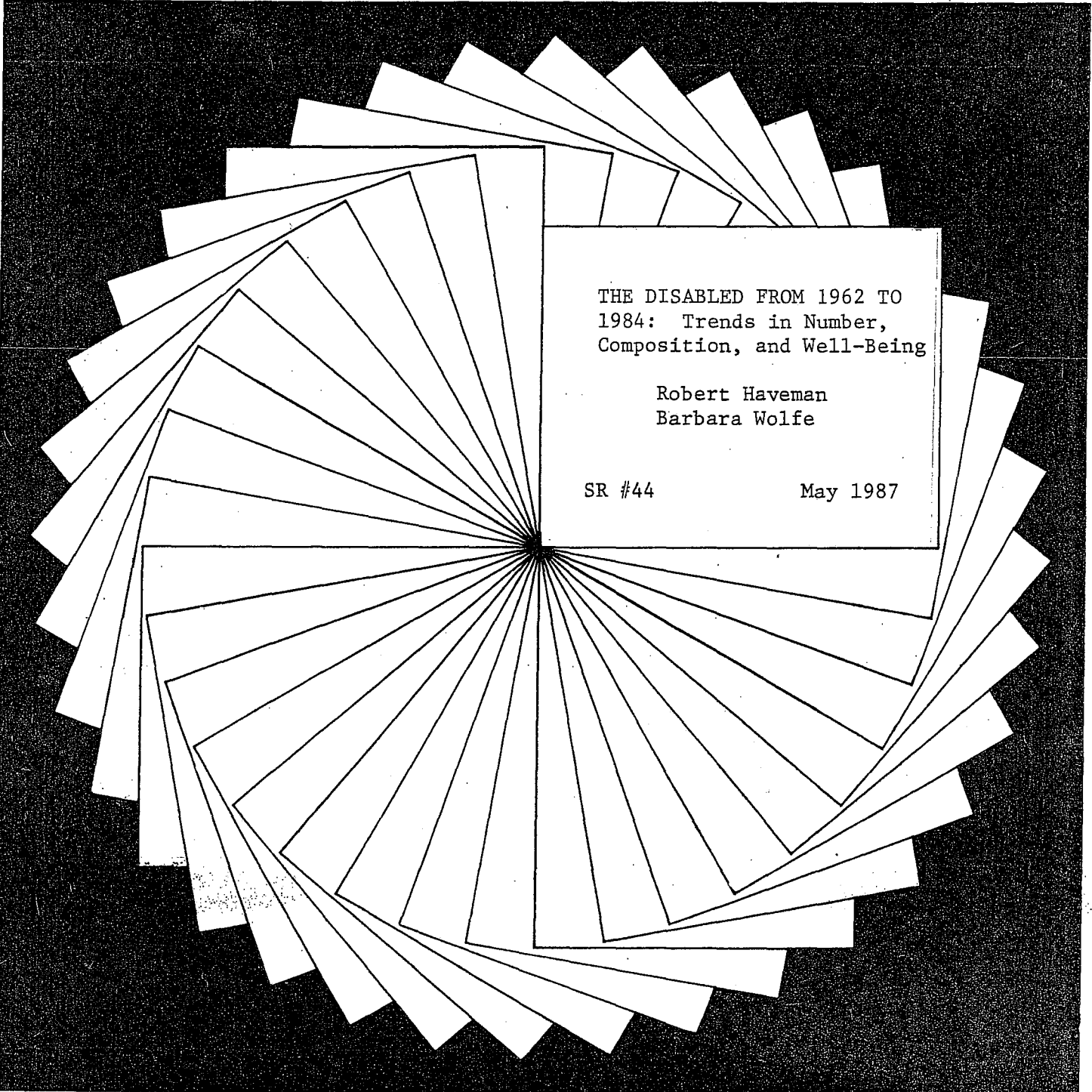




Institute for Research on Poverty

Special Report Series



THE DISABLED FROM 1962 TO
1984: Trends in Number,
Composition, and Well-Being

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SR #44

May 1987

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The research reported here was supported by funds granted to the Institute for Research on Poverty by the U.S. Department of Health and Human Services. Any opinions expressed here are those of the authors and not of the sponsoring institutions.

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Executive Summary

This paper provides a picture of the disabled population over the period 1962-1984 in an attempt to demystify some of the relationships between that population, changing patterns of health and mortality, policies relating to safety in the workplace and the environment, the generosity of disability benefits, and macroeconomic conditions.

Disability is defined using two criteria: the presence of self-reported work limitations and the receipt of a disability benefit. Those classified as disabled owing to work limitations report that they are unable to work at all or unable to work full time, full year, because of poor health. Those classified as recipients of disability benefits receive Social Security Disability Insurance, the disability component of Supplemental Security Income, the benefits for the disabled in the Railroad Retirement program, or Workers' Compensation. An overall measure classifies as disabled all those who fall into either category (or both).

The definitions are applied to the adult working-age population aged 18 through 64 over the period 1962 to 1984. The public use files of the Current Population Survey for the years 1962, 1968, 1973, 1976, 1980, 1982, and 1984 are used in the estimation.

The disabled population is further broken into subgroups by age, sex, race, and education in order to determine whether patterns affecting the disabled population as a whole are reflected among various subgroups. Statistical estimates are used to determine what characteristics have the strongest relationship to disability.

The wages, incomes, and family incomes of the subgroups of the disabled are compared to one another and to the nondisabled population to determine whether the economic circumstances of the disabled have improved or deteriorated over the 1962-1984 period.

The Size of the Disabled Population

The disabled population increased from 7 percent of the working-aged population in the early 1960s to 11 percent in the mid-1970s, and fell to about 9.5 percent in the period after 1980.

Large declines in the percentage of the population classified as disabled by the work criterion occurred in the decade of the seventies for all age groups. This reduction coincided with the passage of the rigorous enforcement of regulations on occupational health and safety and the environment.

The peak year for disability as measured by program participation was 1980. Policy retrenchment efforts thereafter resulted in a substantial reduction in the percentage of the population classified as disabled on this criterion but not in the number classified as disabled on the basis of self-reported work limitations. This suggests that the reduction in aggregate disability in the 1980s is an artifact of explicit retrenchment policies, and the actual incidence of disability may not have decreased.

Likelihood of Becoming Disabled

Over the period 1962-1984, nonwhites increased their probability of being disabled relative to whites; older workers increased the probability of becoming disabled relative to other age groups; and persons with

little education were more likely to be disabled over the entire time period than persons with much education. Being unmarried--especially widowers--and being a veteran was found to increase the likelihood of becoming disabled over the entire time.

The Effects of the Unemployment Rate

The relationship between the unemployment rate and disability reversed over the period. In the 1960s, the incidence of disability was positively related to the unemployment rate. In the 1980s the incidence of disability decreased in periods of high unemployment. This is perhaps the result of increases in Unemployment Compensation as well as a reduction in the stigma associated with the loss of a job.

Earnings of the Disabled

From 1962 to the mid-1970s the real earnings of disabled men increased. Thereafter they dropped through 1982. After the mid-1970s, the largest decrease in earnings were experienced by those with the least skills and labor market advantages--the very young and old, those with little education, and the nonwhite population. In fact nonwhite disabled men experienced the greatest loss in earnings, from \$3700 in 1962 to a high of \$8300 in 1973, down to \$2100 in 1984 (in constant dollars). The low earnings of the year 1982 reflected the 1981-82 recession. Nonwhite disabled men had very low earnings throughout the period and also experienced the greatest decline in earnings. Middle-aged, highly educated and white males had higher earnings than other groups. Among disabled women, the earnings pattern is relatively constant across time,

except for older women and those with little education. These experienced a steady decrease in earnings.

From 1982 to 1984 the earnings of the disabled increased overall, but several groups did not share in the recovery: the nonwhite population, those with the least education, and the youngest group of workers.

Relative Well-Being of the Disabled

Time trends observed for labor earnings are present in the data for individual incomes as well. The period from 1962 to the mid-1970s saw rapid real income growth for all groups of the disabled, especially older workers, those with low education levels, and nonwhites. After the mid-1970s, total individual income fell, with the largest decreases experienced by workers younger than 44, those with little education, and nonwhites. However, increases in total individual income from 1962 to the mid-1970s was larger than that for earnings, and the fall-off after the mid-1970s was far less severe, owing to the rapid growth in public income transfers over the 22-year period.

While the disabled as a group had somewhat more income (relative to the nondisabled) at the end of the period than at its start, this pattern does not hold for all subgroups. In particular, the younger disabled, those aged 35-44, those with only a high school education, and the nonwhite disabled experienced reductions in income over the period relative to their able-bodied counterparts.

A further measure of well-being--total family income--reveals that many of the disabled, by living with parents or children, further reduce the differential in well-being between themselves and the able-bodied.

In real terms, transfer income per disabled male increased from \$2400 in 1968 to \$5700 in 1976. From 1976 to 1982, however, transfers decreased by more than 20 percent. The biggest increases were targeted on those who needed them most--nonwhites and those with little education. The retrenchments of 1976 and 1982 hit nonwhites especially. Increasing benefits were paid to the older and the lowest educated groups.

Over the period there has been a pattern of pulling apart in income among the different groups of the disabled as well as between most groups of the disabled and the able-bodied. While the older working-age population has had increasing transfers throughout the period, since the 1970s the transfers to nonwhites, especially, have declined.

INTRODUCTION: DISABILITY DEFINED AND MEASURED

The disabled population plays a central role in a variety of puzzles involving time-related patterns of health and mortality and their relationship to disability transfer, environmental control, and workplace safety policies. For example, during a period in which age-adjusted mortality rates have been falling, environmental and working conditions improving, and the quality of health care increasing, some indicators suggest that disability has been increasing. Does this imply that self-reported disability has responded positively to the increased generosity of public benefits for the disabled over time? Has "true" health status improved while that reported by individuals has deteriorated? Have improved environmental conditions, increased workplace safety, and increased medical care, in fact, had no effect on health status? Could the decline in mortality imply that some with poor health status who would otherwise have died have remained alive but in poor health?

This paper addresses a part of this puzzle. First, we attempt to accurately measure the size of the disabled population over time. Changes in the size of this population will be related to both macroeconomic and public policy developments over time. Second, we examine the composition of the disabled population over time and attempt to relate macroeconomic and policy changes to changes in who it is that is disabled. Third, based on a statistical explanation of the determinants of disability, we study the effects of changes in selected variables on the probability of being disabled and examine changes in these effects through time. Finally, we present estimates of the earnings and total income of the disabled, both absolutely and relative to the nondisabled,

and trace these changes through time. The role of transfers in increasing the well-being of the disabled over time is a central concern.

Disability Defined and Measured

Disability is a "rubber-band" concept. Many have attempted definitions of it with varying degrees of success (see Haveman, Halberstadt, and Burkhauser, 1984). Some of these attempts are based on the presence of specific health-related problems judged to cause disablement. Others are based on medical or psychological examinations designed to measure the extent to which individuals can or cannot function independently, or the extent to which they are limited in their work. Still others rely on the self-assessments of individuals who are asked questions regarding the presence of conditions that limit their work or mobility. All of these measures have various drawbacks which differ among them; none provides a uniquely reliable indicator of true health status.

Our measurement of disability rests on two criteria: the presence of work limitations and the receipt of government benefits for the disabled. Those classified as disabled owing to work limitations are those who report being unable to work or unable to work full time, full year, because of the presence of limiting health conditions. The disabled identified by the program participation criterion are those who receive benefits from the Social Security Disability Insurance Program, the disability component of the Supplemental Security Income program, Railroad Retirement Program benefits for the disabled, and Workers' Compensation. These definitions are given in Appendix A. They are adapted from Wolfe (1980).

We have applied these definitions as consistently as possible to the adult working-age population (18-64) over the 1962 to 1984 period. The public use files for the Current Population Survey for the years 1962, 1968, 1973, 1976, 1980, 1982, and 1984 were employed in the estimation. To tabulate percentages of the population defined to be disabled in each year, we attached the sample weights provided in each year's data to each observation.

I. THE DISABLED WORKING-AGE POPULATION: 1962-1984

Our estimate of the disabled working-age population as a percentage of the U.S. population aged 18-64 is shown in Table 1 for the 1962-1984 period. Three criteria are employed: (1) the presence of self-reported work limitations; (2) the receipt of disability transfer income; and (3) either (1) or (2) or both. Our preferred definition is (3), which designates as a disabled person anyone who reports him/or herself to be work limited or who receives a public income transfer awarded on the basis of the presence of a disabling condition. The incidence of disability is also shown by sex for all three criteria.

Looking first at the self-reported work limitation criterion, the disabled as a percentage of the total population rose from 5.1 percent in 1962 to over 7.2 percent in 1973. After 1973, the percentage trailed off slowly, so that by 1984 6.2 percent of this population group was reporting serious work limitations. The pattern of change over time differed substantially between men and women. The male percentage increased by 50 percent from 1962 to 1976--from 6.0 percent to 8.9 percent--and then tailed off to 6.6 percent in 1984. The female percentage disabled

Table 1

Percentage of Working-Age Population Disabled,
by Criterion and Sex, 1962-1984, Various Years

	<u>Work Limitation</u>			<u>Program Participation</u>			<u>Either Criterion</u>		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
1962	6.0	4.3	5.1	4.8	1.0	2.0	9.5	4.8	7.0
1968	8.4	6.1	7.1	7.2	3.2	5.1	13.0	8.2	10.5
1973	7.7	6.7	7.2	8.3	4.0	6.0	12.8	9.3	11.0
1976	8.9	5.1	6.9	8.4	3.2	5.7	14.6	7.5	10.9
1980	6.5	6.2	6.4	8.1	4.9	6.5	11.9	9.6	10.7
1982	6.3	5.7	6.0	6.9	5.0	6.0	10.6	9.1	9.6
1984	6.6	5.7	6.2	6.5	4.5	5.4	10.5	8.6	9.5

Note: Calculations by the authors from CPS data for various years; see text.

lay below that of males throughout the period, in part because of the nonreporting of work limitations by women without work experience or plans to work. The female percentage rose from 4.3 percent in 1962 to 6.7 percent in 1973, and then decreased to 5.7 percent in 1984.

The overall time pattern of the work-limited disabled population parallels that of the sex-specific patterns: a substantial increase from 5.1 percent in 1962 to 7.2 percent in 1973, tailing off slowly to 6.2 percent in 1984.

Applying the program participation criterion yields the same hump-shaped time pattern for males and females, but with more rapid growth early in the period followed by a more substantial decrease after 1980. While 4.8 percent of working-age males reported receiving disability transfers in 1962, this percentage had grown to 8.4 percent in 1976. The rapid decrease to 6.5 percent in 1984 reflects the effect of federal policies since 1980, many of which were designed to reduce the number of transfer recipients through more strict application of medical eligibility criteria (Halpren and Hausman, 1984; Haveman, Wolfe, and Warlick, 1984). The time-pattern for females lies substantially below that of males throughout the period, reflecting the need for a minimal work history in order to qualify for public disability insurance benefits. From 1962 to 1982, the percentage of working-age women receiving benefits grew from 1 percent to 5 percent; by 1984 it had fallen off to 4.5 percent, reflecting the post-1980 retrenchment efforts.

The percentage of individuals satisfying either the work limitation or the program participation criterion is shown in the last three columns. Again, hump-shaped time-patterns are in evidence. The male

total percentage rose from 9.5 percent in 1962 to nearly 15 percent in 1976, after which point it decreased to 10.5 percent. For females, growth persisted until 1980, representing a doubling in the percentage from 4.8 in 1962 to 9.6 in 1980. After 1980, the percentage declined to 8.6 by 1984. For the entire population, our definition of disability indicates an increase in the incidence of disability from 7 percent of the population in 1962 to about 11 percent in the 1973-76 period, falling to about 9.5 percent in the period after 1980.

This pattern, and especially the program participation component of it, can be compared with the pattern of actual program benefit reciprocity. This pattern is shown in Table 2 for the major federal disability income support programs--Social Security Disability Insurance (SSDI), Black Lung, Veterans Disability Compensation and Pensions, and Supplemental Security Income. The pattern for the SSDI program is again hump-shaped, rising from .7 percent of the working-age population in 1962 to 2.1 percent in the 1976-80 period, trailing off to 1.8 percent in the period of post-1980 retrenchment. The Black Lung program was initiated in 1970 to provide benefits to miners suffering from pneumoconiosis. Participation in this program grew to .4 percent of the population in 1976, and then decreased to .2 percent in 1984, again in part owing to retrenchment efforts in the 1980s. The Veteran's Disability programs have decreased secularly from 2 percent of the population in 1962 to 1.4 percent in 1984. The SSI program (formerly, Aid to the Blind and Disabled) has held fairly constant at about 1.8 percent of the population since 1976. Because individuals can receive support from more than one of these programs, participation in them cannot be aggregated to obtain an estimate of the total number of participants in programs for

Table 2

Number and Percentage of Working-Age Population Receiving Benefits
from Selected Disability Transfer Programs, 1962-1984, Various Years

	SSDI	Black Lung	Veterans	SSI (Blind and Disabled)
1962	741 (.7)	--	2015 (2.0)	508 (.5)
1968	1295 (1.2)	--	2138 (1.9)	774 (.7)
1973	2017 (1.7)	299 (.2)	2430 (2.0)	1320 (1.1)
1976	2670 (2.1)	469 (.4)	2452 (1.9)	2110 (1.7)
1980	2859 (2.1)	399 (.3)	2379 (1.8)	2355 (1.8)
1982	2604 (1.9)	355 (.3)	2224 (1.6)	2329 (1.7)
1984	2596 (1.8)	324 (.2)	2005 (1.4)	2531 (1.8)

-- = Not applicable.

the disabled. The strong hump-shaped pattern in the SSDI program, however, suggests that the general pattern in Table 2 is consistent with the patterns in Table 1.¹

Table 3 presents the CPS tabulations of the disabled by criterion and age over the 1962-1984 period. These same figures are summarized graphically in Figures 1-3. A peaking pattern is shown for each of the component criteria--program participation and work limitations--and for a criterion based on the presence of either or both of the components. However, the historical pattern is quite different using self-reported work limitations as compared to program participation. Moreover, the patterns differ substantially by age groups. The following captures the primary patterns which can be observed in the data:

- Whereas the percentage of the population disabled by the work limitation criterion peaked in the early 1970s for all age groups, the percentage disabled by the program participation criterion generally reached a peak in 1980. The following summarizes this pattern:

<u>Peak Year by Age and Criterion</u>		
	<u>Work Limitations</u>	<u>Program Participation</u>
18-34	1968	1973
35-44	1973	1980
45-54	1968	1980
55-64	1973	1980
All Ages	1973	1980

- The policy retrenchment efforts after 1980 resulted in a substantial reduction in the percentage of the population which is classified as disabled by the program-participation criterion. The greatest percentage reduction occurred in the 45-54 age group. The following displays the ratio of the 1984 program participation percentage to its 1980 value:

<u>Ratio of 1984 to 1980 Program-Participation Percentage</u>	
18-34	.89
35-44	.86
45-54	.80
55-64	.85
All Ages	.83

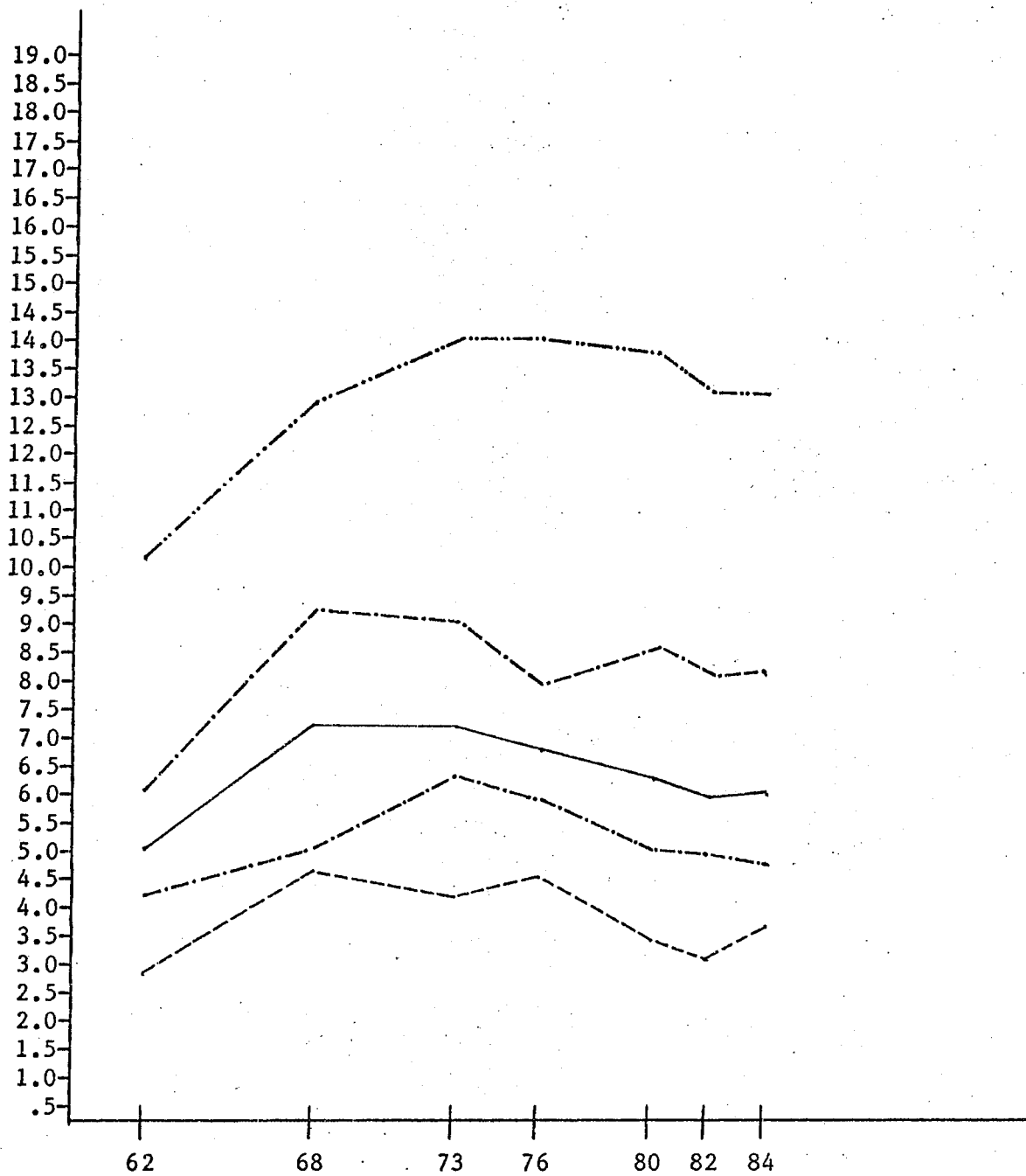
Table 3

Percentage of Working-Age Population Disabled, by Criterion and Age, 1962-1984, Various Years

Age	1962			1968			1973			1976		
	Program Participation	Work Limitation	Either Criterion	Program Participation	Work Limitation	Either Criterion	Program Participation	Work Limitation	Either Criterion	Program Participation	Work Limitation	Either Criterion
18-34	2.9	2.9	5.4	3.2	4.7	7.2	5.1	4.1	8.2	3.9	4.2	7.4
35-44	2.3	4.2	6.0	5.4	5.3	9.4	5.2	6.5	9.8	4.9	6.1	9.6
45-54	2.5	6.2	7.4	7.0	9.4	13.5	6.8	9.2	12.7	7.4	8.0	12.8
55-64	3.7	10.1	11.6	6.6	12.9	15.8	8.7	14.2	18.0	9.9	14.2	20.5
All ages	2.8	5.1	7.0	5.1	7.2	10.5	6.0	7.2	11.0	5.7	6.9	10.9
Age	1980			1982			1984					
	Program Participation	Work Limitation	Either Criterion	Program Participation	Work Limitation	Either Criterion	Program Participation	Work Limitation	Either Criterion			
18-34	4.4	3.5	7.2	3.9	3.3	6.4	3.9	3.7	6.7			
35-44	5.7	5.3	9.0	5.3	5.2	8.8	4.9	5.1	8.6			
45-54	8.8	8.7	13.9	8.1	8.2	12.7	7.0	8.2	11.5			
55-64	11.1	14.0	19.9	10.7	13.0	18.7	9.4	13.0	17.4			
All ages	6.5	6.4	10.7	6.0	6.0	9.8	5.4	6.2	9.5			

Figure 1

Percentage Disabled, by Work-Limitation Criterion and Age,
1962-1984



All ages ———
 18-34 - - - - -
 35-44 - · - · -
 45-54 - - - - -
 55-64 · · · · ·

Figure 2

Percentage Disabled, by Program-Participation Criterion and Age, 1962-1984

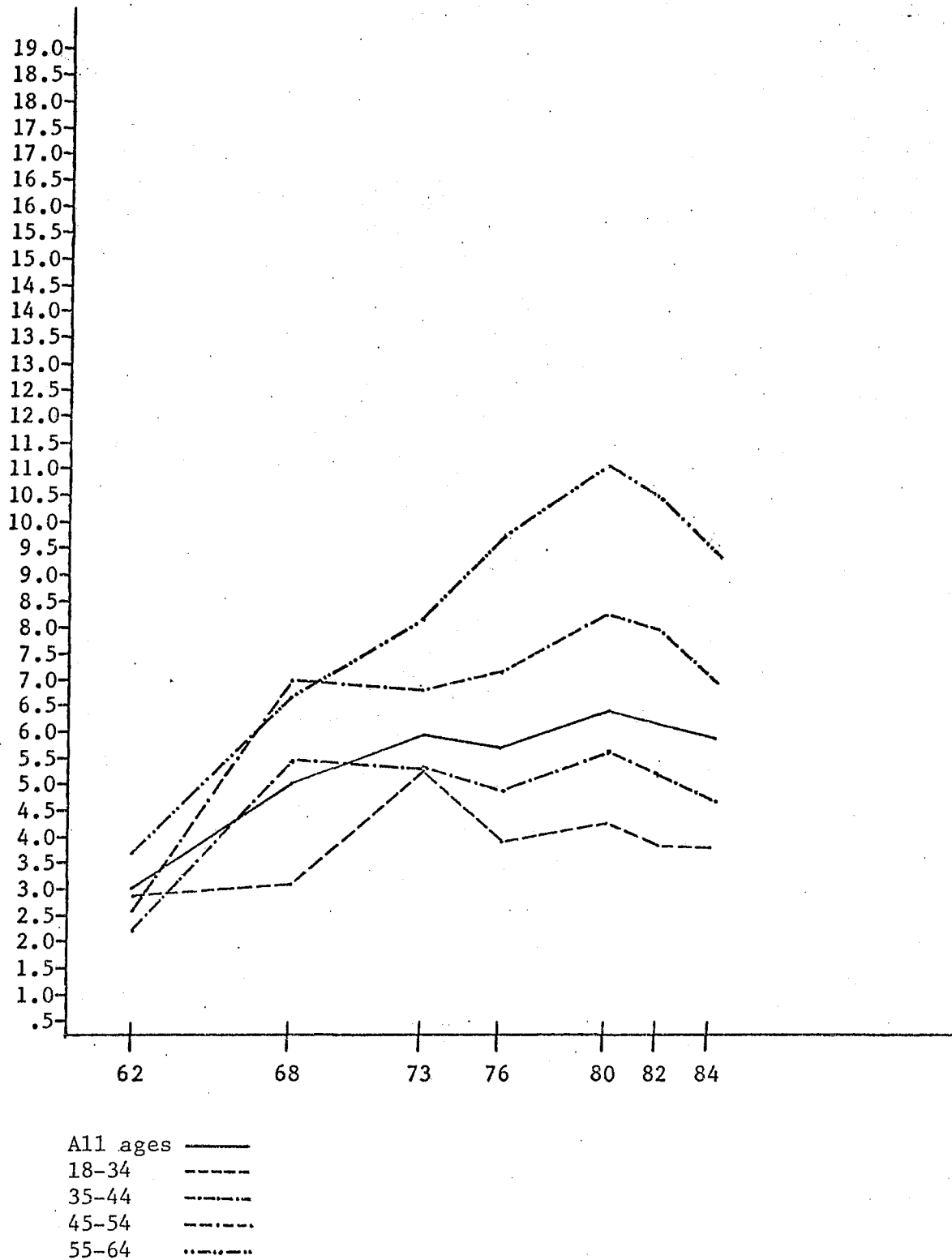
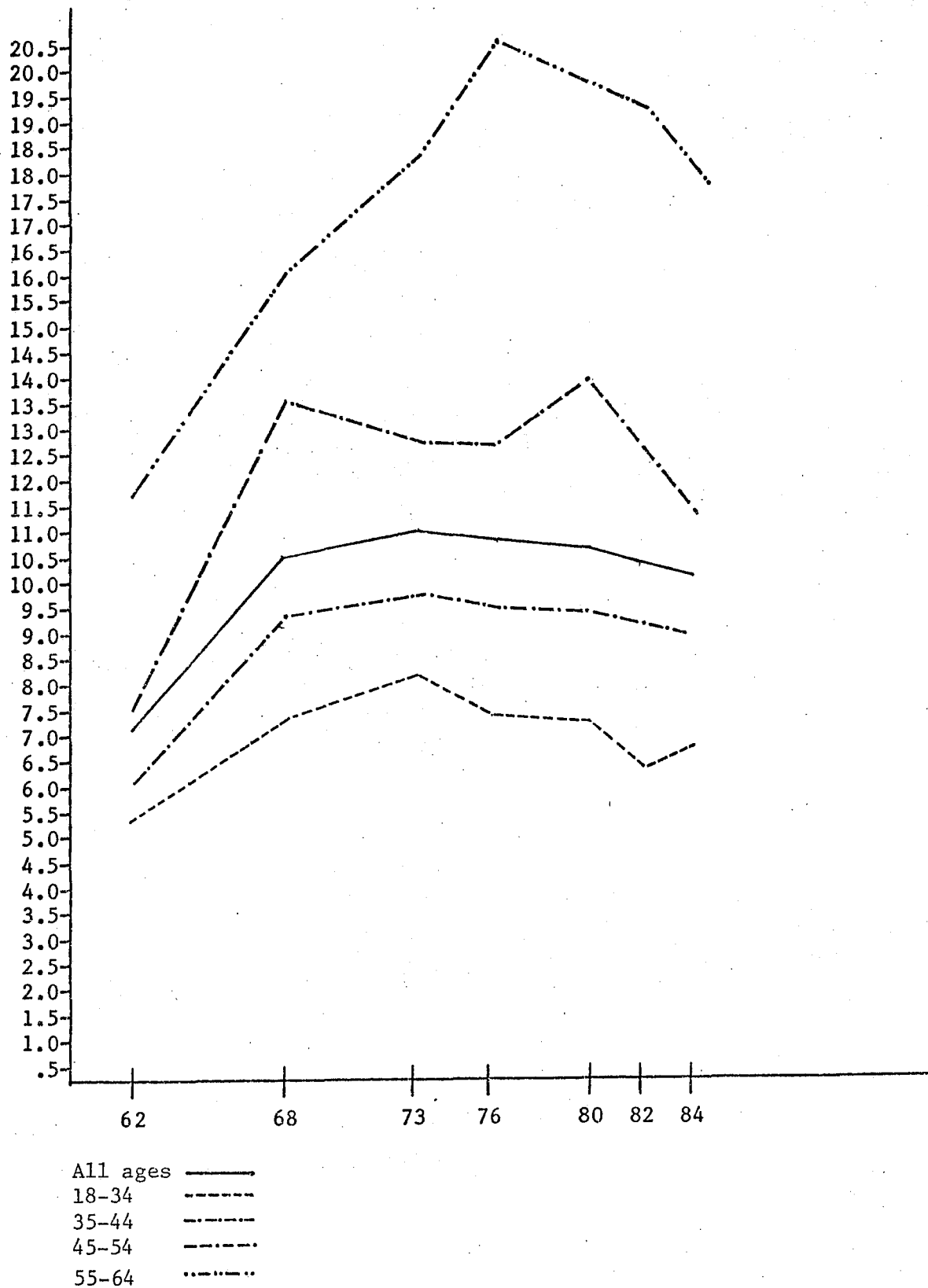


Figure 3

Percentage Disabled, by Work-Limitation and/or Program Participation
Criteria and Age, 1962-1964



- Large declines in the percentage of the population classified as disabled by the work-limitation criterion occurred in the decade of the 1970s for all age groups. Younger ages showed greater declines than those in older age groups. Consider the following:

Ratio of 1980 to 1973 Work-Limitation Percentage

18-34	.85
35-44	.82
45-54	.94
55-64	.98
All ages	.89

- After 1980, the earlier rapid decrease in the percentage of the population classified as disabled by the work-limitation criterion slowed substantially overall, and especially for the younger age groups. The decrease in reported work limitations continued after 1980 for older workers. The following indicates this pattern.

Ratio of 1984 to 1980 Work-Limitation Percentage

18-34	1.06
35-44	.96
45-54	.94
55-64	.93
All ages	.97

- Hence the decrease from 1980 to 1984 in the percentage of the population disabled, as defined by our measure, is dominated by changes in the program-participation component of the measure.

The extent to which these patterns are related to policy developments is, clearly, difficult to establish. It is noteworthy, however, that the retrenchment efforts of the post-1980 period are strongly reflected in the percentage of our measured disabled overall, and especially the percentage of the population labelled disabled by the program-participation criterion. These retrenchment efforts apparently had little effect on the incidence of post-1980 work limitations, even though it would be expected that some of those who were removed from the rolls and found work² would be reflected in a reduction in work limitations due to disability.

In light of this, it is especially noteworthy that the strong decrease in the incidence of work limitations in the under-45 population recorded in the 1970s coincides with the passage of and rigorous enforcement of both occupational health and safety and environmental regulations. The deliberate efforts to reduce the intensity of regulatory enforcement in these areas after 1980 coincides with the near cessation of the decline in the incidence of self-reported work limitations (and, indeed, its increase for the younger age group). To the extent that disability incidence recorded by the work-limitation criterion more closely represents true disability incidence than that induced by explicit program leniency decisions, the post-1980 falloff in our aggregate disability incidence pattern is but an artifact of explicit program retrenchment efforts of this period. The actual incidence of disability may not have decreased, even though the number of those receiving income support benefits because of their handicaps was reduced.

II. THE DETERMINANTS OF DISABILITY STATUS: 1962-1984

In this section, we take the most comprehensive (and our preferred) measure of disability status--the presence of reported work limitations and/or the receipt of disability income support benefits--and explore the determinants of disability status over time. This examination seeks to distinguish the roles which a variety of commonly asserted "causes" or "correlates" of disability status play at a point in time, and how these determinants may have changed over time.

The incidence of disability among the working-age population changes over time in response to a wide variety of factors. For example, age is

a recognized correlate--and determinant--of disability status. Hence, as the average age of the population increases, the incidence of disability in the population would also be expected to increase. Similarly, economic conditions are widely recognized to be determinants of both self-reported disability and the receipt of income transfers (Lando, 1974; Hambor, 1975; Lando, Farley and Brown, 1982; Chirikos and Nestel, 1984). Hence, the incidence of disability, as we have defined it, would be expected to reflect economic opportunities. Changes over time in both the demographic structure of the population and the performance of the economy are likely to account for the intertemporal changes in the incidence of disability status which we have described in Section I. Moreover, the effect which any demographic factor (e.g., age) or economic condition (e.g., aggregate unemployment) has on the probability a person is designated as being disabled may change over time. For example, age may have taken a larger toll on the health and disability status of people two decades ago than it does today. Similarly, being laid off from work may result in more effort to secure disability transfers in a world in which unemployment compensation benefits are nonexistent or low than if jobless income support payments are relatively generous.

To examine the effect of a variety of factors on disability status, we fit a logit model to our data for each of the selected years. The dependent variable is the dichotomous variable (disabled = 1; not disabled = 0), and the determinants of disability status which our data enabled us to examine are race, age, education, marital status, veteran status (for males), the presence of children (for females), and the unemployment rate in the state in which the individual resides. Table 4

Table 4

Logit Regression Results:
Determinants of Disability Status,
Working-Age Males, 1962-1984, Various Years

	1962	1968	1973	1976	1980	1984
Race (white = 1)	.21*	.38*	.08	-.45*	-.30*	-.26
Age	-.02*	.01	.02	.06	.01	.05
Age spline 35	.04*	.00	-.02	-.05*	-.02	-.05*
Age spline 54	-.10	.02	.02	.13*	.07*	.07*
Education	-.11*	-.14*	-.31*	-.02*	-.18*	-.21
Never married	-.72*	.32*	.18	.85*	.23	.64*
Widower	.24*	.75*	.66*	.65*	.78*	.66*
Veteran status	NA	.44*	.75*	.47*	.93*	.67
Unemployment rate	4.56*	16.21*	.96	-2.47	-2.39	2.17

*Statistically significant at .05 level.

NA = Variable not available in 1962 data.

presents a summary of these results for males during the 1962-1984 period. Table 5 shows the estimates for females. (More detailed estimates from the logit equations are presented in Appendix B.)

The estimates for 1980 characterize the determinants of disability status in a recent year, undistorted by both the recession of the early 1980s and the policy measures undertaken to reduce the disability rolls since that time. For males, these results indicate that (1) nonwhite status is a significant and positive determinant of disability status; (2) age is positively related to the probability of being disabled, especially being 54 years old or older; (3) years of education is negatively and significantly associated with the probability of being disabled; (4) being unmarried (especially a widower) and being a veteran increases the probability of disability status; and (5) the probability of being unemployed is negatively though not significantly associated with being counted as disabled.

The impact of these various determinants of male disability status has changed over time, sometimes substantially. These changes can be seen in Table 4 by examining the pattern for each variable over time. The most notable change is that for the race variable. Two decades ago, white males were more likely than nonwhites to be in the disabled category, holding other determinants constant at their mean values. By the late-1970s, nonwhites were more likely to be disabled than whites. A likely explanation for this pattern is the increased eligibility for and receipt of disability benefits by nonwhites over time. Changes in the covered-work experience of blacks and the likely decreases in racially based administrative discretion would seem to have played roles. It is

Table 5

Logit Regression Results:
Determinants of Disability Status,
Working-Age Females, 1962-1984, Various Years

	1962	1968	1973	1976	1980	1984
Race (white = 1)	-.23*	-.57*	-.47*	-.46*	-.46*	-.02
Age	.22*	.03*	.01	.08*	.03*	.05*
Age spline 35	-.02	-.01	.01	-.03	.01	-.05*
Age spline 54	-.05*	-.07*	.03	-.08*	-.05	.09*
Education	-.12	-.13*	-.28*	-.02*	-.27*	-.12
Never married	.79*	.83*	1.57*	.74*	.84*	-.38*
Widow	.92*	1.08*	.93*	.77*	.92*	.11
Presence of children	-.14	-.15	-.10	.06	.06	.00
Unemployment rate	-4.04	-.03	-12.40*	-6.33	2.30	3.92*

*Statistically significant at .05 level.

also consistent with the greater decline in labor force participation among nonwhites than whites in the 1970s.

Age has become a more important determinant of being disabled over time. In the 1960s, there is little evidence that age contributed significantly to the probability of being disabled. After the mid-1970s however, age over 54 is significantly and positively related to being classified as disabled. This is consistent with the patterns of substantial decline in the labor force participation of men 55-64 during the decade of the 1970s.

Throughout the period, education is a negative and, except for 1984, a significant determinant of disability status.

Finally, the sign on the unemployment variable was positive and significant in the 1960s, implying that being unemployed was associated with either a greater propensity of reporting oneself as disabled or a higher probability of receiving disability transfers or both. This was, of course, a period during which both unemployment rates and the compensation paid to the unemployed were relatively low. Moreover, it seems likely that the stigma associated with being unemployed was relatively high then as compared to the present. These considerations all suggest that being unemployed during the 1960s would increase the probability of being classified as disabled.

During the 1970s and 1980s, however, the probability of being disabled was not significantly related to the unemployment variable, and the sign of the coefficient is unstable. Unemployment benefits relative to alternative income sources had risen by the end of the 1970s, and with high unemployment rates a seemingly permanent fixture, the stigma

associated with being unemployed is likely to have been reduced. Along with this, during the 1970s other factors may have played a role: (1) there may have been more reluctance by administrators to admit persons to the disability rolls during periods of high unemployment; (2) disabled persons may have believed they were laid off or fired because of general economic conditions rather than because of their health condition; or (3) extended unemployment benefits may have lengthened the time until application of disability benefits.

Table 5 presents the pattern of determinants for females of working age. By and large, the patterns for women are similar to those for men, both in a single year (1980) and over time. A few exceptions, however, should be mentioned. For women, age up to 35 years is positive and generally significantly related to the probability of being disabled; for men this pattern was insignificant and unstable. For women, being 54 or older is positively and significantly related to the probability of being disabled only in the most recent period; for men, older age has been an important determinant of disability status since the mid-1970s. For women, being unmarried was positively and significantly associated with presence in the disability population until 1980; after 1980, single women appeared less likely to be classified as disabled than married women. For men, the coefficients on the widower variable were positive and significant throughout the period. Finally, for women prior to 1980, the unemployment rate was generally negatively related to their being classified as disabled. Apparently as unemployment among husbands increased, the probability that wives would be reported as disabled tended to fall. This is consistent with the off-noted substitution of

spouse's work for that of the husband in periods of economic distress. Since 1980, however, higher unemployment probabilities are associated with higher probabilities of female disability, a pattern that was present for males some years earlier.

Using the logit equations presented in Appendix B, we calculated the partial derivatives for the mean person and for persons of certain other characteristics from 1962 to 1984. The purpose of this calculation is to isolate certain determinants of the trend in disability--e.g., economic conditions (including unemployment), race, and age.

These results are shown in Table 6, and are consistent with those reported above. They again suggest (1) an increase in probability of being disabled among older men beginning in 1968, peaking in 1976; (2) an increasingly negative association between high unemployment and disability in the late 1970s among men; and (3) a generally larger tendency for nonwhites to be disabled relative to whites, beginning in the 1970s.

III. TRENDS IN THE RELATIVE WELL-BEING OF THE DISABLED AND THE ROLE OF INCOME TRANSFERS, 1962-1984

The rapid growth in public income support to disabled persons of working age is a well-documented phenomenon of the 1970s (Haveman, Halberstadt, and Burkhauser, 1984). However, the extent to which this income support supplemented the labor earnings of the disabled or substituted for them is a matter of substantial dispute (Haveman, Wolfe, and Warlick, 1984). Equally contentious is the extent to which the increase in leniency and generosity of public disability benefits during the 1960s and 1970s induced people who could have remained economically active to

Table 6

Partial Derivatives Associated with Logit Regression Results
of Tables 4 and 5
(Unspecified Variables at Mean)

Variable	1962	1968	1973	1976	1980	1984
<u>Results Associated with Table 4--Males</u>						
<u>White</u>						
Age 55	-1.6	.3	.3	.7	.6	.4
10% Unemployment rate	.0	1.2	.1	-.1	-.2	.1
<u>Nonwhite</u>						
Age 55	-1.5	.2	.3	1.2	.7	.5
10% Unemployment rate	.1	.9	.1	-.1	-.3	.1
<u>Results Associated with Table 5--Females</u>						
<u>White</u>						
Age 55	.0	-1.2	.5	-.2	-.2	-.4
10% Unemployment rate		-.0	-1.1	-.0	.1	.2
<u>Nonwhite</u>						
Age 55	.0	-1.4	.6	-.4	-.2	-.4
10% Unemployment rate		-.0	-1.6	-.0	.2	.2

withdraw from the labor force (Parsons, 1980; Haveman and Wolfe, 1984a, 1984b). In this section, we will present and examine several trends which can illuminate these processes, and simultaneously present evidence on the changes over time in the economic well-being of the disabled relative to the able-bodied.

A. Trends in Earnings, 1962-1984

Table 7 shows the trend from 1962 to 1984 in the real earnings (in 1983 dollars) of those males which have been classified as disabled, both overall and by subgroup. Several patterns are noteworthy.

First, from 1962 to the mid-1970s, the real earnings of the disabled in all categories increased rapidly; for the disabled population overall, from about \$10,000 per year to over \$16,000 (in 1983 dollars). However, after the mid-1970s earnings plummeted, reaching \$9,500 in the recession of 1981-82. By 1984, they had begun to recover, except for nonwhites. The pattern for female disabled persons (shown in Table D.1 in Appendix D) is quite different. Earnings patterns grew rather steadily over the 22-year period, apart from an anomalous and unexplained decrease in 1976, related to a falloff in the earnings of disabled women in the older age group.

Second, over the 22-year period, middle-aged, highly educated, and white males had far better earnings than did the other groups. Nonwhite males had far worse earnings experience, while those with low education and the elderly also did considerably poorer than the average male. Table 8 presents the ratio of 1973 earnings to 1962 earnings for males, and the ratio of 1984 earnings to both 1973 and 1962 earnings for each of the groups to illustrate this pattern.

Table 7

Real Earnings of Disabled Males, Overall and by Subgroups,
1962-1984, Various Years
(1983 dollars, in thousands)

	1962	1968	1973	1976	1980	1982	1984
<u>Age</u>							
18-34	11.1	12.1	14.7	14.4	14.0	10.6	8.8
35-44	11.8	15.7	19.6	18.0	11.6	10.2	11.3
45-54	10.6	14.1	18.1	14.3	14.2	7.5	13.2
55-64	7.1	9.0	14.2	10.5	7.4	5.1	6.7
<u>Years of education</u>							
0-11	8.8	10.0	11.8	5.6	6.9	3.8	3.7
12	11.2	15.4	16.4	12.4	11.9	7.8	8.9
13 or more	18.7	16.9	22.5	22.5	16.8	14.5	15.6
<u>Race</u>							
Nonwhite	3.7	6.9	8.3	6.7	6.1	3.2	2.1
White	11.2	13.5	18.0	14.0	12.6	9.2	11.1
<u>All disabled^a</u>	10.3	13.2	16.5	13.2	11.7	9.5	9.6

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

Table 8
 Relative Real Earnings Patterns of Disabled Males,
 by Subgroups, 1962-1984, Various Years

	1973/1962	1984/1973	1984/1962
<u>Age</u>			
18-34	1.32	.60	.79
35-44	1.66	.57	.96
45-54	1.71	.73	1.24
55-64	2.00	.47	.94
<u>Years of education</u>			
0-11	1.34	.31	.42
12	1.46	.54	.79
13 or more	1.20	.69	.83
<u>Race</u>			
White	1.61	.62	.99
Nonwhite	2.24	.25	.57
<u>All disabled^a</u>	1.60	.58	.93

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

From 1962 to 1973--the period of rapid earnings increases for all disabled male groups--the older disabled (55-64), those with less education, and the nonwhite experienced the most rapid gains: the lowest earnings groups were being pulled up toward the mean. However, after the mid-1970s, the situation is reversed--the largest decreases in earnings were experienced by those with the least skills and labor market advantages; the very young and old, the low educated, and the nonwhite population. By 1984, all of the groups except those 45-54 had lower real earnings than in 1962, and for some groups the reduction was enormous. Hence, while the 1962 to mid-1970s period was one of narrowing inequality in labor market performance among the groups of the disabled, the period after the mid-1970s was one in which the groups of the disabled were pulled apart from each other. This pattern is even more clearly seen in Table 9, when the ratio of the earnings of each group to the earnings of all the disabled is shown over time.

Finally, the pattern from 1980 to 1984 (income years 1979 to 1983) is of interest. For the subgroups and for all the disabled, 1982 was a nadir, reflecting largely the economic slowdown and rising unemployment of the 1981-1982 recession. However, for most of the subgroups and for the total disabled population overall, the recovery period from 1982 to 1984 led to real earnings increases. Three groups did not share in this recovery; indeed, the earnings decreases experienced prior to 1982 continued throughout the recovery period. These groups are the youngest group (18-34), those with the lowest education (< 12 years), and the nonwhite population. This is perhaps the most vivid indication of the pulling-apart phenomenon referred to earlier.

Table 9

Ratio of Subgroup Earnings to the Earnings of
All Disabled Males, 1962-1984, Various Years

	1962	1973	1984
<u>Age</u>			
18-34	1.08	.89	.92
35-44	1.15	1.19	1.18
45-54	1.03	1.10	1.38
55-64	.69	.86	.70
<u>Years of education</u>			
0-11	.85	.72	.38
12	1.09	.99	.92
13 or more	1.82	1.36	1.62
<u>Race</u>			
White	1.09	1.09	1.16
NonWhite	.36	.50	.22
<u>All disabled^a</u>	1.0	1.0	1.0

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

No similar earnings patterns are observed for disabled females (see Table D.1 in Appendix D); for females the time-related earnings patterns are relatively constant except for older women and those with low education, where a secular decrease is observed. In the post-1980 period, however, younger disabled women and those with more than a high school education do report earnings increases. At both the beginning and the end of the period--1962 and 1984--disabled women's earnings stood at about 40-50 percent of those of men. In the intervening years, however, the percentage fell to about 25 percent.

An interesting question concerns how these real earnings patterns for disabled males compare with those of the able-bodied population. In Table 10, the ratios of the real earnings of the disabled to those of the equivalent group of the nondisabled are presented for the 1962-1984 period. (Table D.2 of Appendix D presents the analogous table for women.) Appendix C furnishes detailed earnings and income data on disabled and nondisabled males over the period 1962-1984.) These patterns are most revealing. During the period prior to the mid-1970s, the ratio of the earnings of the disabled to those of the nondisabled ranged from .61 to .74, and was increasing throughout the period. The relative disabled-nondisabled gap was narrowing. After the mid-1970s, the pattern is just the reverse. The range is lower (.66 to .54) and the trend in the ratio is downward. Not only did the post-mid-1970s period witness a pulling apart of the disabled from each other, but the disabled as a group were increasingly separated from the able-bodied. Post-mid-1970s pulling apart in both dimensions is the main conclusion which these data document.

Table 10

Ratio of Real Earnings of Disabled to Nondisabled Males,
by Subgroup, 1962-1984, Various Years

	1962	1968	1973	1976	1980	1982	1984
<u>Age</u>							
18-34	.87	.83	.88	1.00	.91	.77	.69
35-44	.58	.61	.66	.67	.42	.38	.46
45-54	.56	.55	.65	.51	.55	.30	.53
55-64	.44	.44	.60	.49	.34	.24	.37
<u>Years of education</u>							
0-11	.58	.62	.67	.36	.46	.29	.32
12	.76	.77	.75	.65	.62	.44	.57
13 or more	.85	.69	.85	.93	.70	.64	.71
<u>Race</u>							
Nonwhite	.37	.55	.53	.47	.47	.25	.15
White	.65	.64	.78	.67	.59	.46	.60
<u>All disabled^a</u>	.61	.66	.74	.66	.58	.51	.54

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

The patterns among the subgroups tell much the same story as above. Relative to their able-bodied comparison group, the youngest and the oldest disabled, those with the least education, and the nonwhites fared most poorly over time. These disabled stand as the groups in American society who have fallen most rapidly toward the bottom of the labor earnings distribution.

The case of the nonwhite disabled population illustrates this phenomenon most clearly. From 1962 to 1973, disabled nonwhite males earned far less than able-bodied nonwhite males, but the ratio was increasing--from 37 to 53 percent. After 1976, disabled nonwhites experienced a steady erosion in their earnings relative to able-bodied nonwhites. By 1984, the ratio stood at an abysmally low level of 15 percent. (The data for females shown in Appendix D Table D.2, show far less movement, and fewer discernable patterns. Since the late 1960s, the aggregate ratio of females ranged between 60 and 90, somewhat above that for males.)

A similar pattern is shown in Figures 4 and 5, where the real earnings over time of the various disabled groups of males are plotted as a ratio of earnings of all nondisabled white male workers in 1984.³ Relative to this white male real earnings denominator, the earnings of the disabled of all groups showed rapid progress until the mid-1970s. For the total group of disabled, this ratio reached a high of nearly .9 in 1973; by 1984 it had fallen to about .5. For nonwhite disabled males, this earnings ratio peaked at .45 in 1973, and then fell steadily to about .11 in 1984. Thus all of these tables tell a similar story regarding earnings: (1) the disabled were doing less well in 1984 than two decades earlier; (2) the disabled did best in terms of earnings in

Figure 4

Ratio of Real Earnings of Male Disabled, by Age and All Ages,
to Real Earnings of Nondisabled White Males in 1984

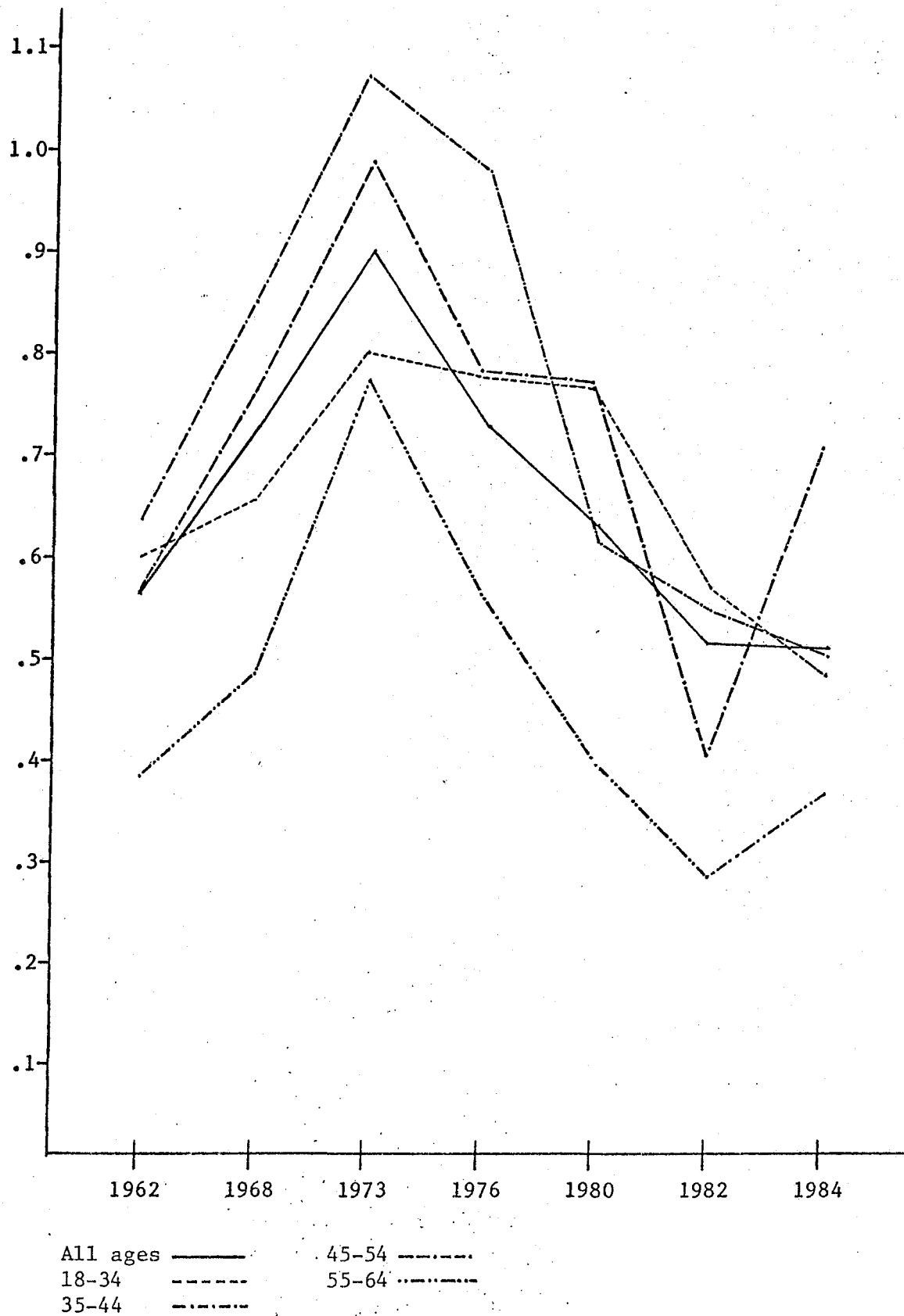
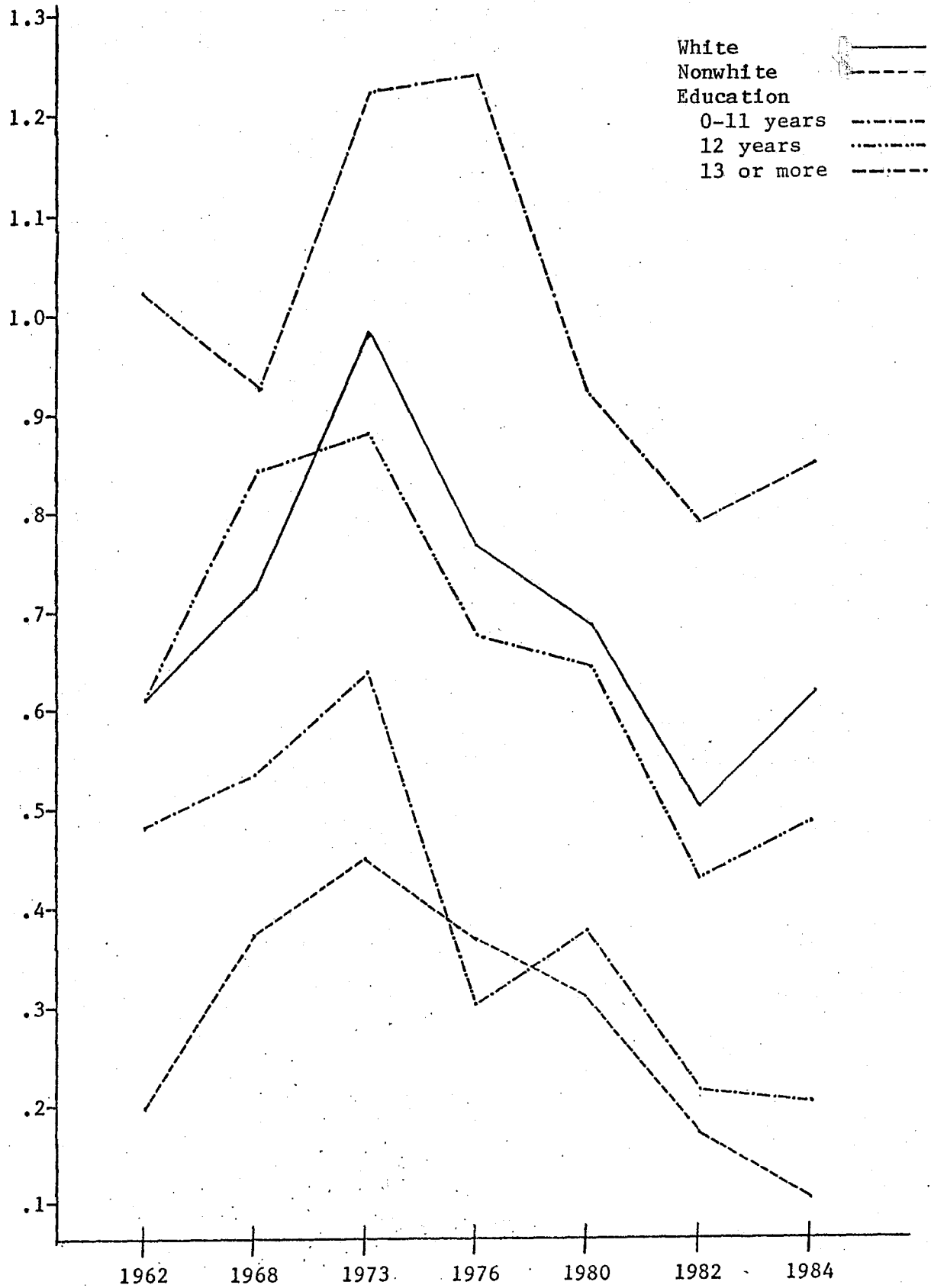


Figure 5

Ratio of Real Earnings of Male Disabled, By Race and Education,
to Real Earnings of Nondisabled White Males in 1984



the early to mid-seventies; and (3) nonwhite disabled males are doing increasingly poorly in terms of earnings.

B. Trends in Total Individual Income, 1962-1984

Table 11 presents the trend in total individual income for the male disabled population over the 1962-1984 period. Total individual income includes income from assets (e.g., dividends, interest, rent), public income transfers, and other income (e.g., gifts), as well as labor earnings. It is the analog to Table 7. Whereas Table 7 indicates the performance of the male disabled in the labor market, Table 11 shows a more comprehensive indicator of economic well-being, taken to be the total income flows which are directly received by disabled people.

The time trends observed for labor earnings are present in the data for total individual income, as well. The period from 1962 to the mid-1970s saw rapid income growth for all groups, especially older workers (45 years or older), those with low education levels, and nonwhites. After the mid-1970s, total individual income also fell, with the largest decreases experienced by young workers, those with low education levels, and nonwhites.

However, while the general pattern of change in total individual income parallels that of earnings, the increase in total individual income from 1962 to the mid-1970s was larger than that for earnings, while the falloff after the mid-1970s was far less severe. The reason for this is the rapid growth of the nonearnings portion of total individual income--largely, public income transfers--over the 22-year period. This growth in individual nonearned income relative to earnings is shown

Table 11

Total Individual Income of Disabled Males, Overall
and by Subgroup, 1964-1982, Various Years
(1983 dollars, in thousands)

	1962	1968	1973	1976	1980	1982	1984
<u>Age</u>							
18-34	11.6	13.3	16.8	17.3	16.5	12.7	11.2
35-44	13.0	17.9	22.1	22.3	16.4	13.8	14.9
45-54	12.1	17.1	21.4	14.0	19.8	13.0	17.6
55-64	9.2	12.2	18.7	17.1	14.4	11.8	14.0
<u>Years of education</u>							
0-11	9.8	12.1	14.9	9.7	11.4	8.3	8.3
12	13.3	18.2	18.8	16.2	17.1	12.4	12.4
13 or more	23.5	25.4	27.5	25.6	25.4	24.3	23.3
<u>Race</u>							
Nonwhite	4.9	8.8	10.3	10.0	9.7	6.7	5.9
White	12.5	16.0	21.2	18.6	17.6	13.8	15.4
<u>All disabled^a</u>	11.5	15.6	19.5	17.4	16.5	14.6	13.8

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

in Table 12, for the years 1962, 1973, and 1984. For the entire disabled population, the ratio of total individual income to earnings was 1.12 in 1962. By 1973, this had grown to 1.18 and by 1984 had risen to 1.44.⁴ For older workers, those with low education, and the nonwhite, the relative growth of the nonearnings component of total individual income was greater than for other subgroups, and by 1984 nonearned income accounted for more than one-half of the total individual income of these groups.

Table 13 is the analogue of Table 10, and shows how the disabled population is faring relative to the nondisabled over time, in terms of total individual income. Whereas the earnings ratio for the disabled decreased from .61 to .54 over the period, the ratio of total individual income started at a higher level--.65--and over the entire 22-year period increased to 72. As with earnings, the individual income ratio for all disabled increased until the mid-1970s, and then decreased. However, while the earned income ratio rose in 1984 after reaching its lowest level in 1982, the total individual income ratio for all the disabled fell throughout the post-mid-1970s period, perhaps reflecting the falloff of public transfers to the disabled through 1984, even as earnings recovered after the 1981-1983 recession.

While the disabled as a group had more income (relative to the non-disabled) at the end of the period than at its start, this pattern does not hold for all of the subgroups. In particular, the young disabled, those aged 35-44, those with a high school education, and the nonwhite disabled experienced reductions in income over the period relative to their able-bodied counterparts.

Table 12

Ratio of Real Total Individual Income of Disabled Males
to Their Real Earnings, Overall and by Subgroup,
1962, 1973, 1984

	1962	1973	1984
<u>Age</u>			
18-34	1.04	1.14	1.27
35-44	1.10	1.13	1.32
45-54	1.14	1.18	1.33
55-64	1.30	1.32	2.09
<u>Years of education</u>			
0-11	1.11	1.26	2.24
12	1.19	1.15	1.39
13 or more	1.26	1.22	1.49
<u>Race</u>			
Nonwhite	1.32	1.24	2.33
White	1.11	1.18	1.38
<u>All disabled^a</u>	1.12	1.18	1.44

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

Table 13

Ratio of Real Total Individual Income of Disabled to
Nondisabled, by Subgroup, 1972-1984, Various Years

	1962	1968	1973	1976	1980	1982	1984
<u>Age</u>							
18-34	.89	.89	.99	1.15	1.02	.87	.83
35-44	.62	.69	.72	.80	.58	.49	.57
45-54	.58	.65	.75	.46	.73	.49	.67
55-64	.52	.55	.70	.68	.57	.47	.63
<u>Years of education</u>							
0-11	.64	.73	.81	.58	.73	.59	.67
12	.85	.89	.82	.80	.85	.67	.71
13 or more	.85	.77	.94	1.08	.84	.77	.86
<u>Race</u>							
Nonwhite	.47	.69	.64	.68	.71	.50	.40
White	.69	.72	.87	.83	.78	.64	.77
<u>All disabled^a</u>	.65	.76	.84	.81	.78	.73	.72

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

C. Trends in Equivalent Family Income, 1962-1984

Public income transfers are one means by which disabled people are able to sustain their economic well-being in the face of labor market handicaps. A second is the forgoing of independent living by remaining in the family of parents or children. To reflect this, we have estimated the equivalent family income⁵ of both the disabled and the non-disabled over time. Table 14 presents this more comprehensive measure of economic well-being for the disabled from 1962 to 1984. (Analogous data for females are presented in Table D.3 of Appendix D.)

While something of the hump-shaped income pattern remains for adjusted family income, it is substantially muted. For example, for the disabled population, as a whole, adjusted real family income rose from \$22,400 in 1968⁶ to \$27,800 in 1973 and then fell to \$20,800 in 1982, recovering somewhat to \$22,700 by 1984.

The pattern for female disabled family income, shown in Table D.3, is not hump-shaped, showing a sharp drop-off in income in the last one-half of the 1970s, and something of a revival in the 1980s. If anything the overall pattern is U-shaped. The pattern among groups parallels that for males, and except for the late-1970s ranges from 80 to 90 percent of the income level of disabled men.

While the differences among the disabled observed in the series on individual earnings and income continue to exist when adjusted family income is used as the indicator of economic well-being, they too are more muted. For example, the differences among age groups are negligible, ranging from \$20,900 to \$26,200 in 1984, far less than the difference of from \$6,700 to \$13,200 observed for earnings. Nevertheless, the lowest

Table 14

Real Equivalent Family Income of Disabled Males,
Overall and by Subgroup, 1962-1984, Various Years
(1983 dollars, in thousands)

	1962	1968	1973	1976	1980	1982	1984
<u>Age</u>							
18-34	NA	24.6	26.9	25.1	24.4	24.5	21.9
35-44	NA	25.0	28.6	28.3	22.4	18.2	20.9
45-54	NA	23.3	29.5	30.0	30.0	21.1	26.2
55-64	NA	18.0	26.5	24.0	23.3	18.5	22.0
<u>Years of education</u>							
0-11	NA	18.2	22.2	20.2	18.8	16.1	14.9
12	NA	25.9	27.8	26.3	25.2	20.5	21.0
13 or more	NA	33.1	34.9	34.8	31.1	27.8	31.0
<u>Race</u>							
Nonwhite	NA	14.4	17.0	26.4	19.1	13.1	11.1
White	NA	23.5	29.8	26.5	25.8	22.5	24.8
<u>All disabled^a</u>	NA	22.4	27.8	26.5	24.8	20.8	22.7

NA = Not available.

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

education group and nonwhites live in families with substantially lower adjusted family incomes than the average disabled person. In 1984, the disabled with less than a high school education lived in families with adjusted incomes which are two-thirds of the average disabled; nonwhite disabled equivalent family income is less than 50 percent of that of the average family of a disabled person.

As with the other measures of economic well-being, the tabulation using equivalent family income also shows increases in inequality among the disabled over time. In 1968, the range of incomes among the subgroups was from \$14,400 (nonwhite) to \$33,100 (highly educated) or a ratio of 2.3; in 1984, the ratio had increased to 2.8.

Table 15 compares the adjusted family income of the disabled to that of their able-bodied cohorts over time. It is the analogue of Table 10.

Whereas the earnings ratio of the disabled to the nondisabled ranged from .54 to .74 over the 22-year period, the equivalent family income figures range from .66 to .80 over the period. This increase, in the neighborhood of 20 percent, represents both the earnings supplements in the form of public income transfers and the living arrangement adjustments made by the disabled in their efforts to secure income support replacements for the lack of labor market earnings.

For all of the subgroups over time except the young, the family income ratio exceeds the earnings ratio. In particular, for nonwhites, those with low education, and the older worker groups, the role of transfers and living with families resulted in a major increase in the disabled-nondisabled ratio.

Over time, the overall ratio grew from .74 to .80 in the mid-1970s, and then--as with several of the other series--decreased to .72. By the

Table 15

Ratio of Real Equivalent Family Income of Disabled
to Nondisabled Males, by Subgroup, 1968-1984, Various Years

	1962	1968	1973	1976	1980	1982	1984
<u>Age</u>							
18-34	NA	.85	.83	.72	.77	.87	.76
35-44	NA	.80	.77	.84	.62	.50	.62
45-54	NA	.70	.77	.75	.77	.56	.69
55-64	NA	.62	.76	.70	.67	.54	.71
<u>Years of education</u>							
0-11	NA	.78	.81	.78	.75	.70	.72
12	NA	.88	.84	.84	.76	.69	.74
13 or more	NA	.78	.83	.89	.79	.75	.83
<u>Race</u>							
Nonwhite	NA	.68	.64	1.05	.76	.55	.40
White	NA	.75	.83	.77	.73	.68	.78
<u>All disabled^a</u>	NA	.74	.80	.80	.73	.66	.72

NA = Not available.

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

end of the period, then, the disabled were living in families whose equivalent income is about 72 percent of that of nondisabled families, a slight erosion from the 74 percent recorded in 1968. However, for the older disabled and well-educated disabled, the disabled-nondisabled ratio increased somewhat from 1968 to 1984.

Finally, the effects of the 1981-1982 recession and the disability transfer program budget cuts are clearly seen in Table 15. For all subgroups except the youngest, the ratio fell substantially from 1980 to 1982, but most groups recovered partially by 1984. The exception is nonwhites, where the ratio fell from .76 in 1980 to a low of .40 in 1984.

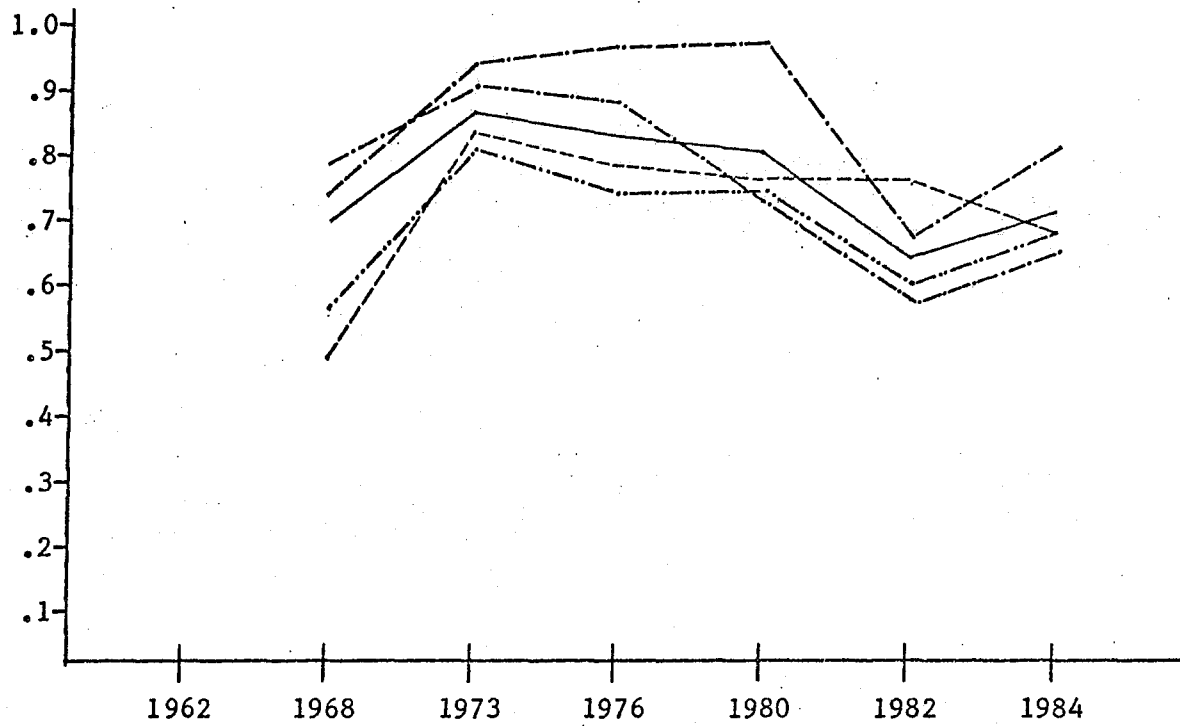
Figures 6 and 7 present a final comparison--the ratio of the economic well-being of the disabled, by subgroup (as measured by equivalent family income) to that of white nondisabled males in 1984. The patterns are similar--a rapid increase from the 1960s to the mid-1970s, and a falloff in relative economic well-being after that point. The large dip in 1982--caused by the recession and transfer income reductions--is clearly seen. The relatively high level of well-being of the disabled with 13 or more years of education and the very low and rapidly deteriorating level for non-whites are two other notable characteristics of the diagrams.

D. Trends in Transfer Income Receipts, 1962-1984

The role of public income transfers in supporting the low earnings of the disabled over the 1962-1984 period has been alluded to indirectly in previous sections. We saw that as the labor market performance of the disabled deteriorated over time, the growth of income transfers tended to operate to offset some of the loss of well-being that would have

Figure 6

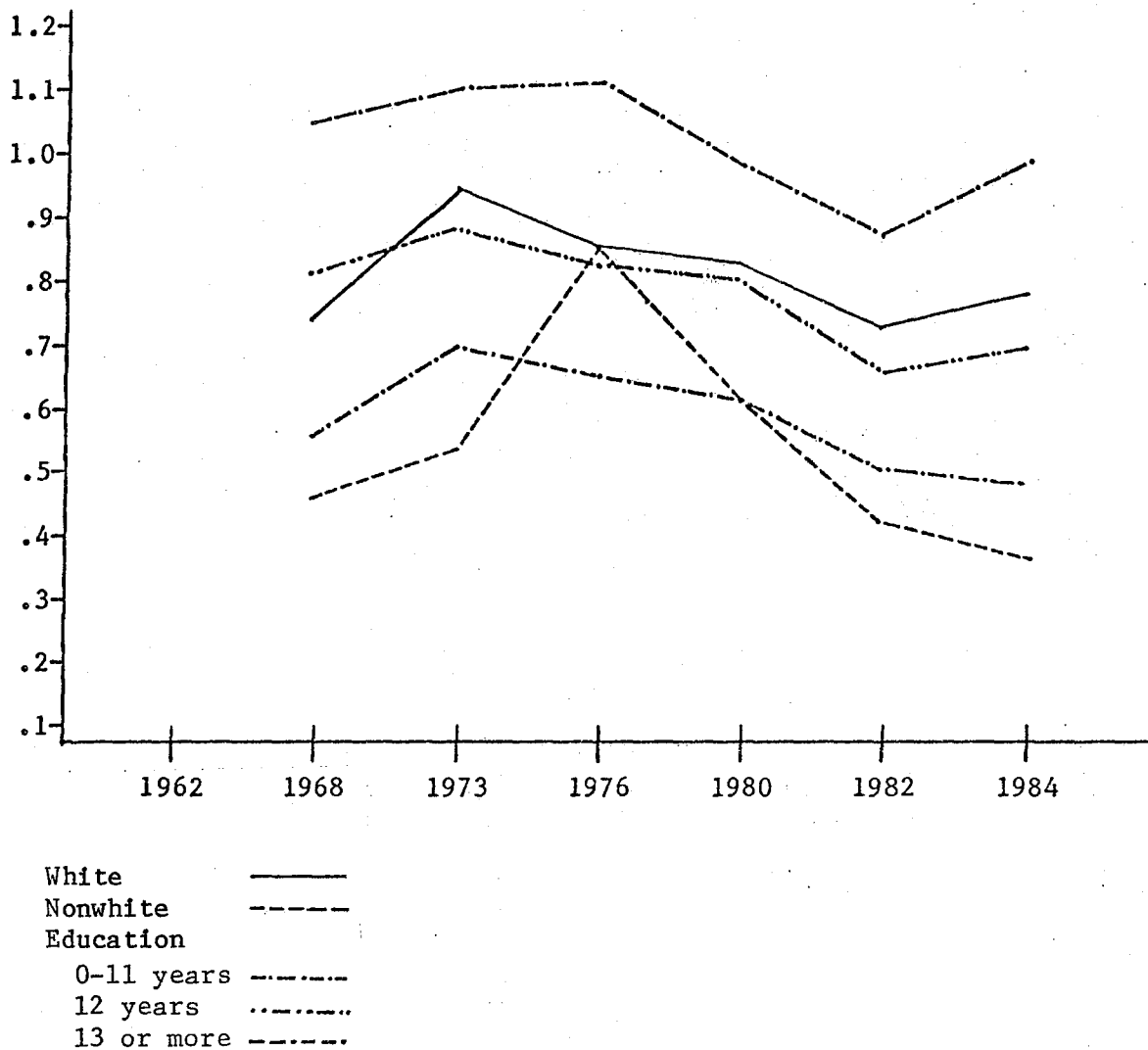
Ratio of Real Equivalent Family Income of Male Disabled,
by Age and Total, to Real Equivalent Family Income
of Nondisabled White Males in 1984



All ages ———
 18-34 - - - - -
 35-44 - · - · - ·
 45-54 - - - - -
 55-64 · · · · ·

Figure 7

Ratio of Real Equivalent Family Income of Male Disabled,
by Race and Education, to Real Equivalent Family Income
of Nondisabled White Males in 1984



otherwise occurred. In this section, we directly explore the pattern of income transfer reciprocity by the disabled over time, both absolutely and relative to earnings and the receipt of transfers by the nondisabled.

Table 16 presents the patterns of public transfer income reciprocity by the disabled male population, and for subgroups of disabled males over time. (Table D.4 of Appendix D presents analogous calculations for female disabled.) Several patterns can be observed in the table:

- . In 1968, real per person transfers to disabled persons averaged about \$2400, and there was little variance among the subgroups of the disabled.
- . By 1976, transfers had more than doubled to about \$5700 per disabled person. The variance among the subgroups increased as well, with older and nonwhite disabled receiving in excess of \$1000 more than the average.
- . The decrease in real transfers to the disabled after 1976 is substantial. On average, the reduction from 1976 to 1980 was about \$400; from 1980 to 1982, the reduction totaled about \$800 per individual, with a reduction over the entire period 1976-1982 of more than 20 percent.
- . After 1982, average transfers increased by about \$800 per individual, regaining their 1980 levels, but not their 1976 levels.
- . During the growth period from 1968 to 1976, the subgroups which gained the most were the young (an increase of 135 percent), those with low education (165 percent), and nonwhites (188 percent). These increases compare with an average increase of 137 percent.
- . The 1976 to 1982 period of retrenchment most heavily impacted the young, those with the most education, and nonwhites. The elimination from the Social Security Disability Insurance rolls of those with the least severe handicaps and those most likely to be able to secure employment is reflected in the pattern of decreases from 1980 to 1982. Workers below age 45 and those with 13 or more years of education experienced the greatest reduction in individual transfers.

(The patterns for female disabled shown in Appendix Table D.4 are similar.)

The data presented in Table 16 are also shown graphically in Figures 8 and 9. There, the increased variance among the groups from 1968 to

Table 16

Real Transfer Income of Disabled Males,
Overall and by Subgroup, 1962-1984, Various Years
(1983 dollars, in thousands)

	1962	1968	1973	1976	1980	1982	1984
<u>Age</u>							
18-34	NA	1.7	2.6	4.0	2.6	2.3	3.6
35-44	NA	2.3	2.9	5.0	5.1	3.8	4.5
45-54	NA	2.8	3.0	7.2	6.8	5.8	5.8
55-64	NA	2.7	4.3	6.8	7.7	6.6	7.9
<u>Years of education</u>							
0-11	NA	2.3	3.6	6.1	5.5	5.4	6.3
12	NA	2.5	2.7	5.2	5.4	5.1	4.6
13 or more	NA	2.5	3.0	5.4	5.7	2.9	5.2
<u>Race</u>							
Nonwhite	NA	2.4	3.2	6.9	5.8	4.6	5.2
White	NA	2.4	3.0	5.3	5.4	4.6	5.3
<u>All disabled^a</u>	NA	2.4	3.1	5.7	5.3	4.5	5.3

NA = Not available.

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

Figure 8

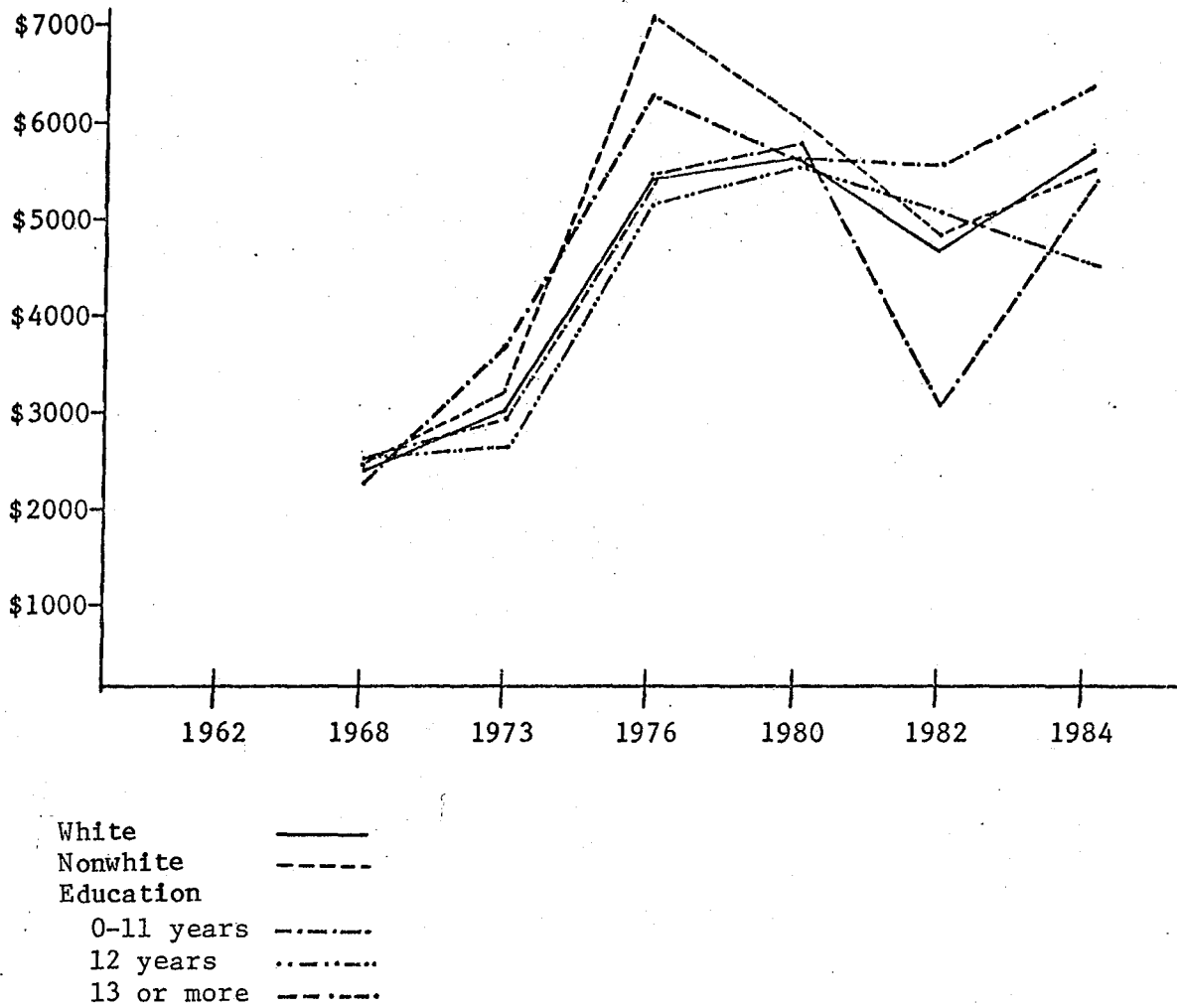
Real Transfer Income Received by Families of Disabled Males,
by Age and For All Ages, 1968-1984



All ages ———
 18-34 - - - - -
 35-44 - · - - -
 45-54 · - - - -
 55-64 - - - - -

Figure 9

Real Transfer Income Received by Families of Disabled
Males, by Race and Education, 1968-1984



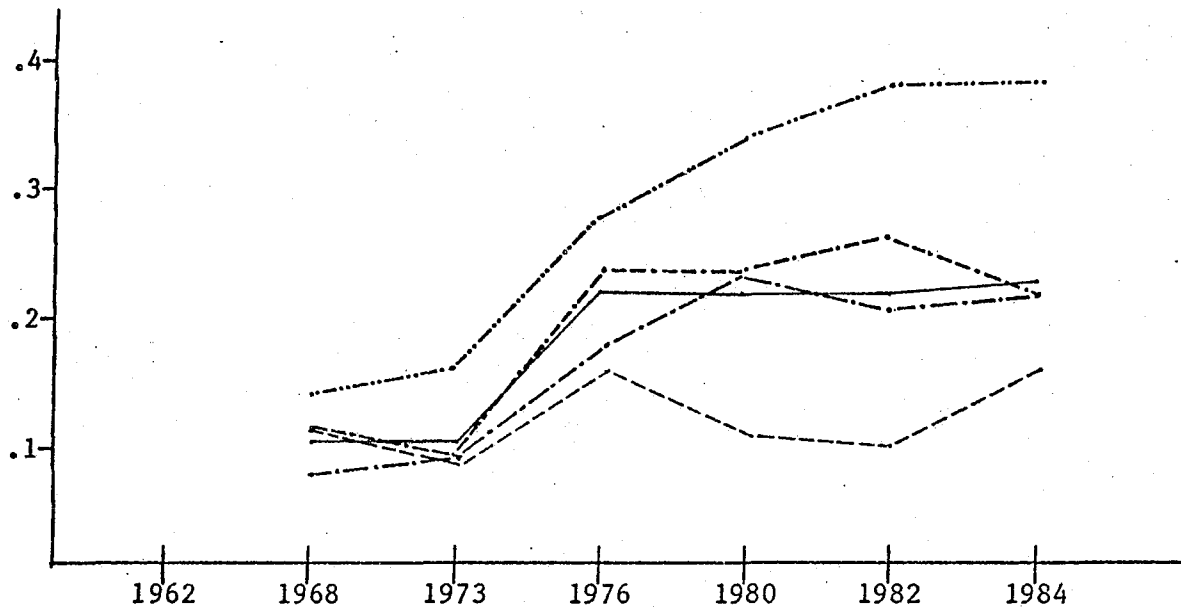
1984 is clearly seen. The stronger upward trend in benefits for the oldest age group relative to other groups also stands out, reflecting both the increase in early retirement from the 1960s to the 1980s and the ability of those with handicaps to substitute Social Security early retirement benefits for losses of disability benefits resulting from administrative discretion.

Figures 10 and 11 present these trends in real family transfers to families with disabled males, by subgroup, as a ratio of the total income of these families. These series are suggestive as indicators of the generosity of disability transfers. Moreover, to the extent that transfer benefit leniency and benefit generosity induce both (1) a reduction of earnings and other income as sources of support; and (2) accession of workers with health problems onto disability rolls (and, hence, into our disabled category), they also reflect labor supply and other substitutions in response to increased program generosity and leniency.

For the entire group of disabled, the ratio of transfers to total income stood at .11 in both 1968 and 1973. From 1973 to 1976, however, the ratio doubled to .22 and then remained constant at this level until 1984. The period of the early and middle 1970s, hence, appears to be one of rapid changes in the impact of disability transfer programs in providing income support to those with health problems. The pre-1975 regime is distinctly different from that of the post-1976 period. Aside from this apparent shift in regime for the entire group of the disabled, the trends for the nonwhite, age 55-64, and lowest education groups are noteworthy. For all of these groups, transfers to the families of

Figure 10

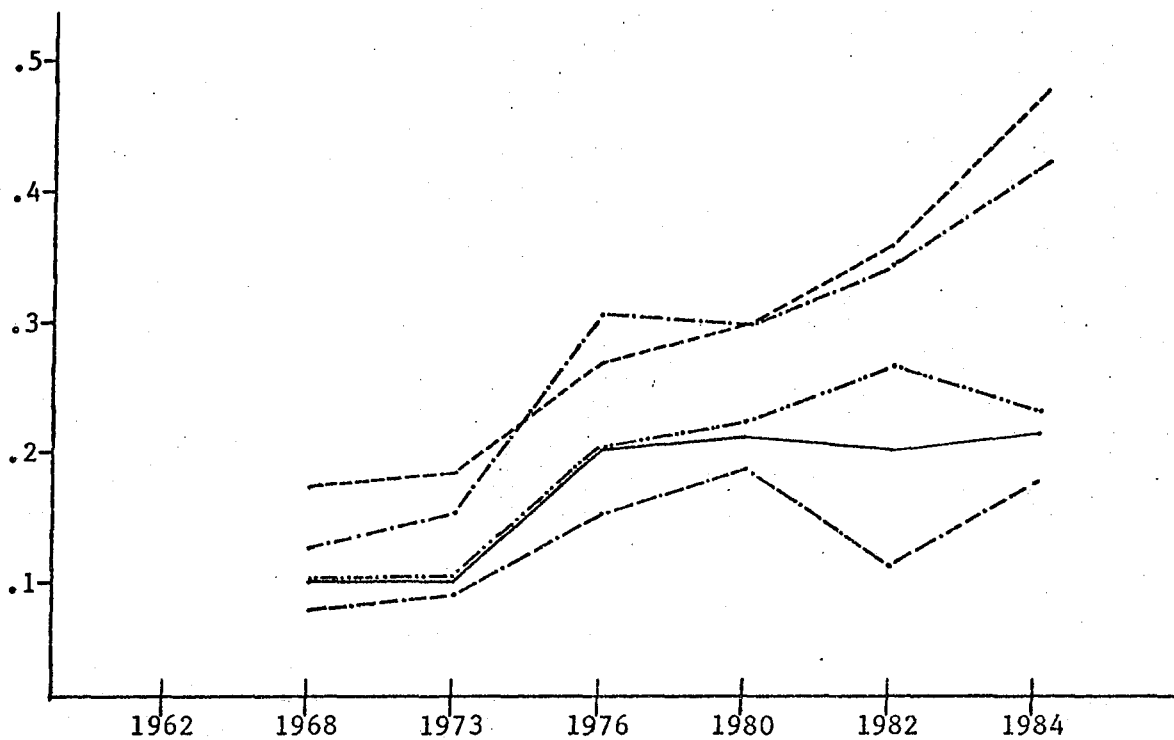
Ratio of Real Transfer Income Received by Families of Disabled Males to the Total Income of Families of Disabled Males, by Age and For All Ages, 1968-1984



All ages ———
 18-34 - - - -
 35-44 - - - -
 45-54 - - - -
 55-64 ······

Figure 11

Ratio of Real Transfer Income Received by Families of Disabled Males to the Total Income of Families of Disabled Males, by Race and Education, 1968-1984



White ———
 Nonwhite - - - -
 Education
 0-11 years - - - - -
 12 years ·····
 13 or more - - - - -

disabled males accounted for a steadily increasing share of the total incomes of these families. For nonwhites, the ratio grew from .17 to .47 over the 1968 to 1984 period; the growth in the ratio for the older group was from .15 to .36 and for the low-education group from .12 to .42. For these three groups, then, dependency on disability transfers over time has increased steadily and significantly. Three factors would appear to account for this pattern:

1. The growth in disability transfers themselves: For nonwhites, average real transfers rose from \$2400 in 1968 to \$6900 in 1976, falling off to \$5200 in 1984. For the group of disabled workers aged 55-64, transfers rose from \$2700 in 1968, to \$6800 in 1976 to \$7900 in 1984. For those with low education, the increase was from \$2300 in 1968 to \$6100 in 1976 to \$6300 in 1984.
2. The increased transfers appear to have replaced labor income to some extent.
3. Because of increased leniency in applying the eligibility rules of the program, individuals not qualifying for benefits in the pre-1973 period are likely to have qualified in the post-1976 period, leading to a changed composition of the disabled group, as we have defined it, over the period. In particular, some of those individuals accepted for benefits leave the nondisabled group for the group of the disabled, simultaneously removing low-earnings individuals from the nondisabled group while adding them to the disabled group. Distinguishing this compositional effect on the trends observed in our data is difficult.⁷

Figures 12 and 13 explore the implications of these rapidly growing transfers in yet another dimension. Financing these transfers falls on the able-bodied working population, hence, their level relative to the earnings of the nondisabled population is relevant. Equity also plays a role here. The continued support of transfer income growth for families with disabled persons depends upon how these families are faring economically, both in terms of work and transfers, relative to the able-bodied. Hence, these tables show the trend in real transfers to the families with

Figure 12

Ratio of Real Transfer Income Received by Families of Disabled Males to Real Earnings of Nondisabled White Males, by Age and For All Ages, 1968-1984

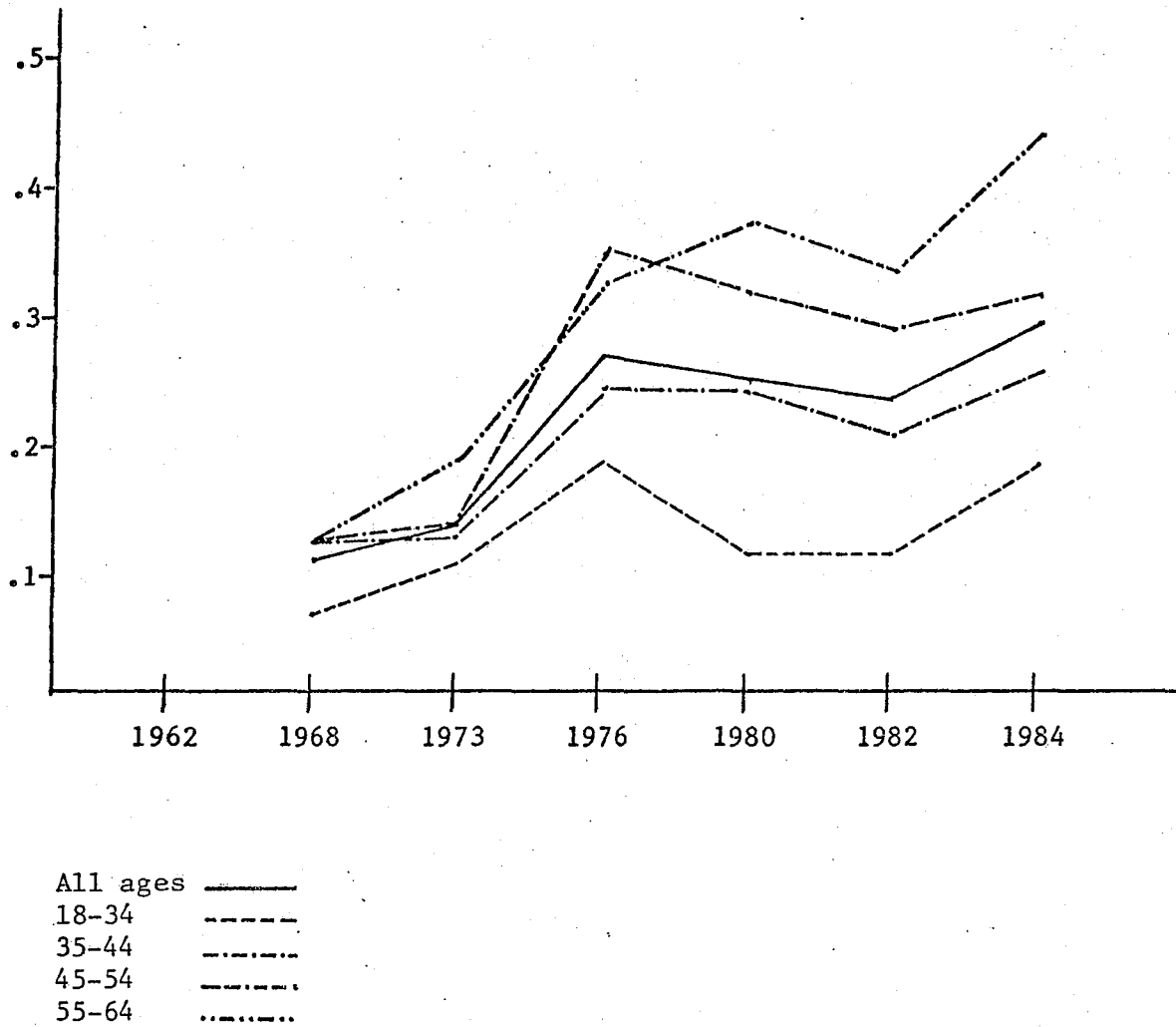
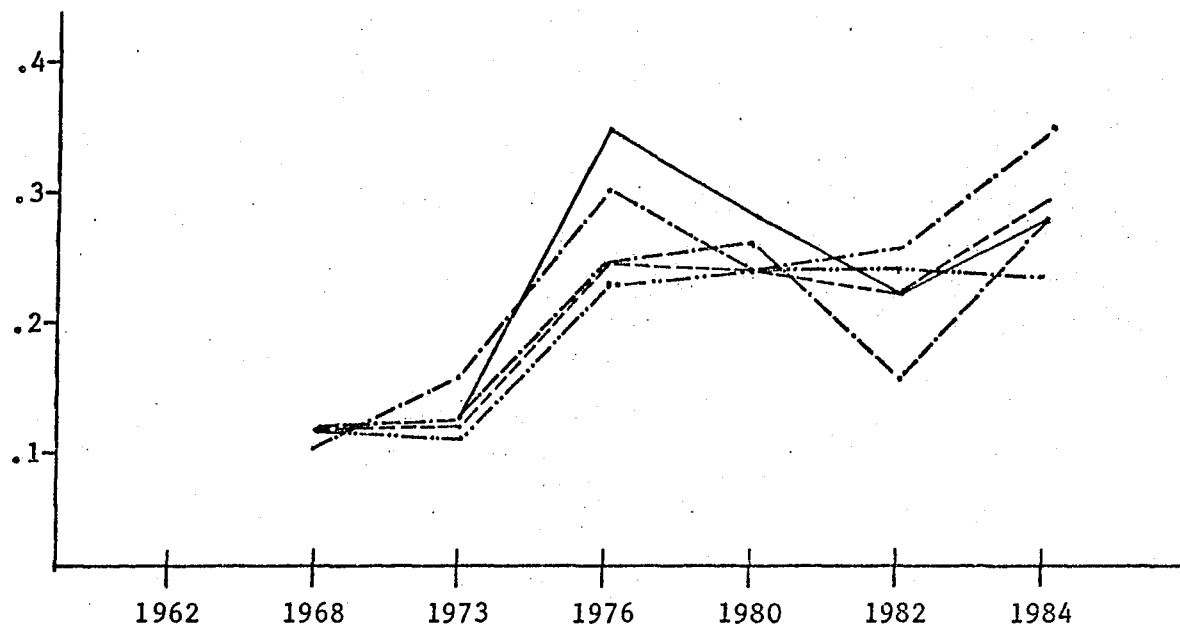


Figure 13

Ratio of Real Transfer Income Received by Families of Disabled Males to Real Earnings of Nondisabled White Males, by Race and Education, 1968-1984



White ———
 Nonwhite - - - -
 Education
 0-11 years ·····
 12 years ·····
 13 or more - - - -

disabled males relative to the earnings level of nondisabled white males over the period.

Overall, the families of disabled males received transfer income equal to about 11 percent of the earnings of nondisabled white males in 1968. This ratio increased to about 27 percent in 1976, and then, after dipping slightly, increased again to 29 percent in 1984. This increase--from 11 to 29 percent--is a rapid one, reflecting both the increasing generosity of disability transfer programs and the rather stagnant level of real earnings over the period. Again, the oldest age group (13 percent to 43 percent), nonwhites (12 percent to 29 percent), and those with low education (12 percent to 34 percent) showed the most sizable increases relative to the average real earnings of nondisabled white males.

A final comparison is presented in Table 17, where the transfer income received by families of disabled males is compared to transfer receipts of families of able-bodied males with the same characteristics, over time. These subgroup series indicate the generosity of disability transfers (or at least transfers to the disabled) relative to non-disability transfers. The overall trend shows a tendency for the disabled to be increasingly favored in terms of transfer income receipts relative to the nondisabled up to 1980. The retrenchment of 1980-1984, however, fell relatively more heavily on the disabled than on the able-bodied--the ratio fell from 3.8 to 3.2. This pattern occurred for all of the age groups and for some of the other subgroups as well. In 1984, all of the subgroups had a lower ratio than in 1968--indicating a somewhat reduced level of support of the disabled relative to the able-bodied over the entire 18-year period.

Table 17

Ratio of Real Transfer Income of Disabled Males Relative to
Nondisabled, Overall and by Subgroup, 1962-1984, Various Years

	1962	1968	1973	1976	1980	1982	1984
<u>Age</u>							
18-34	NA	2.55	2.60	2.64	2.51	2.20	2.52
35-44	NA	5.83	5.03	5.60	7.15	4.22	5.45
45-54	NA	5.96	3.54	4.37	5.68	4.75	4.68
55-64	NA	2.92	2.83	2.13	2.60	1.78	2.10
<u>Years of education</u>							
0-12	NA	3.86	3.97	3.02	4.06	4.04	3.13
13	NA	3.70	2.97	3.03	4.29	3.59	2.61
14 or more	NA	4.52	2.91	3.78	3.82	2.10	4.06
<u>Race</u>							
Nonwhite	NA	3.46	2.38	4.78	3.28	3.23	2.92
White	NA	4.00	3.42	3.15	4.34	3.30	3.44
<u>All disabled^a</u>	NA	3.71	3.27	3.24	3.75	3.27	3.19

NA = Not available.

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

IV. CONCLUSIONS

The percentage of the working age population who are disabled increased from the early 1960s to the mid-1970s. For the entire population, our definition of disability suggests an increase in the incidence of disability from 7 percent of the working-age population to about 11 percent in the mid-seventies, falling to about 9.5 percent in the period after 1980. In terms of work limitations, the percentage reported as disabled generally peaked in the early 1970s and then declined, especially for young men. According to the program-participation criterion, the peak year was 1980. After 1980 there was little decline in the disabled according to work limitations--and for the youngest age group of males (18-34) an increase. Thus, since 1980 the decline in the disabled population is dominated by the decline in program participation.

This pattern of disability incidence suggests the following links to policy: (1) Retrenchment efforts of the 1980s are reflected in the lower percentage of the population labeled disabled by the program-participation criterion. Disability itself, however, was not affected--there were no such declines in the percentage with self-reported work limitations. (2) The sharp decline in disability of young men in the 1970s according to the work-limitation criterion coincides with passage of and enforcement of occupational health and safety and environmental regulations.

Over the time period studied, nonwhites increased their probability of being disabled relative to whites; older workers also increased the probability of becoming disabled relative to other age groups; persons with more education were less likely to be disabled over the entire time

period. Over the period studied, the relationship between the unemployment rate and disability shifted. At first unemployment was positively associated with disability, presumably because those who couldn't get jobs attempted then to get disability benefits, or because there was an increase in leniency in program participation in periods of high unemployment, or because it was more acceptable to call oneself disabled than unemployed. As unemployment benefits increased and the stigma of being unemployed lessened, unemployment became negatively associated with disability.

The real earnings of disabled men increased from 1962 to the mid-1970s and then plummeted through 1982. Nonwhite disabled men had very low earnings throughout the period and also experienced the greatest decline in earnings--from \$3700 in 1962 to a maximum of \$8300 in 1973 down to \$2100 in 1984 (in constant dollars). Middle-aged, highly educated and white males had higher earnings than other groups. Among disabled women, the time-earnings pattern is relatively constant except for older women and those with low education. These experienced a steady decrease in earnings.

From the early 1960s to mid-1970s the ratio of earnings of the disabled to the nondisabled increased, providing evidence of a narrowing of the gap between the disabled and nondisabled. After this period, the trend reversed, suggesting instead a pulling apart of the disabled from the able-bodied.

Family adjusted income (equivalent income) of the disabled generally follows the same sort of pattern--an increase through the mid-1970s and then a decline. There has been an increase in inequality among the

disabled over time according to this equivalent income measure, just as there was using other income measures. Disabled persons who are nonwhite and those with low education live in families with substantially lower adjusted incomes than those of the average disabled person. As of 1984, disabled nonwhites lived in families whose equivalent income is less than 50 percent of that of the average family of a disabled person. Comparing the disabled to white able-bodied males tells a similar story: an improvement in the relative well-being of the disabled from the 1960s to mid-1970s, and then a falloff in relative well-being of the disabled, with an especially large dip in 1982 caused by the recession and transfer income reductions. Once again in this comparison, the level of well-being of nonwhites fell even faster.

Transfers make up for much of the difference between the increasingly declining earnings of the disabled and the relative improvement in equivalent income. In real terms, transfer income per disabled male increased from \$2400 in 1968 to \$5700 in 1976. From 1976 to 1982, however, transfers decreased by more than 20 percent. The biggest increases were targeted on those who needed them most--nonwhites and those with low education. The retrenchments of 1976 to 1982 impacted nonwhites especially. Increasing benefits were paid to the older and the lowest educated groups.

All of this suggests that (1) the disabled account for nearly 10 percent of the working-age population, down from the 1960s but stable since 1980. Work limitations declined during the period but have not declined since 1980. The percentage disabled seems to be influenced by policy efforts to improve workplace health and safety and the environment, as

well as the leniency of program participation. The unemployment rate generally does not seem to influence the percentage defined as disabled. (2) Over time, the probability that nonwhites and the elderly working-age populations will be disabled has increased. Those with high education continued to be less likely to be disabled. (3) The earnings of the disabled initially increased over the period studied, and then decreased. There is a pattern of pulling apart in income among the disabled as well as a pulling apart of the disabled from the able-bodied since the mid-1970s. (4) Transfers have been targeted at those with lowest earnings--the disabled in general and nonwhites as well as those with low education. Since the retrenchment of the 1980s, however, transfers have declined, especially for nonwhites. The older working-age population has had increasing transfers throughout the period. (5) Using equivalent income shows largely the same story--the disabled are better off by this measure than earnings, since it includes transfers as well as income of others in the family unit. However, since the late 1970s, certain groups have done worse than average--especially nonwhites and those disabled who have little education.

Notes

¹For selected years and programs, our tabulations for specific programs (CPS) can be compared with published participation numbers.

	Program					
	SSI		SSDI		Total	
	CPS	Program Participants	CPS	Program Participants	CPS	Program Participants
1968	1.2	.7	1.2	1.2	2.4	1.9
1973	1.9	1.1	1.4	1.7	3.3	2.7
1976	1.2	1.7	1.8	2.1	3.0	3.8
1980	1.0	1.7	2.6	2.1	3.6	3.8
1982	1.2	1.6	2.4	1.8	3.6	3.3

The CPS totals show more constancy over time than do the program participation figures, probably reflecting inaccuracies in the CPS responses in the early years. Moreover, there is likely to be substantial respondent error in distinguishing SSI from SSDI benefits.

²The proportion of those removed from the rolls in the early 1980s who ultimately found work is believed to be very small. See Tretel (1976); and Bound (1985).

³Average real gross weekly earnings over the 1962-1984 period were nearly constant at about \$300 (\$1985). They had increased nearly \$350 in 1973, but fell substantially after that year.

⁴A portion of this growth in the ratio in the latter period is due to the rapid decrease in labor earnings rather than growth in total non-earned (or transfer) incomes. Later, we will investigate the pattern of earnings growth for the disabled.

⁵Equivalent family income is the income of the household in which a person lives adjusted to reflect the number and composition of individuals in the household. The ratio of the Orshansky poverty line for a family of each size to that for a family of four is multiplied by actual household income for both disabled and nondisabled.

⁶The equivalent family income value could not be calculated for the 1962 Current Population tape, as family size is not available.

⁷Longitudinal data would be necessary to separate this effect from the reduced labor supply response mentioned in 2.

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Appendix A: The Disabled Working-Age Population, 1962-1984:
Definitions and Detailed Estimates

Appendix A

Definition of Disabled

Two sets of criteria are used to designate persons disabled or not disabled for this study: program participation and work limitations. Program participation includes programs that provide transfers to the disabled: Social Security Disability Program (SSDP), Supplemental Security Income-Disabled (SSI-D), Railroad retirement program benefits for those disabled, and worker's compensation. Work limitation is defined to include those unable to work or unable to work full year, full time, due to poor health. Persons designated disabled by either criterion (or both) make up the overall disabled group. The exact definitions for each criteria are in Table A.1 below.

Table A.1

Year	Program Participation	Work Limitations
1962	<ol style="list-style-type: none"> 1. Receives social security, is not in school and is between 19 and 61 or receives social security, is in school and is between 23 and 61. 2. Receives social security (and other unearned income) is not currently working and reason not working is ill or unable to work; or receives social security (and other unearned income) and is a male currently working \leq 10 hours per week. 	<ol style="list-style-type: none"> 1. Employment status or major activity = unable to work or main reason not working is ill. 2. Work < 35 hours and reason for part-time work = own illness or reason work part year = own illness. 3. Have job, but not working and reason not working is own illness.
1968	<ol style="list-style-type: none"> 1. Receives social security or railroad retirement benefits, is not in school, and is between 19 and 59, and is not a widow with a dependent child, or receives social security, is in school and is between 23 and 59. 2. Receives welfare/public assistance excluding those whose marital status is separated, widowed, or divorced, or other with dependent children and excluding those unemployed during year. 3. Worker's compensation: Receives unearned income from unemployment compensation, worker's compensation, government employee pension, or veteran's benefits; and (a) employment status or major activity = unable, or (b) reason not working, working part year is own illness, and (c) not unemployed during year, not in government work. 4. Veteran's disability benefits: Receives unearned income from unemployment compensation, worker's compensation, government employee pension, or veteran's benefits; is a veteran and was not unemployed, in school, or a government worker. 	<ol style="list-style-type: none"> 1. Employment status or major activity = unable to work. 2. Work < 35 hours and reason for part-time work = own illness or reason work part year = own illness. 3. Have job, but not working and reason not working is own illness.

Table A.1 continued

Year	Program Participation	Work Limitations
1973	<ol style="list-style-type: none"> 1. Receives social security or railroad retirement benefits, is not in school, is between 19 and 59, and is not a widow with a dependent child, those 23 and over may be in school. 2. Receives welfare/public assistance excluding those whose marital status is separated, widowed, divorced or other with dependent children and excluding those unemployed during year. 3. Receives worker's compensation. 4. Receives veteran's disability benefits and is a veteran and not in school. 	<ol style="list-style-type: none"> 1. Employment status or major activity = unable to work. 2. Work < 35 hours and reason for part-time work = own illness or reason work part year = own illness. 3. Have job, but not working and reason not working is own illness.
1976, 1980, 1982, 1984	<ol style="list-style-type: none"> 1. Receives social security or railroad retirement benefits, is not in school, is between 19 and 59, and is not a widow with a dependent child. Those 23-59 may be in school. 2. Receives SSI. 3. Receives worker's compensation. 4. Receives veteran's disability benefits, is a veteran, and is not in school. 	<ol style="list-style-type: none"> 1. Employment status or major activity = unable to work. 2. Works < 35 hours and reason for part-time work = own illness or reason work part year = own illness. 3. Have job, but not working and reason not working is own illness.

Table A.2

Percentage of Working Age Population Disabled,
by Detailed Criterion and Sex, 1962-1984, Various Years

	1962			1968			1973			1976			1980			1982			1984		
	M.	F.	All	M.	F.	All	M.	F.	All	M.	F.	All	M.	F.	All	M.	F.	All	M.	F.	All
<u>Program participation</u>																					
SSI	NA	NA	NA	1.1	1.3	1.2	1.4	2.3	1.9	1.2	1.2	1.2	.7	1.3	1.0	.8	1.6	1.2	1.1	1.3	1.2
SSDI	NA	NA	NA	1.4	1.1	1.2	1.5	1.4	1.4	1.8	1.7	1.8	2.3	2.8	2.6	2.2	2.7	2.4	1.8	2.2	2.0
WC	NA	NA	NA	NA	NA	NA	1.6	.4	.9	1.9	.5	1.2	2.4	1.1	1.7	1.9	1.1	1.5	2.0	1.1	1.6
VET	NA	NA	NA	5.2 ^a	.9 ^a	2.9 ^a	4.5	--	2.1	4.5	--	2.1	3.4	--	1.6	2.7	--	1.3	2.1	--	1.0
All programs	4.8	1.0	2.0	7.2	3.2	5.1	8.3	4.0	6.0	8.4	3.2	5.7	8.1	4.9	6.5	6.9	5.0	6.0	6.5	4.5	5.4
<u>Work limitation</u>																					
NOIWORK	2.2	1.7	2.0	3.2	2.4	2.8	3.5	3.3	3.4	6.2	3.5	4.8	4.3	3.7	4.0	4.0	3.5	3.7	4.1	3.4	3.8
LESSWORK	3.8	2.6	3.2	5.6	3.7	4.6	4.5	3.5	3.9	2.7	1.6	2.2	2.3	2.6	2.5	2.3	2.3	2.3	2.5	2.3	2.4
All work limitations	6.0	4.3	5.1	8.4	6.1	7.2	7.7	6.7	7.2	8.9	5.1	6.9	6.5	6.2	6.4	6.3	5.7	6.0	6.6	5.7	6.2
All disabled ^b	9.5	4.8	7.0	13.0	8.2	10.5	12.8	9.5	11.0	14.6	7.5	10.9	11.9	9.6	10.7	10.6	9.1	9.8	10.5	8.6	9.5

NA = Not available; M. = Male; F. = Female.

-- = Not applicable.

^aWC plus VET.
^bUsing either criterion or both.

Appendix B: Logit Estimates of the Determinants of Disability
Status, Males and Females, 1962-1984

Table B.1

Logit Estimates of the Determinants of Disability Status,
Males, 1962-1984, Various Years
(standard error in parentheses)

	1962	1968	1973	1976	1980	1982	1984
Constant	-.515 (.034)	-1.993 (.553)	-.667 (.5509)	-3.27 (.42)	-.75 (.64)	-1.97 (.88)	-1.74 (0.67)
Race (white = 1)	.214* (.011)	.384* (.161)	.086 (.144)	-.45* (.12)	-.304* (.135)	-.35* (.18)	-0.26 (0.14)
Age	-.022* (.009)	.013 (.014)	.0239 (.013)	.056* (.012)	.017 (.014)	.056* (.02)	0.053* (0.015)
Age spline 35	.043* (.013)	.0016 (.02)	-.022 (.019)	-.05* (.018)	-.02 (.02)	-.038 (.029)	-0.05* (0.02)
Age spline 54	-.076 (.022)	.018 (.027)	.0239 (.0289)	.13* (.025)	.07* (.03)	.036 (.042)	0.07* (0.03)
Education	-.107* (.006)	-.042* (.052)	-.311* (.0536)	-.02* (.007)	-.18* (.06)	-.15* (.08)	-0.21* (0.06)
Education square	.013 (.006)	.0006 (.023)	.0079 (.0023)	.0001 (.00006)	.0014 (.0027)	.00005 (.0036)	0.0005 (0.003)
Never married	-.724* (.016)	.322* (.141)	.1791 (.1455)	.85* (.12)	.23 (.14)	1.148* (.211)	0.642* (0.15)
Widower	.242* (.014)	.753* (.149)	.6583* (.1442)	.65* (.13)	.78* (.14)	.554* (.217)	0.66* (0.15)
Veteran status	NA	.444* (.100)	.749* (.102)	.47* (.09)	.93* (.11)	.59* (.16)	0.67* (0.12)
Unemployment rate	4.565* (.286)	16.21* (4.92)	.9648 (4.078)	-2.47 (3.01)	-2.39 (2.82)	-5.009 (3.452)	2.17 (1.73)
	634,700	3,573	3,417				
	3,224	3,774	2,924				

NA = Not available.

*Statistically significant at .05 level.

Table B.2

Logit Estimates of the Determinants of Disability Status,
Females, 1962-1984, Various Years
(standard error in parentheses)

	1962	1968	1973	1976	1980	1982	1984
Constant	-1.14 (.362)	-1.271 (.566)	.713 (.565)	-5.34 (.714)	-1.261 (.622)	-2.302 (.659)	-2.997 (.678)
Race (white = 1)	-.23* (.11)	-.568* (.129)	-.474* (.131)	-.458 (.179)	-.459* (.130)	-.178 (.143)	-.024 (.14)
Age	.229* (.01)	.0305* (.014)	.006 (.014)	.0838* (.0209)	.031* (.016)	.051* (.015)	.054* (.016)
Age spline 35	-.019 (.015)	-.013 (.022)	.0068 (.0223)	-.027 (.031)	.009 (.02)	.009 (.023)	-.052* (.024)
Age spline 54	-.046* (.026)	-.074* (.03)	.03 (.03)	-.085* (.041)	-.055 (.031)	-.082* (.032)	.094* (.022)
Education	-.119 (.07)	-.134* (.063)	-.283* (.068)	-.02* (.01)	-.266* (.063)	-.141* (.068)	-.117* (.073)
Education square	.014* (.007)	-.005 (.03)	.005 (.003)	.0002 (.001)	.005 (.003)	-.0016 (.0031)	-.0019 (.0032)
Never married	-.376* (.164)	.84* (.16)	.743* (.157)	1.571* (.214)	.835* (.172)	.723* (.174)	.79* (.18)
Widow	.114 (.111)	.919* (.119)	.772* (.121)	.933* (.1681)	1.083* (.12)	.892* (.121)	.926* (.126)
Presence of children	-.139 (.491)	-.155 (.04)	-.097 (.04)	.055 (.056)	.055 (.044)	.008 (.045)	.004 (.005)
Unemployment rate	-4.04 (3.69)	-.029 (5.58)	-12.4* (4.694)	-6.325 (5.004)	2.301 (3.054)	-.4 (2.5)	3.923* (1.730)
	4,115	3,002	2,921				
	3,553	4,264	3,333				

*Statistically significant at .05 level.

Table B.3

Definition of Variables

Race	=	1 White 0 Otherwise
Age spline 35	=	Age -35, if age > 35; otherwise, 0
Age spline 54	=	Age -54, if age > 54; otherwise, 0
Never married	=	1 Never married 0 Otherwise
Widowed	=	1 If widowed, divorced, separated 0 Otherwise
Veteran status	=	1 If Veteran 0 Otherwise
Education	=	Years of education
Unemployment rate	=	Unemployment rate in state in which respondent lives

Appendix C: Detailed Earnings and Income of Disabled and
Nondisabled Males, by Subgroup, 1962-1984

Table C.1

Earnings and Income of Disabled and Nondisabled Males, by Subgroup, 1962-1984, Various Years
(Ratios of disabled to nondisabled in parenthesis)

	1962	1968	1973	1976	1980	1982	1984
<u>Age 18-34</u>							
<u>Earnings</u>							
Disabled	11,062 (.87)	12,115 (.83)	14,690 (.88)	14,369 (1.00)	14,008 (.91)	10,587 (.77)	8,823 (.69)
Nondisabled	12,610	14,564	16,514	14,287	15,367	13,682	12,762
<u>Total individual income</u>							
Disabled	11,601 (.89)	13,275 (.89)	16,805 (.99)	17,267 (1.15)	16,466 (1.02)	13,703 (.87)	11,206 (.83)
Nondisabled	12,953	14,821	16,950	14,906	16,048	14,455	13,478
<u>Equivalent family total income</u>							
Disabled	NA	24,621 (.85)	26,855 (.85)	25,079 (.72)	24,385 (.77)	24,475 (.87)	21,851 (.76)
Nondisabled		28,888	32,176	30,402	31,557	28,087	28,584
<u>Age 35-44</u>							
<u>Earnings</u>							
Disabled	11,771 (.58)	15,666 (.61)	19,626 (.66)	17,898 (.67)	11,634 (.42)	10,216 (.38)	11,252 (.46)
Nondisabled	20,069	25,560	29,631	26,493	27,060	26,653	24,270
<u>Total individual income</u>							
Disabled	13,006 (.62)	17,930 (.69)	22,057 (.72)	22,278 (.80)	16,433 (.58)	13,779 (.49)	14,922 (.58)
Nondisabled	20,705	25,960	30,317	27,550	27,880	27,675	25,380
<u>Equivalent family total income</u>							
Disabled	NA	24,988 (.80)	28,567 (.77)	28,255 (.84)	22,363 (.62)	18,159 (.50)	20,922 (.62)
Nondisabled		31,132	37,043	33,588	35,633	35,850	33,627

-Table continues-

Table C.1 Continued

	1962	1968	1973	1976	1980	1982	1984
<u>Age 45-54</u>							
<u>Earnings</u>							
Disabled	10,596 (.56)	14,069 (.55)	18,140 (.65)	14,262 (.33)	14,181 (.55)	7,532 (.30)	13,196 (.53)
Nondisabled	18,891	35,152	27,779	28,068	25,524	24,842	24,883
<u>Total individual income</u>							
Disabled	12,111 (.58)	17,068 (.65)	21,419 (.75)	14,023 (.46)	19,758 (.73)	12,953 (.49)	17,550 (.67)
Nondisabled	20,562	25,969	29,157	29,991	26,785	26,145	26,182
<u>Equivalent family total income</u>							
Disabled	NA	23,302 (.70)	29,552 (.77)	29,956 (.75)	29,953 (.77)	21,090 (.56)	26,159 (.69)
Nondisabled		33,205	38,100	39,491	38,788	37,456	37,705
<u>Age 55-65</u>							
<u>Earnings</u>							
Disabled	7,172 (.44)	9,008 (.44)	14,231 (.60)	10,465 (.49)	7,352 (.34)	5,112 (.20)	6,716 (.37)
Nondisabled	16,220	20,377	23,667	21,179	21,622	20,496	17,806
<u>Total individual income</u>							
Disabled	9,247 (.52)	12,165 (.55)	18,686 (.70)	17,062 (.60)	14,445 (.57)	11,776 (.47)	14,047 (.63)
Nondisabled	17,475	22,096	26,529	24,995	25,130	24,969	22,262
<u>Equivalent family total income</u>							
Disabled	NA	18,032 (.62)	26,543 (.76)	24,003 (.70)	23,346 (.67)	18,472 (.54)	21,983 (.71)
Nondisabled							

-Table continues-

Table C.1 Continued

	1962	1968	1973	1976	1980	1982	1984
<u>Total</u>							
<u>Earnings</u>							
Disabled	10,303	13,165	16,474	13,214	11,706	9,519	9,615
	(.61)	(.66)	(.74)	(.66)	(.58)	(.51)	(.54)
Nondisabled	16,443	19,966	22,281	20,074	20,070	18,763	17,799
<u>Total individual income</u>							
Disabled	11,548	15,639	17,482	17,378	16,505	14,622	13,843
	(.65)	(.76)	(.84)	(.81)	(.78)	(.73)	(.72)
Nondisabled	17,725	20,511	23,291	21,495	21,265	30,032	19,159
<u>Equivalent family total income</u>							
Disabled	NA	22,356	27,827	26,473	24,823	20,836	22,576
		(.74)	(.80)	(.80)	(.73)	(.66)	(.72)
Nondisabled	NA	30,190	34,622	33,109	33,896	31,794	31,295
<u>Education 0-11 years</u>							
<u>Earnings</u>							
Disabled	8,784	9,981	11,807	5,497	6,893	3,816	3,703
	(.58)	(.62)	(.67)	(.36)	(.46)	(.29)	(.32)
Nondisabled	14,971	16,018	17,578	15,191	14,719	12,823	11,251
<u>Total individual income</u>							
Disabled	9,983	12,100	14,886	9,719	11,441	8,255	8,343
	(.64)	(.73)	(.81)	(.58)	(.73)	(.59)	(.67)
Nondisabled	15,554	16,391	18,267	16,496	15,600	13,948	12,360
<u>Equivalent family total income</u>							
Disabled	NA	18,241	22,207	20,216	18,793	16,072	14,889
		(.78)	(.81)	(.78)	(.75)	(.70)	(.72)
Nondisabled		23,272	27,095	25,856	24,914	22,771	20,658

-Table continues-

Table C.1 Continued

	1962	1968	1973	1976	1980	1982	1984
<u>Education 12 years</u>							
<u>Earnings</u>							
Disabled	11,198 (.76)	15,433 (.77)	16,362 (.75)	12,379 (.65)	11,850 (.62)	7,779 (.44)	8,858 (.57)
Nondisabled	14,725	19,786	21,748	18,787	19,088	17,400	15,346
<u>Total individual income</u>							
Disabled	13,333 (.85)	18,175 (.89)	18,847 (.82)	16,248 (.80)	17,076 (.85)	12,350 (.67)	12,422 (.75)
Nondisabled	15,557	20,321	22,738	20,118	19,979	18,396	16,515
<u>Equivalent family total income</u>							
Disabled	NA	25,919 (.88)	27,848 (.84)	26,263 (.84)	25,202 (.76)	20,541 (.69)	21,045 (.74)
Nondisabled		29,395	33,098	31,243	33,100	29,752	28,381
<u>Education 13 or more years</u>							
<u>Earnings</u>							
Disabled	18,724 (.85)	16,865 (.69)	22,481 (.85)	22,498 (.93)	16,838 (.70)	14,532 (.64)	15,571 (.71)
Nondisabled	21,801	24,412	26,267	24,087	23,759	22,479	21,673
<u>Total individual income</u>							
Disabled	20,059 (.85)	19,718 (.77)	25,983 (.94)	27,709 (1.08)	21,453 (.84)	18,791 (.77)	20,240 (.86)
Nondisabled	23,496	25,372	27,533	25,645	25,393	24,255	23,291
<u>Equivalent family total income</u>							
Disabled	NA	33,110 (.78)	34,910 (.83)	34,817 (.89)	31,103 (.79)	27,780 (.75)	30,970 (.83)
Nondisabled		38,398	41,655	39,067	39,324	36,984	36,988

-Table continues-

Table C.1 Continued

	1962	1968	1973	1976	1980	1982	1984
<u>Race nonwhite</u>							
<u>Earnings</u>							
Disabled	3,702 (.37)	6,901 (.55)	8,331 (.53)	6,702 (.47)	6,075 (.47)	3,226 (.25)	2,062 (.15)
Nondisabled	9,893	12,329	15,712	14,010	12,900	12,590	13,570
<u>Total individual income</u>							
Disabled	4,925 (.47)	8,758 (.69)	10,335 (.64)	9,971 (.68)	9,730 (.71)	6,732 (.50)	5,884 (.40)
Nondisabled	10,346	12,670	16,109	14,617	13,605	13,334	14,376
<u>Equivalent family total income</u>							
Disabled	NA	14,376 (.68)	17,002 (.64)	26,471 (1.05)	19,076 (.76)	13,076 (.55)	11,125 (.40)
Nondisabled		20,858	26,217	25,086	25,036	23,654	27,647
<u>Race white</u>							
<u>Earnings</u>							
Disabled	11,202 (.65)	13,460 (.64)	17,978 (.78)	13,989 (.67)	12,617 (.59)	9,212 (.46)	11,131 (.60)
Nondisabled	17,066	20,911	23,045	20,853	21,107	19,854	18,361
<u>Total individual income</u>							
Disabled	12,474 (.69)	15,952 (.73)	21,171 (.87)	18,639 (.83)	17,608 (.78)	13,830 (.64)	15,441 (.77)
Nondisabled	17,935	21,562	24,126	22,373	22,373	21,324	19,818
<u>Equivalent family total income</u>							
Disabled	NA	23,522 (.75)	29,833 (.83)	26,493 (.77)	25,789 (.73)	22,491 (.68)	24,873 (.78)
Nondisabled		31,340	35,603	34,158	35,202	33,054	31,862

NA = Not available.

Appendix D: Earnings and Incomes of Disabled Females, by Subgroup
and Relative to Nondisabled Females, 1962-1984

Table D.1

Real Earnings of Disabled Females, Overall
and by Subgroups, 1962-1984, Various Years
(1983 dollars, in thousands)

	1962	1968	1973	1976	1980	1982	1984
<u>Age</u>							
18-34	4.2	4.4	4.6	4.8	5.5	6.5	6.8
35-44	6.3	5.7	5.7	5.4	5.2	7.4	6.5
45-54	3.4	4.8	4.7	2.3	4.7	5.0	3.4
55-64	2.9	2.6	3.1	.7	2.0	1.8	2.3
<u>Years of education</u>							
0-11	3.5	2.8	2.9	1.4	2.8	1.7	1.8
12	3.8	6.0	4.8	3.4	4.7	5.0	4.6
13 or more	NA	7.6	7.2	7.4	7.3	10.4	8.5
<u>Race</u>							
Nonwhite	2.3	2.6	2.8	2.5	3.1	3.9	3.2
White	4.7	4.8	4.9	3.6	4.5	5.5	5.1
<u>All disabled^a</u>	4.1	4.4	4.5	3.4	4.2	5.1	4.7

NA = Not available.

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

Table D.2

Ratio of Real Earnings of Disabled to Nondisabled Females,
by Subgroup, 1962-1984, Various Years

	1962	1968	1973	1976	1980	1982	1984
<u>Age</u>							
18-34	1.45	1.08	.85	.94	.84	1.06	1.05
35-44	1.53	1.17	.97	.84	.72	.92	.71
45-54	.84	.83	.69	.62	.66	.65	.41
55-64	.89	.51	.52	.13	.34	.41	.44
<u>Years of education</u>							
0-11	1.12	.89	.80	.38	.77	.50	.54
12	1.14	1.20	.79	.63	.73	.83	.73
13 or more	2.68	1.15	.93	.93	.86	1.22	.86
<u>Race</u>							
Nonwhite	.88	.58	.41	.41	.43	.58	.42
White	.93	1.03	.72	.95	.74	.99	.69
<u>All disabled^a</u>	1.18	.92	.76	.59	.63	.80	.65

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

Table D.3

Real Equivalent Family Income of Disabled Females,
Overall and by Subgroup, 1962-1984, Various Years
(1983 dollars, in thousands)

	1962	1968	1973	1976	1980	1982	1984
<u>Age</u>							
18-34	NA	20.6	23.2	21.5	23.0	20.4	24.9
35-44	NA	22.3	27.2	21.9	20.0	24.1	27.3
45-54	NA	21.2	27.2	20.7	19.8	25.3	16.9
55-64	NA	16.1	21.1	12.6	14.7	16.9	14.2
<u>Years of education</u>							
0-11	NA	15.5	17.7	13.4	14.9	15.4	12.3
12	NA	25.4	26.6	21.5	20.1	20.8	24.4
13 or more	NA	27.8	34.0	22.9	30.6	31.5	25.1
<u>Race</u>							
Nonwhite	NA	13.4	14.9	11.0	14.6	14.4	14.8
White	NA	21.9	26.5	19.8	20.6	23.3	22.1
<u>All disabled^a</u>	NA	20.1	24.3	18.3	19.2	21.5	20.3

NA = Not available.

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.

Table D.4

Real Transfer Income of Disabled Females,
Overall and by Subgroup, 1962-1984, Various Years

	1962	1968	1973	1976	1980	1982	1984
<u>Age</u>							
18-34	NA	2.9	2.8	4.1	4.7	4.1	3.0
35-44	NA	2.0	3.2	6.1	6.2	4.5	5.8
45-54	NA	2.8	3.2	6.5	5.6	5.0	3.8
55-64	NA	3.5	3.5	6.2	5.7	6.2	6.4
<u>Years of education</u>							
0-11	NA	2.9	3.8	5.2	5.5	4.8	5.1
12	NA	2.5	2.8	5.8	5.4	5.2	4.8
13 or more	NA	3.4	2.0	6.1	5.7	5.3	3.8
<u>Race</u>							
Nonwhite	NA	2.9	3.7	5.9	5.8	5.3	4.9
White	NA	2.6	3.0	4.7	5.4	4.5	3.8
<u>All disabled^a</u>	NA	2.8	3.1	5.3	5.4	4.6	5.3

NA = Not available.

^aUsing the self-reported work limitation criterion or/and the receipt of disability benefits.