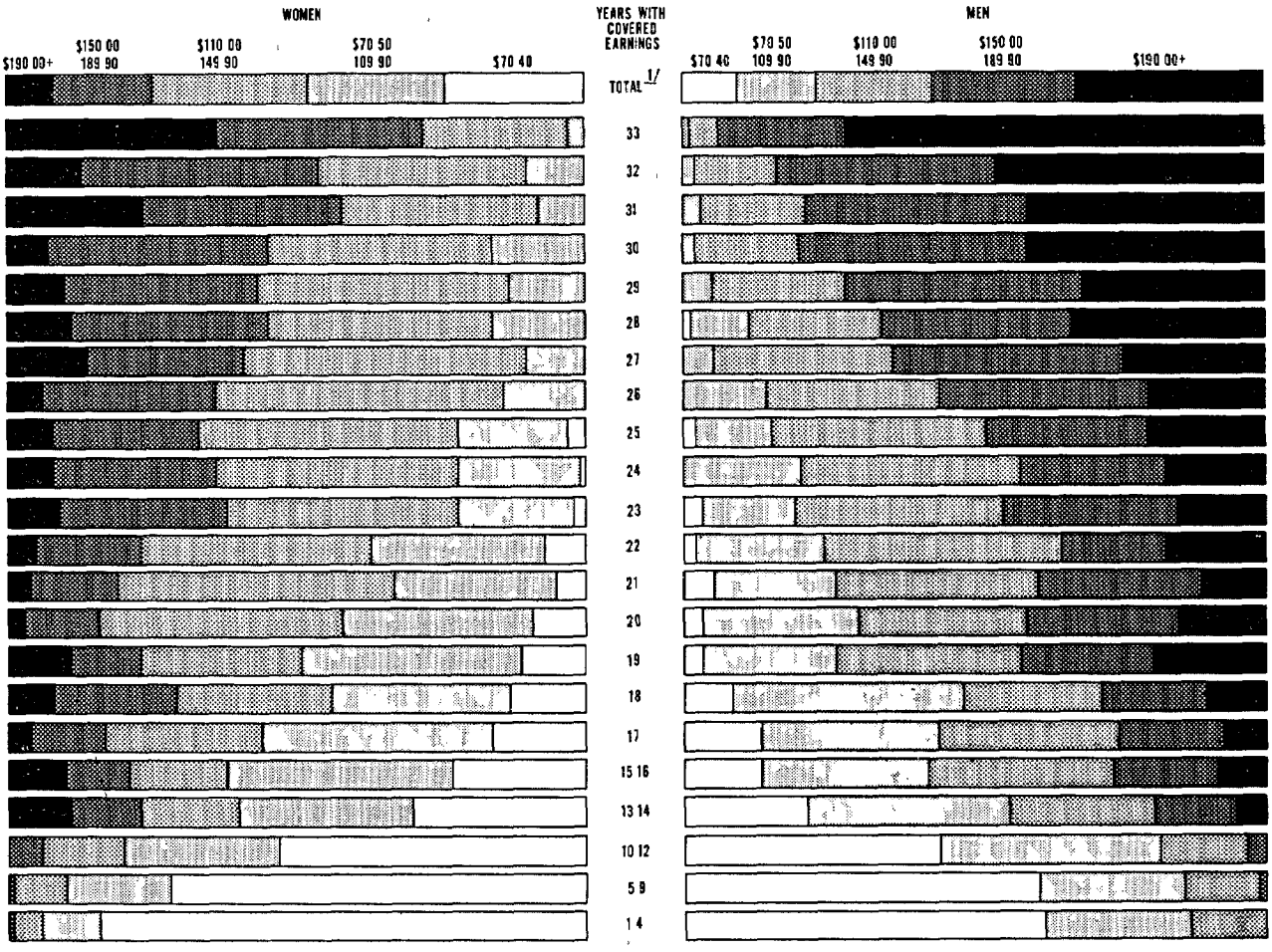
Although the adjustment for years worked brings the distributions for men and women closer together, large differences still remain. The effect of the adjustment is particularly strong on the proportion of women receiving minimum benefits: the percentage declines from 24 to 11, a rate only two percentage points higher than in the men's distribution. Conversely, the proportion of women with PIA's at $190 or more doubles, but it is still only about half that of the men. Since the effect of years of tenure has been removed, the remaining differences in PIA's are mainly due to earnings differences.

PIA Levels and Covered Employment Since 1950

As mentioned earlier, the extensions of social security coverage that occurred in the early 1950's gave workers a new start in 1951 with respect to the benefit computation period. For about 90 percent of the 1970 entitlement cohort, benefits were based solely on earnings after 1950.

The new start was fortuitious for this age

CHART 2—PIA and years with covered earnings, 1937–69: Percentage distribution of workers becoming entitled in 1970 to benefits payable at award, by sex [1]



[1] Excludes workers with no covered earnings in 1951 or later.

group of women because the computation period coincides with their early forties—a period when their children no longer demanded full-time care at home, and they could easily enter or reenter the labor force. If they had spent years out of the labor force, it did not count against them. Because of the new start there is a somewhat more dramatic association between years of work and benefit levels shown on chart 3 than on chart 2. The differences between men and women along the same line in chart 3 also seem sharper.

Future Effect of Tenure on PIA Levels

The PIA formula provides that the more time a worker spends in covered employment and the higher the earnings, the greater will be the PIA. Previous discussion has shown that women indeed have lower earnings and less time in covered employment and that they do receive lower benefits. Certain provisions under which the benefit has been computed have up to now protected women from the full effects of their short work histories and low wages. These protections will diminish in time.

The most important of these advantages is the wage computation period, or the new start. Since only earnings after their midforties needed to be used to compute benefits, a special advantage accrued to women in this cohort who began their major labor-force commitment at or after that age. The same advantage would, of course, also accrue to men in the same circumstance, but fewer men than women follow such a lifetime pattern. For this age group, the typical years of zero earnings for married women occurred before the new start, so these years were not averaged into lifetime earnings. In the future, years of zero earnings will have more of an effect on PIA levels because future retirees will have reached their childrearing period after 1950.

At any given PIA level, women average more years out of covered employment than men. Of persons entitled to high PIA's ($190 or more), 75 percent of the men but only 35 percent of the women missed no more than 3 years of covered employment since 1936 (table 17). At the other extreme, 37 percent of the women but only 6 percent of the men entitled to these high PIA's were out of covered employment for at least 14 of the 33 years since 1936. To have earned these high PIA's, their years out of covered employment must have occurred before 1951.

As 1951 recedes further into the past and comes closer to the beginning of most adult worklives, future cohorts will receive less and

CHART 3.—PIA and years with covered earnings, 1951–69: Percentage distribution of workers becoming entitled in 1970 to benefits payable at award, by sex

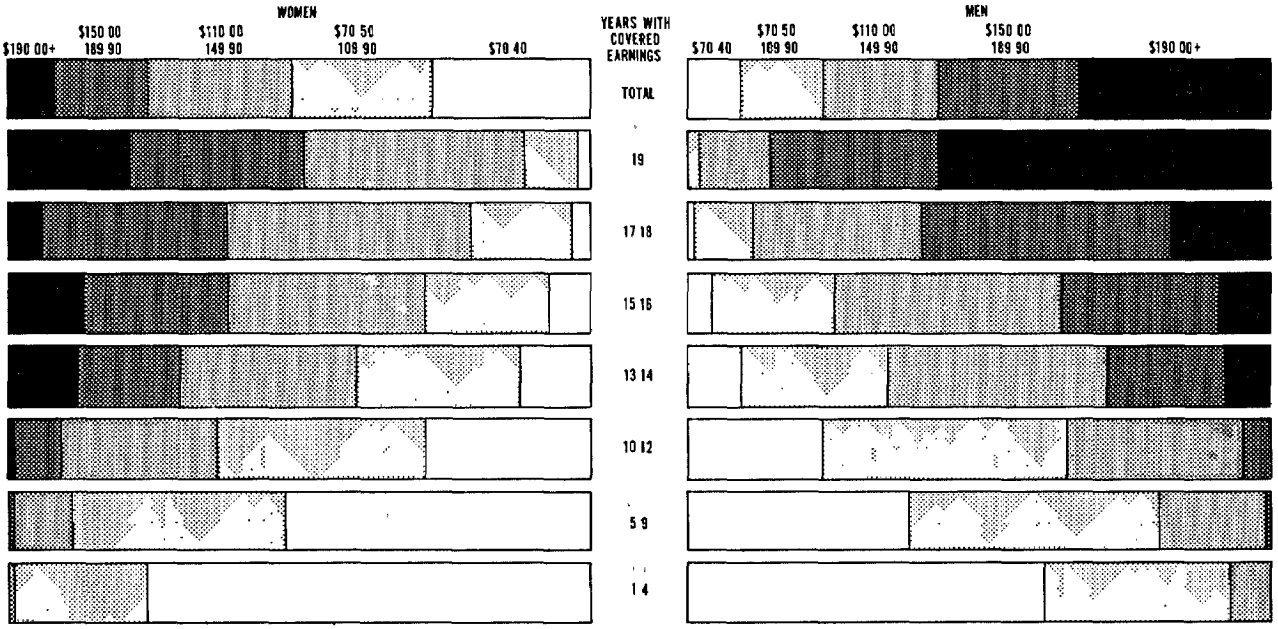


TABLE 17.—Primary insurance amount, by number of years without covered earnings, 1937–69, and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable at award

Years without covered earnings [1]	Primary insurance amount (at 1971 levels)					
	Total	$70 40	$70.50–109.90	$110 00–149 90	$150 00–189 90	$190 00 or more
	Women					
Total number (in thousands)	377	92	91	100	62	32
Total percent	100	100	100	100	100	100
0 (33)	6	--------	1	6	14	26
1–3 (30–32)	6	--------	3	7	12	9
4–8 (25–29)	14	(2)	8	24	25	17
9–13 (20–24)	17	3	18	26	19	11
14–18 (15–19)	22	16	35	20	18	24
19–23 (10–14)	21	38	25	13	11	12
Over 23 (under 10)	14	43	10	4	1	1
	Men					
Total number (in thousands)	449	38	61	91	111	148
Total percent	100	100	100	100	100	100
0 (33)	24	--------	1	6	22	53
1–3 (30–32)	17	--------	3	15	27	22
4–8 (25–29)	17	1	12	24	24	14
9–13 (20–24)	14	5	19	24	13	5
14–18 (15–19)	14	17	31	22	12	5
19–23 (10–14)	8	29	20	8	3	1
Over 23 (under 10)	7	48	12	4	(2)	(2)

[1] Excludes those with no covered earnings in 1951 or later, numbers in parentheses are years with covered earnings corresponding to the specified years without covered earnings
[2] Less than 0 5 percent.

less advantage from the new start. Eventually, everyone's benefits will be based on earnings after age 21.

The new start has given a special advantage to women only because their work patterns differed from men's; there was no specific reference to women in the statute. A second provision that specifically gave advantages to women, however, will be eliminated for future retirees because of a recent amendment.

Benefits for the women in the 1970 retirement cohort are based on average earnings over the years from 1951 through the year of attaining age 62, minus the 5 lowest years. For men, earnings are averaged up to age 65, eliminating 3 of the 5 "dropout" years. Amendments passed in 1972 gradually reduce the computation age for men until, in 1975, it becomes age 62.

Even when only the years since 1950 are counted, women have more years out of covered employment than men do at each PIA level (table 18). For PIA's of $190 and more, for example, 18 percent of the women but only 2 percent of the men had missed 5 or more years of covered employment. At the other extreme, 95 percent of the men but only 67 percent of the women missed less than 3 years.

A third provision favoring women is that the benefit formula is weighted in favor of low earners. Unlike the preceding advantage, this one favors women only because they have lower average earnings, not because the law specifically gives women preferential treatment.

It is important to remember that benefits are computed on average lifetime earnings, not on hourly wages or highest earnings. The wage and salary gap for men and women with equal qualifications (including experience) will probably close faster than differences in average earnings over a working life, which depend to a large extent on the number of adult years worked. As long as women in general have more years of zero earnings than men, even the full elimination of wage and job discrimination will still leave women's average earnings and PIA levels lower than men's.

TABLE 18.—Primary insurance amount, by number of years without covered earnings, 1951–69, and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable at award

Years without covered earnings [1]	Primary insurance amount (at 1971 levels)					
	Total	$70.40	$70 50–109.90	$110 00–149 90	$150 00–189 90	$190 00 or more
	Women					
Total number (in thousands)	395	106	94	100	62	32
Total percent	100	100	100	100	100	100
0 (19)	23	2	9	35	43	60
1–2 (17–18)	10	1	7	17	21	7
3–4 (15–16)	10	2	8	13	15	15
5–6 (13–14)	11	5	12	13	12	16
7–9 (10–12)	14	14	21	14	7	1
10–14 (5–9)	20	38	30	8	2	1
15–18 (1–4)	9	24	9	1	(2)	--------
19 (no years)	4	14	4	--------	--------	--------
	Men					
Total number (in thousands)	454	42	63	91	111	148
Total percent	100	100	100	100	100	100
0 (19)	50	(2)	6	30	58	88
1–2 (17–18)	13	1	10	19	23	7
3–4 (15–16)	11	5	16	21	12	3
5–6 (13–14)	7	6	12	13	5	2
7–9 (10–12)	6	15	18	9	1	--------
10–14 (5–9)	8	31	24	7	(2)	(2)
15–18 (1–4)	5	32	11	2	--------	--------
19 (no years)	1	9	3	--------	--------	--------

[1] Numbers in parentheses are years with covered earnings corresponding to the specified years without covered earnings
[2] Less than 0 5 percent

TABLE 19.—Primary insurance amount, by last year with covered earnings and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable at award

Primary insurance amount (at 1971 levels)	Total	Last year with covered earnings						
		1969	1968	1966–67	1963–65	1959–62	1951–58	Before 1951
	Women							
Total number (in thousands)	395	243	22	25	30	25	30	18
Total percent	100	100	100	100	100	100	100	100
$70 40	27	17	26	30	37	39	56	81
70 50–109 90	24	20	27	22	31	39	40	19
110 00–149 90	25	31	23	24	22	19	3	----
150 00–189 90	16	20	20	22	10	2	----	----
190 00 or more	8	13	4	1	----	----	----	----
	Men							
Total number (in thousands)	454	375	21	18	13	9	13	5
Total percent	100	100	100	100	100	100	100	100
$70 40	9	7	8	16	20	25	34	69
70 50–109 90	14	10	23	21	29	40	54	31
110 00–149 90	20	19	20	29	32	33	10	----
150 00–189 90	24	25	34	33	19	2	2	----
190 00 or more	32	38	14	2	----	----	----	----

PIA Level and Last Year in Covered Employment

For both men and women, the more recent the last year with covered earnings, the more likely a high PIA (table 19). Conversely, persons who have not worked since 1950 are concentrated in the low PIA classes (table 20). This fact reflects the rise in both maximum covered earnings and wage levels, as well as the general tendency for firm labor-force attachment throughout a career to accompany earnings credits right up to entitlement. On the other hand, years of zero earnings just before retirement would lower the PIA level no matter how firm the attachment had been previously.

The figures also reflect other influences already discussed. If a given benefit level is specified, for example, men are somewhat more likely than women to have recent earnings (table 20), because of the influence of the extra dropout years for women. Further, for a given retirement year, men are more likely than women to have a higher PIA (table 19), reflecting the influence of men's higher earnings.

PIA's of Women with Dual Entitlement

A retired worker who is entitled to a dependent's benefit that exceeds his own retired-worker benefit receives the larger amount and is classified as being dually entitled. The overwhelming majority of these persons are women. (Although husbands and widowers who can prove dependency on their wives are entitled to the same dependent's benefits as wives and widows, in 1971 less than 0.1 percent of those drawing dual bene-

TABLE 20.—Last year with covered earnings, by primary insurance amount and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable at award

Last year with covered earnings	Primary insurance amount (at 1971 levels)					
	Total	$70 40	$70 50–109 90	$110 00–149 90	$150 00–189.90	$190 00 or more
	Women					
Total number (in thousands)	395	106	94	100	62	32
Total percent	100	100	100	100	100	100
1969	62	38	50	76	78	97
1968	6	5	6	5	7	3
1966–67	6	7	6	6	9	1
1963–65	8	10	10	7	5	----
1959–62	6	9	11	5	1	----
1951–58	8	16	13	1	----	----
Before 1951	4	14	4	----	----	----
	Men					
Total number (in thousands)	454	42	63	91	111	148
Total percent	100	100	100	100	100	100
1969	83	59	61	80	86	98
1968	5	4	8	5	6	2
1966–67	4	7	6	6	5	(1)
1963–65	3	6	6	5	2	----
1959–62	2	6	6	3	(1)	----
1951–58	3	10	11	1	(1)	----
Before 1951	1	9	3	----	----	----

[1] Less than 0.5 percent.

TABLE 21.—Primary insurance amount, by highest covered earnings and number of years with covered earnings, 1951–69: Percentage distribution of dually entitled women newly entitled in 1970 to retired-worker benefits payable at award

Highest covered earnings and years with covered earnings	Primary insurance amount (at 1971 levels)		
	Total [1]	$70.40	$70 50–109 90
Total number (in thousands)	42	25	14
Percentage distribution	100	61	32
Total percent, by amount	100	100	100
$7,800			
6,600–7,799	(2)	(2)	1
4,800–6,599	2	(2)	1
4,200–4,799	3	(2)	4
3,600–4,199	5		7
3,000–3,599	7	2	14
2,400–2,999	10	5	17
1,800–2,399	18	13	31
1,000–1,799	42	60	19
None	14	20	6
Total percent, by years	100	100	100
19	5	2	4
17–18	2	(2)	3
15–16	4	2	6
13–14	7	4	12
10–12	18	16	18
5–9	33	33	40
1–4	17	23	11
None	14	20	6

[1] Includes 3,000 (about 6 percent of all dually entitled women) with PIA of $110 or more.
[2] Less than 0 5 percent.

fits were men. Thus, they are ignored in the following discussion.) Dependent's benefits to wives amount to as much as 50 percent of the husband's PIA, and for widows (in 1970) they were as much as 82.5 percent of the deceased husband's PIA.[19]

There is interest in the group of dually entitled women for two main reasons—a reason of equity and a reason of income adequacy. First, these women have the "distinction" of receiving the same total benefit in retirement that they would have received had they not worked at all outside the home. Second, low social security income from the small retirement benefits accruing to many women is enlarged by these supplementary benefits based on the husband's record.

In 1970, dual entitlement required that a wife's PIA be less than one-half that of her husband's, and a widow's PIA less than 82.5 percent of her deceased husband's; these women are therefore concentrated at the low PIA levels (table 21). Sixty-one percent were entitled to the minimum benefit, and less than 7 percent were entitled to $110 a month or more. Women with dual entitlement account for 23 percent of all women entitled to minimum retirement benefits but are only 9 percent of all women who have earned retirement benefits. The following tabulation shows the percentage distributions of dually entitled and non-dually entitled women by PIA levels.

Type of entitlement	Total	PIA (at 1971 levels)				
		$70.40	$70 50–109.90	$110.00–149.90	$150 00–189 90	$190.00 or more
Total number (in thousands)	492	114	108	126	94	50
Total percent	100	100	100	100	100	100
Dually entitled	9	23	12	2	(1)	0
Not dually entitled	91	77	88	98	99	100

[1] Less than 0 5 percent

Half the dually entitled women worked less than 10 years in covered employment from 1951 to 1969. An additional 14 percent had not worked since 1950. As for earnings, 56 percent earned less than $1,800 in every year after 1950 in which they had covered earnings.

Thus, many dually entitled women may have had only transitory commitment to the work force or they may have earned very little while working. In 1972, amendments were passed that gave the widow at age 65 up to a maximum of 100 percent of her deceased husband's PIA. In the near future this change will probably increase the number of dually entitled women at the middle PIA levels. Some years hence, however, the trend toward increasing labor-force participation of married women for longer periods of their lives (and thus higher average lifetime earnings in relation to men's) may lower the overall percentage of dual entitlement.

PIA Distributions and Race

Distributions of PIA levels for the black population are quite different from distributions for the white. As is true for earnings, the PIA distribution for black men is closer to that for white women than to that for white men, though years of covered employment are similar for

[19] Benefits for wives are reduced to 37 5 percent of the husband's PIA if claimed at age 62. Widow's benefits are reduced to 71.5 percent if claimed at age 60 The 1972 amendments raised widow's benefits to 100 percent of the husband's PIA if neither he nor she claimed benfits before age 65.

TABLE 22.—Primary insurance amount, by race and sex: Percentage distribution of workers newly entitled in 1970 to retired-worker benefits payable at award

Primary insurance amount (at 1971 levels)	Women				Men			
	Total	White	Black	Black as percent of total	Total	White	Black	Black as percent of total
Total number (in thousands)	395	349	41	10	454	400	44	10
Total percent	100	100	100	----	100	100	100	----
$70 40	27	25	41	16	9	8	18	19
70 50–109 90	24	23	32	14	14	13	21	15
110 00–149 90	25	26	22	9	20	19	29	14
150 00–189 90	16	17	4	3	25	25	18	7
190 00 or more	8	9	1	2	33	35	13	4

black and white men. The PIA levels for black women are very low, with only 1 percent eligible for benefits of $190 or more. Similarly, a large percentage of both men and women with low benefits are black (table 22). In the future, as earnings levels for black and white workers approach equality, the PIA discrepancy should narrow and eventually disappear.

CONCLUSIONS

More married women are working for longer periods of their lives than was the case when the social security program began—or than was the case a few years ago. By now it is commonplace for many married women to provide a substantial part of the family earnings; the wife who works for pin money or the girl who works for something to do until she is married is no longer the sterotype of the working woman. A significant part of family income in old age is thus provided by retirement benefits to women, and the effects on these benefits of women's employment patterns is a subject of increasing concern.

This article has shown that women in this age group did indeed have shorter and more frequently interrupted worklives than did men, but, even though this was true, those at retirement age in 1970 have had substantial work experience. Though most of their covered employment occurred after their fortieth birthday, an impressive number of women worked in their thirties and before.

When men and women who have the same lengths of covered employment are compared, the differences in earnings by no means disappear. The earnings difference for men and women with the same tenure is the product of both objective factors and of discrimination. To the extent that the gap in pay is due to objective factors—such as different education and different labor-force patterns—it can be measured and eventually narrowed. Future study will shed more light on the speed with which work patterns are changing. To the extent that the earnings gap is a product of persistent discrimination in hiring and promotion of women, both white and black, it falls less easily into the purview of scientific study and will be more difficult to remedy.

The Social Security Administration is mainly concerned with benefit levels and the role they play in providing an adequate income in retirement. For men, PIA levels are higher than for women because men have both longer work careers and higher average earnings. The differences for the 1970 retirement cohort would have been even greater were it not for three factors:

—The weighted benefit formula
—the use of age 62 for women and age 65 for men in computing average monthly earnings for benefit purposes (as mentioned above, the difference in the age-computation point will be phased out by 1975)
—the influence of the "new start."

The lengthening time since the 1951 new start is causing earnings or lack of earnings at younger ages to enter into the benefit calculations for both men and women. The social security program lacks any provision to give credit for—or even to disregard—childrearing years in computing women's benefits. To be sure, labor-force participation is increasing for women, but not necessarily fast enough to counteract the effect of the increasing number of years since 1950. Under the present law, the effect of more and more years after 1950 is sure to be felt heavily by women in the not-too-distant future.

Technical Note*

The estimates presented here are based on a sample of persons from the Social Security Administration's Continuous Work History Sample (CWHS). The sample for this article consists of approximately 12,100 persons in the CWHS who became entitled to retired-worker benefits, both payable and postponed, during 1970, regardless of when they were actually awarded these benefits. Some of the workers opted to postpone receipt of their cash benefits. Others who qualified for and elected to receive retroactive benefits may have filed their initial claim sometime during the period between January 1970 and March 1972.

Information concerning individuals in the CWHS is derived from the reporting forms and records used in administering the OASDHI program. Data on age, sex, and race are obtained from the employee's application for a social security number. Data on amount of earnings and employment are derived from the report forms submitted by employers and self-employed persons.

Sample Design

The sample for the CWHS consists of all individuals whose social security numbers have specified combinations of digits in the serial number component (explained below). This procedure was designed to provide a sample of approximately 1 percent of the individuals in any designated target population.

The social security number contains geographical and chronological indicators and a serial number: the first three digits show the area in which the number was issued, the next two digits are the group number, and the final four digits represent the serial number. Each area-group combination defines a stratum. Within each of these strata, the selection is made on the basis of the specified combinations of digits in the serial number component. Because of the particular digital combinations used, the procedure for sampling within strata can be described as a systematic sample of clusters, with subsampling to obtain the overall sampling fraction of 1 percent.[20]

TABLE I.—Approximations of standard errors of estimated number of persons

Size of estimate	Standard error
10,000	1,000
25,000	1,600
50,000	2,300
75,000	2,900
100,000	3,300
250,000	5,300
500,000	7,500
750,000	9,200
1,000,000	10,600
2,000,000	14,900

TABLE II.—Approximations of standard errors of estimated percentages

Size of base	Estimated percentages						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
25,000	0.9	1.4	2.0	2.6	3.0	3.2	3.3
50,000	.6	1.0	1.4	1.9	2.1	2.3	2.3
75,000	.5	.8	1.1	1.5	1.7	1.9	1.9
100,000	.5	.7	1.0	1.3	1.5	1.6	1.6
250,000	.3	.4	.6	.8	1.0	1.0	1.0
500,000	.2	.3	.4	.6	.7	.7	.7
750,000	.2	.3	.4	.5	.6	.6	.6
1,000,000	.2	.2	.3	.4	.5	.5	.5
2,000,000	.1	.2	.2	.3	.3	.4	.4

Sampling Variability

The standard error is a measure of sampling variability. The chances are about 68 out of 100 that the difference between a sample estimate and the comparable value obtained from a complete tabulation is less than the standard error. The chances are about 95 out of 100 that the difference is less than twice the standard error.

The effects of clustering and stratification in the design, as well as sample size, must be taken into account in determining the standard error. Although these effects are not the same for all variables, the following tables provide general approximations of the standard error of the number of individuals (table I) or the percentage of individuals (table II) with a given characteristic. The standard error of an estimate of the percentage of individuals with a given characteristic who belong to some subpopulation depends on both the size of the percentage and the size of the subpopulation. Linear interpolation may be used for percentages and subpopulations not shown in the tables.

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[20] For a more detailed discussion of the sampling procedures used for the CWHS, see *Workers Under Social Security, 1960*, Office of Research and Statistics, 1968.