
Receipt of Multiple Benefits by Disabled-Worker Beneficiaries

by L. Scott Muller*

In 1971, 44 percent of workers who had been currently entitled to social security disability insurance (DI) benefits for 1 year or more also received benefits from at least one other source. Their average disability insurance benefit was higher than that of persons who received only DI benefits. On the average, total benefits to those receiving multiple benefits were double the amounts paid to those receiving only DI benefits. The combined benefits for the former produced median replacement rates about 50 percent larger than the median replacement rates for the latter. High replacement rates—defined here as more than 80 percent of predisability earnings replaced by benefits—predominate among those with multiple benefits.

Considering replacement rates based solely on disability insurance benefits substantially understates the extent to which benefits from public and private programs actually replace predisability earnings. Replacement rates based solely on DI benefits are generally higher for those receiving DI benefits only than for persons receiving multiple benefits. Limiting DI benefits to the replacement rate from DI benefits alone is disadvantageous for persons who receive only DI benefits, compared with those who also receive other benefits.

In the last decade, the social security disability insurance (DI) program has exhibited sharp growth, both in the number of beneficiaries and in benefit expenditures. From 1969 to 1978 the number of disabled-worker beneficiaries increased more than 100 percent—from 1.4 million to 2.9 million. This large increase occurred despite the fact that the number of workers insured in the event of disability increased only 25 percent in the same period. In addition, the recovery rate for disabled-worker beneficiaries declined during this period: the rate per 1,000 beneficiaries went from 29.3 in 1969 to 12.8 in 1976, thus maintaining the number of disabled persons on the benefit rolls at a high level. The resulting increase in the number of beneficiaries com-

bined with increases in benefit levels¹ to raise payments to workers and their dependents from \$2.5 billion in 1969 to \$13.0 billion in 1978.

The actual growth in the DI program surpassed anticipated levels and aroused concern. Attention turned to possible ways of controlling both the number of beneficiaries and program costs. Testimony before Congress focused attention on excessive replacement rates as a cause of the adverse disability insurance experience. It was argued in Congressional hearings concerning amendments to the disability insurance program that high rates of replacement act as an

* Division of Disability Studies, Office of Research and Statistics, Office of Policy, Social Security Administration. The author wishes to acknowledge the extensive editorial assistance of DonnaRae Castillo, Publications Staff, in the adaptation of this report for **Bulletin** publication. A longer version of this article has been published as Staff Paper No. 40.

¹ Benefit levels have risen both absolutely and relatively over the period in question. The average family benefit amount increased from \$140.50 in 1969 to \$322.30 in 1977. The Office of the Actuary estimates that average replacement rates (benefits relative to earnings) for disabled workers with median earnings and qualifying dependents increased from 60 percent in 1967 to more than 90 percent in 1976. (See **Experience of Disabled-Worker Benefits Under OASDI, 1972-1976**, Actuarial Study No. 75, Office of the Actuary, Office of Policy, Social Security Administration, June 1978.)

incentive to apply for DI benefits and as a disincentive for beneficiaries to return to work. A study by Social Security Administration (SSA) actuaries was cited during the hearings:

High benefits are a formidable incentive to maintain beneficiary status especially when the value of medicare and other benefits are considered. We believe that the incentive to return to permanent self-supporting work provided by the trial-work period provision has been largely negated by the prospect of losing high benefits.²

John Miller, a private sector actuary, was quoted as stating that "The evidence is clear that liberal disability benefits induce both an increase in the number of cases approved and the prolongation of disability."³

Estimates vary as to the number of persons whose benefits provide high replacement rates. In testimony before the Social Security Subcommittee, former Department of Health, Education, and Welfare Secretary Joseph Califano estimated that benefits exceed previous net earnings in approximately 6 percent of all cases and 80 percent of previous net earnings in 16 percent of the cases.⁴ Further research shows that 28 percent of those entitled during the 1969-75 period had DI benefits that exceeded 80 percent of average earnings reported to SSA over the individual's lifetime, even when earnings were indexed to current dollars.⁵

Concern about these excessive replacement rates was manifested in the Social Security Disability Amendments of 1980, signed into law June 9, 1980. The provisions include a cap on family social security benefits at 85 percent of the worker's average indexed monthly earnings (AIME) or 150 percent of the worker's primary insurance amount (PIA), whichever is lower, but not less than the worker's PIA.⁶

Disability insurance benefits are not the only contributor to the excessive replacement rates that may cause disincentives to return to work. In 1972, 44 percent of the DI beneficiary population received benefits from other public or private programs, presumably due to a disabling condition. Such multiple benefits raise replacement rates above those obtained when the computation is limited to DI benefits alone and can be expected to further reduce incentives to return to work.

² *Ibid.*, pages 10-11.

³ **Report on the Disability Insurance Amendments of 1979 (H.R. 3236)**, House Report No. 96-100, April 23, 1979, page 5.

⁴ *Ibid.*, page 4.

⁵ L. Scott Muller and M. E. Lando, **Replacement of Earnings of the Disabled Under Social Security: Levels and Trends 1969-75** (Research Report No. 53) Office of Research and Statistics, Office of Policy, Social Security Administration, June 1980.

⁶ Besides setting a cap on replacement rates, the law reduces the number of dropout years of earnings allowed in the computation of AIME for younger workers. It allows 1 dropout year for each 5 years of countable earnings, not to exceed a total of 5 dropout years.

The 1979 Advisory Council on Social Security recognized this problem, and a majority of the Council recommended that an individual's total benefits from all Federal disability programs be capped, with the exception of means-tested programs and service-connected veterans' compensation.⁷ Such a proposal is not without precedent. Currently, workers' compensation benefits and DI benefits are offset, subject to a replacement-rate cap.⁸ More important, however, may be the offset provisions from the Social Security Amendments of 1956, which reduced benefits dollar for dollar for DI beneficiaries who received disabled-worker benefits from either another Federal agency or a State workers' compensation program. That offset provision was, however, removed with passage of the Social Security Amendments of 1958.

This article examines the extent of the receipt of multiple benefits, the types of programs involved, and the resulting effect on benefits and replacement rates. Past research⁹ on the replacement of a disabled worker's earnings by DI benefits did not consider the possible receipt of multiple benefits by the disabled worker. Such data are not available from social security administrative records.¹⁰ By using data collected during the 1972 Social Security Survey of Disabled and Nondisabled Adults, it is possible to consider other sources of benefit income.¹¹ Among the income sources that are indicated by the survey data are aid to the permanently and totally disabled/aid to the blind (APTD/AB),¹² veterans' compensation, workers' compensation, government pensions, railroad retirement, aid to families with dependent children (AFDC) and other types of

⁷ "Social Security Financing and Benefits," **Reports of the 1979 Advisory Council on Social Security**, Department of Health, Education, and Welfare, December 7, 1979, pages 144-148.

⁸ The present workers' compensation offset became effective in July 1965 (section 424, Public Law 89-97, title III). The offset provides for a reduction in the monthly benefits for a disabled-worker family when the combined workers' compensation and DI benefit payments exceed 80 percent of average current earnings prior to the onset of the disability. "Average current earnings" is defined as the highest of (1) average monthly earnings used for computing the PIA, (2) average monthly earnings during the 5 consecutive years of highest covered earnings after 1950, counting any earnings in excess of the maximum taxable earnings level, or (3) average monthly earnings from covered employment in the year of the highest earnings during the period consisting of the year of disablement and the 5 preceding years, counting any earnings in excess of taxable earnings.

⁹ See L. Scott Muller and M. E. Lando, *op. cit.*, and F. R. Bayo and J. F. Faber, **Actual Replacement Rates for Disabled-Worker Beneficiaries** (Actuarial Note No. 94), January 1978.

¹⁰ Past research focused on predisability earnings that were truncated by the taxable maximum under the social security legislation. Administrative earnings data, which were merged with the 1972 survey, were also truncated at this level; hence the present research is based on social security taxable earnings.

¹¹ A description of the method used to assign benefits is presented in the technical note. A copy of the relevant portion of the questionnaire is presented in Staff Paper No. 40.

¹² These and some other formerly Federal and/or State programs were incorporated into the Federal supplemental security income program in 1974. For purposes of this analysis, APTD and AB are treated as a single source.

public assistance, private employer pensions, private insurance payments, State cash sickness (temporary disability), and unemployment compensation programs.

The Data

The data employed in this article come from the 1972 Social Security Survey of Disabled and Nondisabled Adults.¹³ The survey data have been matched to social security administrative data contained in the master beneficiary record. The resulting data set provides all the survey information plus social security earnings information, entitlement dates, benefit status information, and benefit amounts.

The data set consists of 1,284 unweighted observations of persons receiving disability insurance benefits as of December 1971. These cases are equivalent, when weighted, to a population of 1.3 million. By comparison, the actual population of DI beneficiaries at the end of 1971 was 1.6 million.

Certain benefits may be received only during the transition from the onset of a disabling condition to the receipt of DI benefits (such as unemployment compensation, temporary disability, or public assistance). To assure that the DI beneficiaries included in this study were also receiving other benefits, the sample was limited to persons whose current entitlement date was before January 1, 1971. This restriction guaranteed that the individual was entitled during the entire year and that the benefits received were in addition to the DI benefits. This additional criterion reduced the sample to 898 unweighted or 866,000 weighted cases.¹⁴ It was also necessary to omit a small percentage (less than 5 percent) of these cases from the analyses of benefit amount and replacement rates due to missing or allocated values.

Characteristics of Multiple Benefit Recipients

In 1971, 43.9 percent of the DI beneficiary population received benefits from at least one program besides the social security program. The largest proportion (87 percent) of these recipients of multiple benefits collected benefits from one additional program; 12 percent collected from two. No individual in the sample

¹³ The 1972 survey is a sample of 18,000 persons selected from the 1970 5-percent census sample. The data were collected and processed by the Bureau of the Census. Additional information about the survey may be found in the technical note on page 17.

¹⁴ The elimination of cases due to current entitlement of less than 1 year made very little difference in the proportion of recipients of multiple benefits. For all DI beneficiaries in 1972, the proportion of such recipients was 47 percent; for those DI beneficiaries whose current entitlement was before 1971, the proportion was 44 percent—a small but expected decrease.

received support from more than three of the 10 additional programs considered in this study.

Because the number of observations is small, persons receiving multiple benefits are categorized by single demographic variables in table 1.¹⁵ To control for more than a single variable, a multivariate logit technique¹⁶ was used to estimate the probability of receiving multiple benefits (table 2). This technique allows one to control for all other variables while determining which factors significantly differentiate beneficiaries with multiple benefits from other DI beneficiaries. Estimates were made including and excluding predisability earnings levels.

In the logit analysis, race, marital status, and the presence of a child proved to be statistically in-

¹⁵ Three categories of predisability earnings were generated from the average monthly earnings (indexed) over the working lifetime from age 22 (or 1951, whichever was later) to the year before entitlement to DI benefits. The low earnings category includes average earnings up to \$345 per month—a figure representing the 1971 poverty level cutoff for a nonfarm family of four. The moderate earnings category includes monthly earnings of \$345-500 per month; high earnings exceed \$500. The earnings upon which the calculation was based are subject to the taxable maximum imposed by the social security legislation.

¹⁶ For further discussion of the logit technique, see Jesse M. Levy, "Demographic Factors in the Disability Determination Process: A Logistic Approach," *Social Security Bulletin*, March 1980, page 12.

Table 1.—Number and percentage distribution of DI¹ multiple benefit recipients, by number of benefit programs and selected characteristics, 1971

Characteristic	Number (in thousands)	Percentage distribution, by number of benefit programs			
		Total	DI only	DI and 1 other program	DI and 2 or more other programs
Total.....	866	100.0	56.1	38.0	5.9
Sex:					
Men.....	603	100.0	47.8	44.3	7.8
Women.....	263	100.0	75.0	23.7	1.3
Race:					
White.....	739	100.0	55.4	38.3	6.3
Black.....	119	100.0	60.1	36.5	3.4
Marital status:					
Married.....	632	100.0	54.4	38.9	6.7
Nonmarried.....	233	100.0	60.3	36.0	3.7
Number of children:					
None.....	551	100.0	59.6	35.6	4.8
1 or more.....	315	100.0	49.9	42.4	7.8
Age:					
Under 35.....	50	100.0	73.2	24.6	2.2
35-44.....	96	100.0	45.2	46.1	8.7
45-54.....	276	100.0	49.5	43.0	7.4
55-64.....	455	100.0	60.6	34.7	4.7
Education (in years):					
0-8.....	381	100.0	55.7	38.9	5.4
9-12.....	390	100.0	59.2	34.3	6.6
13 or more.....	90	100.0	43.3	51.4	5.3
Predisability earnings:					
Low.....	470	100.0	63.5	32.6	3.9
Moderate.....	186	100.0	56.8	39.0	4.3
High.....	210	100.0	38.9	49.3	11.8

¹ Beneficiaries with current entitlement before January 1971.

Table 2.—Logit on probability of receiving multiple benefits, by selected characteristics, 1971

[t values shown in parentheses]

Characteristic	Predisability earnings	
	Included	Excluded
Number of cases	893	893
Constant.....	¹ -1.5424 (5.61)	¹ -1.3771 (6.15)
Sex (1 if male).....	¹ 1.1862 (6.50)	¹ 1.3391 (7.69)
Race (1 if black).....	.0956 (.45)	-.2093 (.99)
Marital status (1 if married).....	-.2102 (1.17)	-.1518 (.85)
Children (1 if yes).....	.2508 (1.53)	.2333 (1.44)
Age (55-64 = reference group):		
Under 35.....	² -.6757 (1.85)	² -.8467 (2.37)
35-44.....	³ .6194 (2.48)	³ .4720 (1.93)
45-54.....	³ .5359 (3.21)	³ .4296 (2.64)
Education (in years: 0-8 = reference group):		
9-12.....	.1238 (.78)	.1374 (.89)
13 or more.....	² .4774 (1.78)	² .4852 (1.85)
Predisability earnings (moderate = reference group):		
Low.....	.0545 (.29)	.....
High.....	¹ .9044 (4.25)	.....

¹ Significant at the 1-percent level of confidence; two-sided test, 2.576.

² Significant at the 10-percent level of confidence; two-sided test, 1.645.

³ Significant at the 5-percent level of confidence; two-sided test, 1.960.

significant in explaining differences in the probability of receiving multiple benefits. Sex, however, was a highly significant determiner, with men twice as likely as women to be recipients of multiple benefits—52 percent, compared with 25 percent.

Persons aged 55-64 served as the reference group for the logit analysis. Persons in groups aged 35-44 and 45-54 were far more likely to receive multiple benefits that were significantly greater than those of the reference group. The estimated probability was slightly greater for persons aged 35-44; those under age 35 were least likely to receive multiple benefits and hence had the smallest probability among all the groups. Education had little effect in determining multiple benefit status.

The level of predisability earnings had a significant influence on the probability of receiving multiple benefits. Although the group with low predisability earnings was not statistically discernible in the logit analysis from the group with moderate earnings, those with high predisability earnings were considerably more likely to receive multiple benefits. Sixty-one percent of the high earners received multiple benefits, compared with 43 percent of the moderate earners and 36 percent of the low earners (table 1).

Programs Contributing to Multiple Benefits

As the following tabulation shows, nearly half the recipients of multiple benefits received a veterans' benefit in addition to their DI benefits, making this the largest single source of multiple benefits.

Source of benefit	Number (in thousands)
Total.....	866
DI only.....	486
DI and other.....	1380
DI and—	183
Veterans' payments.....	183
Private employer pension.....	77
APTD/AB.....	55
Government pension.....	33
Workers' compensation.....	30
Other public assistance.....	24
Private insurance.....	17
AFDC.....	10
Railroad retirement.....	3
Temporary disability.....	3

¹ Figures do not add to total because some persons received benefits from more than one source.

Due to the small number of cases for most income sources, it was necessary to combine the 10 benefit sources into larger categories in order to analyze the effect of various characteristics on multiple benefit status. Four major categories were generated: Veterans' payments, private programs, means-tested programs, and other government programs.

The logit technique was applied once more to determine which characteristics were significant in identifying whether an individual receives income from a particular source. Again, estimates were made including and excluding predisability earnings. The logit results (table 3) are discussed below, following a brief discussion of the income sources in the category.

Veterans' Payments

Veterans' payments are the largest source of multiple benefits for DI beneficiaries: 21 percent of all DI beneficiaries received them (table 4). Veterans' programs provide compensation for service-connected disabilities, a needs-tested pension for non-service-related disabilities, and benefits for survivors of wartime veterans who died from service-related causes.¹⁷ As one might expect, men were much more likely to receive veterans' payments than women.

The logit analysis showed persons aged 35-44 and 45-54 were most likely to receive veterans' payments. This

¹⁷ Certain benefits are available to peacetime veterans also. For a description of veterans' benefits, see *Social Security Programs in the United States*, Office of Research and Statistics, Social Security Administration, 1973, pages 124-127.

Table 3.—Logit results of receiving various types of multiple benefits, by type of benefit and selected characteristics with inclusion and exclusion of predisability earnings, 1971

Characteristic	Type of benefit received and inclusion and exclusion of predisability earnings							
	Veterans' benefits		Private programs		Means-tested programs		Other government programs	
	Included	Excluded	Included	Excluded	Included	Excluded	Included	Excluded
Number of cases.....	893	893	893	893	893	893	893	893
Constant.....	¹ -4.2969 (9.49)	¹ -4.0087 (10.01)	¹ -1.8789 (4.24)	¹ -2.3392 (6.38)	¹ -3.0387 (6.26)	¹ -2.0219 (6.25)	¹ -3.3287 (6.22)	¹ -3.8088 (7.87)
Sex (1 if male).....	12.5189 (7.21)	12.4334 (7.74)	-.0186 (.05)	1.8541 (2.87)	.3773 (1.36)	.0347 (.13)	.2440 (.72)	2.5601 (1.76)
Race (1 if black).....	² -4.714 (1.71)	² -4.279 (1.57)	-.8243 (1.47)	³ -1.2624 (2.38)	2.4986 (1.72)	3.6795 (2.38)	-.0023 (.00)	-.1966 (.52)
Marital status (1 if married).....	-.0320 (.14)	-.0423 (.18)	-.1965 (.61)	-.0105 (.04)	¹ -7.445 (2.76)	¹ -7.626 (2.87)	³ 9.885 (2.48)	11.0397 (2.62)
Children (1 if yes).....	³ 4.568 (2.38)	³ 4.591 (2.40)	-.3012 (1.04)	-.2820 (1.04)	.2585 (.95)	.2551 (.95)	.0068 (.03)	-.0303 (.11)
Age (55-64 = reference group):								
Under 35.....	.0012 (.00)	.0988 (.23)	-1.4282 (1.35)	³ -2.2524 (2.20)	-.8969 (1.38)	-.5081 (.80)	-.7861 (.98)	-1.0481 (1.00)
35-44.....	1.8911 (3.19)	1.9088 (3.28)	² -1.0432 (1.85)	¹ -1.5064 (2.77)	.0887 (.23)	.2847 (.76)	1.9692 (2.58)	3.8392 (2.27)
45-54.....	1.8942 (4.39)	1.9040 (4.48)	² -5.551 (1.91)	¹ -8.201 (3.00)	-.0251 (.09)	.1105 (.41)	³ 6.545 (2.36)	3.5710 (2.09)
Education (in years: 0-8 = reference group):								
9-12.....	2.3154 (1.66)	.2845 (1.51)	.1689 (.64)	.2725 (1.11)	.0058 (.02)	-.1117 (.43)	-.2573 (.98)	-.1772 (.68)
13 or more.....	2.5395 (1.75)	.4793 (1.57)	.4014 (.98)	.5792 (1.51)	.1386 (.30)	-.0851 (.19)	-.1570 (.37)	-.0223 (.05)
Predisability earnings (moderate = reference group):								
Low.....	.3249 (1.44)	.....	¹ -1.3728 (3.30)	.....	1.2355 (3.28)	.....	³ .6618 (2.10)	.....
High.....	1.600 (.64)	.....	¹ 5.472 (5.20)	.....	.0676 (.14)	.....	.1832 (.59)	.....

¹ Significant at the 1-percent level of confidence; two-sided test, 2.576.
² Significant at the 10-percent level of confidence; two-sided test, 1.645.

³ Significant at the 5-percent level of confidence; two-sided test, 1.960.

Table 4.—Percent of DI beneficiaries, by type of benefit program and selected characteristics, 1971

Characteristic	Veterans' benefits	DI benefit and—		
		Private programs	Means-tested programs	Other government programs
Total.....	21.1	10.3	10.0	8.1
Sex:				
Men.....	28.8	12.5	9.1	9.5
Women.....	3.5	5.3	12.1	4.7
Race:				
White.....	21.6	11.7	9.1	8.3
Black.....	18.0	2.5	15.7	6.9
Marital status:				
Married.....	22.8	11.7	7.9	9.9
Nonmarried.....	16.4	6.7	15.8	3.1
Children:				
None.....	16.4	10.6	10.4	7.0
1 or more.....	29.3	9.8	9.5	9.9
Age:				
Under 35.....	20.0	1.3	6.5	1.2
35-44.....	32.3	2.5	13.1	14.0
45-54.....	30.6	6.6	9.8	10.9
55-64.....	12.9	15.1	9.9	5.8
Education (in years):				
0-8.....	20.3	9.3	10.5	9.5
9-12.....	21.2	8.6	10.3	6.8
13 or more.....	24.2	22.6	7.5	7.7
Predisability earnings:				
Low.....	18.7	1.8	14.6	5.1
Moderate.....	24.3	7.9	4.2	11.1
High.....	23.6	31.5	5.0	12.0

result probably reflects the presence (in 1971) of the majority of World War II and Korean veterans in these intervals. For both age groups, receipt rates exceeded 30 percent—1.5 times greater than the rate for persons aged 55-64 and about 2.5 times the rate for those under age 35. Having dependent children was found also to raise the probability of receiving veterans' benefits. This finding may only reflect the age effect, however, because those aged 35-44 and 45-54 are also those most likely to have dependent children.

Private Programs

The private programs category includes both private employer pensions and private insurance payments. Private employer pensions were the second largest individual source of multiple benefits; but, payments from private insurance plans provided an additional income source for only 2 percent of DI beneficiaries, as the tabulation on page 6 indicates.

The logit analysis shows that the probability of receiving private program benefits is positively related to predisability earnings levels. Those with low predisability earnings were significantly less likely to obtain these benefits than the reference group with moderate earnings. The high earnings group was significantly

more likely to receive them. Nearly 32 percent of the high earners received benefits from private programs, compared with only 8 percent of the moderate earners and 2 percent of the low earners. Persons aged 55-64 were found to be more likely to receive benefits from private programs than the other age groups, although the result was significant only to the 0.10 level. The concentration of older recipients among those receiving private program benefits may be a function of private employer pensions that require an employee to have a certain number of years of service for benefit eligibility. Such a condition may screen out younger employees.

If predisability earnings are excluded in the multivariate model, age, sex, and race are significant in determining multiple benefit status. Whites and men were more likely than minorities and women to receive private program benefits. Each of the three groups under age 55 showed significantly lower probabilities of receiving these benefits than the reference group of those aged 55-64. The significance of age, sex, and race in these regressions might be expected due to the importance of such variables in determining earnings level whenever earnings is the key determinant of benefit receipt from private programs.

Means-Tested Programs

The means-tested programs category includes aid to the permanently and totally disabled/aid to the blind (APTD/AB), aid to families with dependent children (AFDC), and other public assistance. Each of these programs requires a test of need based on income and assets.

Nearly 15 percent of the recipients of multiple benefits received income from APTD or AB. Aid to families with dependent children and other public assistance (such as general assistance and other State and local plans) are, unlike APTD/AB, not intended solely for the disabled (or aged) population. These programs, which are administered on the State level, are intended to provide financial assistance to low-income households. Disabled workers with total household income below the established income limits may apply for these benefits.

The logit analysis of means-tested programs indicates that, as expected, the probability of receiving income from these sources is greatest for those with low predisability earnings. Nearly 15 percent of that group had benefits from means-tested programs, compared with 4 and 5 percent, respectively, of the moderate and high earners. This level of support is expected because of the relationship between earnings and benefits and the income limits for the means-tested programs.

The logit analysis also identified nonmarried individuals as more likely to receive means-tested benefits than married individuals, perhaps due to the absence of a

spouse to provide an additional source of earned income. Nonmarried individuals received means-tested benefits at a rate twice that of married persons.

White persons were found less likely than those of other races to receive benefits from a means-tested program, although when controlling for earnings level, the result was significant only to the 0.10 level. Nine percent of the whites received such payments in addition to DI benefits, compared with 16 percent of other races.

Other Government Programs

The category of other government programs includes government pensions, railroad retirement, workers' compensation, and temporary disability insurance (cash sickness). These programs have been combined because small sample size precluded the analysis of each separately. The programs have two similarities: Each is a government program, and each has work-related benefits. Approximately 4 percent of the DI beneficiaries received income from one of the various State and Federal civil service pensions. The government pension plans differ among States and from the local State to Federal level, although the plans generally pay retirement and/or disability benefits after a tenure period in employment.

The Railroad Retirement Act provides retirement, survivor, and disability benefits for railroad workers who have at least 10 years of service.¹⁸ Workers are entitled to collect both social security and railroad retirement benefits, if so insured, but surviving dependents are eligible for only one of the two with benefits based on the combined earnings record. Less than 1 percent of the DI beneficiaries received benefits from the railroad retirement program.

Workers' compensation programs also vary from State to State; however, all such programs in the 50 States and Puerto Rico require that the disability be work-related. Most States provide for a 66 $\frac{2}{3}$ percent replacement of lost earnings, subject to minimum and maximum benefit levels and to maximum periods of coverage or maximum total benefit ceilings. Most States provide for payment of a lump-sum settlement if it is in the claimant's interest.¹⁹ Four percent of the DI beneficiaries received benefits under this program. Workers' compensation is the only program under which the DI benefit payments can be reduced or eliminated. Legislative offset provisions provide for a reduction in the monthly benefits for a disabled-worker family when the combined workers' compensation and monthly DI benefit payments exceed 80 percent of

¹⁸ Partial coverage is available upon death or retirement if 1½ years of coverage are earned in the last 3 years.

¹⁹ For additional information, see *Social Security Programs in the United States*, op. cit., pages 72-87.

average current earnings before the onset of disability.²⁰ This provision may be inadequate in preventing excessive replacement of earnings because 47 percent of those who received these combined benefits also received payments from one or more other programs.

As of 1972, five States, Puerto Rico, and the railroad industry had temporary disability programs to provide benefits of up to 6 months for nonoccupational disabilities or illnesses.²¹ Because of this 6-month maximum duration and the 5-month waiting period for social security benefits, the overlap of these two programs is limited. Less than 1 percent of the DI beneficiaries received temporary disability benefits.

Logit analysis identified three personal characteristics that are significant in determining overlap status in other government programs. Married individuals were more likely to receive benefits from these programs than nonmarried individuals. Persons aged 35-44 and 45-54 were more likely than those aged 55-64 to obtain such benefits. Finally, low predisability earnings reduced the probability of receiving benefits from other government programs.

Benefit Amounts

Receipt of multiple benefits does not necessarily indicate that the total benefits received are excessive or act as a disincentive to remain in the labor force or return to work. Some means-tested benefits are intended to supplement social security payments; the resulting disincentive effects may be minimal. On the other hand, if the benefits from other income-maintenance programs are not coordinated with those from social security, attempts to avoid disincentives within the social security system may be seriously impeded.

The average benefit amounts paid under the various programs are presented in table 5, which shows that the average DI benefit payment was 19 percent larger for persons who received income from other programs (\$224) than for persons who received only the DI benefit (\$189). Total payments to recipients of multiple benefits averaged \$429 per month, more than double the amount received by persons who received DI benefits only. Payments from sources other than the social security program were, on the average, 48 percent of the total benefits paid to those recipients. The average benefit amount paid varied greatly according to the source, ranging from \$251 per month under government pension plans to \$41 per month under the temporary disability insurance program.²²

The rate of receipt of multiple benefits increased as

²⁰ For a definition of average current earnings, see footnote 8.

²¹ See *Social Security Programs in the United States*, op. cit., pages 87-97.

²² Because overlapping of more than 1 month is unlikely, this amount may understate the actual monthly benefit under the temporary disability insurance program.

Table 5.—Number of multiple benefit recipients and average monthly benefit, by type of benefit and program

Type of benefit and program	Number of recipients (in thousands)	Average monthly benefit
DI and other benefits:		
Total benefits	866	\$290
DI benefits	866	203
DI benefits only	486	189
Multiple benefits only:		
Total benefits	380	429
DI portion	380	224
Other benefits	380	205
Veterans' benefits	183	205
Private employer pension	77	178
APTD/AB	55	83
Government pension	33	251
Workers' compensation	30	195
Other public assistance	24	86
Private insurance	17	161
AFDC	10	167
Railroad retirement	3	200
Temporary disability insurance	3	41

the DI benefit level rose until the benefit reached \$200 per month, where the receipt rate leveled off at about 50 percent (table 6). One notable exception was the \$350-399 interval in which the rate of receipt reached 71 percent, then fell to 47 percent for DI benefits above this level. The drop may be explained by the predominance of young persons at the highest benefit levels before legislative changes that provided for the indexing of earnings.²³ Younger workers are less likely to receive multiple benefits than older workers.

Generally, recipients of multiple benefits whose social security benefits are high were also more likely to receive benefits from other programs (table 7). Also, the monthly benefit amounts from these other programs were likely to be larger than the social security benefit. The resulting distribution of monthly benefits for multiple benefit recipients (table 8 and chart 1) shows that social security benefits are skewed toward the higher amounts for those who receive multiple benefits relative to those who do not.

²³ See technical note, page 17, for an explanation of indexing.

Table 6.—Number and percent of DI multiple benefit recipients, by DI benefit amount, 1971

Monthly DI benefit amount	Number of recipients (in thousands)	Percent receiving benefits from other programs
Total	866	43.9
Less than \$100	67	25.2
100-149	219	36.1
150-199	267	42.1
200-249	87	52.1
250-299	65	51.3
300-349	59	51.5
350-399	58	70.8
400 or more	39	46.7

Table 7.—Number and percentage distribution of multiple benefit recipients, by DI and other program monthly benefit amount, 1971

Monthly benefit amount from other programs	Total	Monthly DI benefit amount					
		Less than \$100	\$100-149	\$150-199	\$200-299	\$300-399	\$400-499
Total number (in thousands).....	1 350	13	73	105	72	69	18
Total percent.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than \$100.....	29.9	45.6	27.8	31.7	19.4	39.2	21.2
100-199.....	37.8	42.5	45.3	41.1	36.7	32.1	12.3
200-299.....	14.3	12.0	9.0	13.5	18.8	12.3	30.8
300-399.....	2.9	0	0	2.5	3.6	5.4	5.5
400-599.....	10.3	0	16.6	5.3	15.2	8.2	9.0
600-799.....	3.5	0	1.3	4.0	2.8	1.4	21.2
800 or more.....	1.3	0	0	1.9	2.5	1.3	0

¹ Excludes those who received multiple benefits but did not report specified amount.

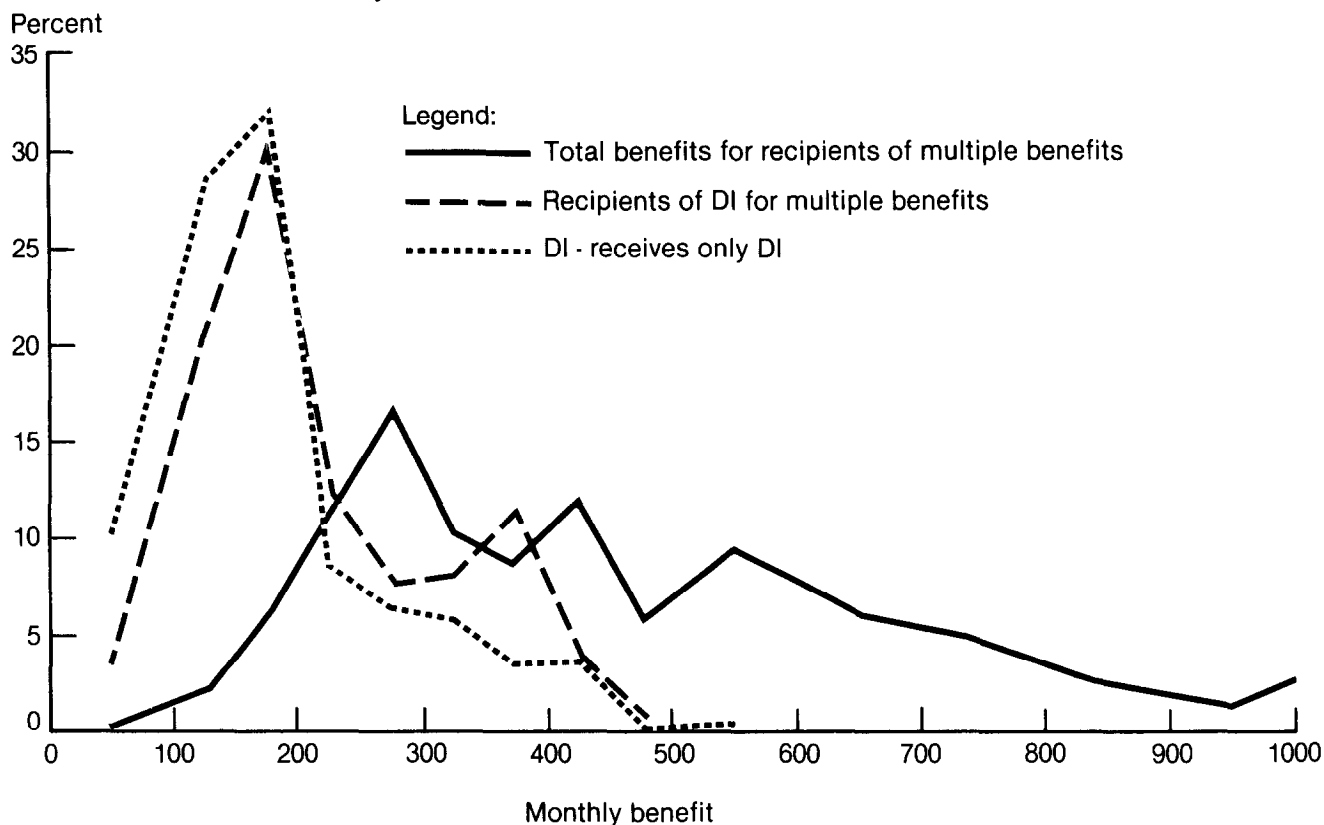
Except for the group receiving the lowest DI benefits, the incidence of receipt of multiple benefits increased with higher DI benefits (table 9). The high rate of receipt of multiple benefits among those who received low DI benefits may be due to the presence of recipients of means-tested benefits and (presumably) of persons whose DI benefit is offset by workers' compensation benefits.

Table 8.—Number and percentage distribution of DI multiple benefit recipients, by monthly benefit amount, 1971

Monthly benefit amount	Total recipients	Recipients of—	
		DI benefits only	Multiple benefits
Total number (in thousands).....	866	486	380
Total percent.....	100.0	100.0	100.0
Less than \$100.....	6.1	10.4	0.2
100-199.....	38.6	60.7	8.2
200-299.....	20.5	15.1	27.9
300-399.....	13.4	9.4	19.0
400-599.....	14.0	4.3	27.3
600-799.....	4.5	.....	10.8
800-999.....	1.6	.....	3.8
1,000 or more.....	1.1	.....	2.7

When the various programs are considered individually, the rates of receipt of veterans' payments and workers' compensation were greatest at the highest DI benefit levels. This finding may be explained by the predominance of men among the beneficiaries of these two programs combined with the traditionally higher earnings of men, thus producing larger DI benefits. Private pensions also were most likely to be received by recipients of high DI benefits. In contrast, private insurance benefits were most frequently received at the

Chart 1.—Distribution of monthly benefit amounts



middle DI benefit levels and means-tested benefits at low DI benefits levels.

Average Benefits by Selected Characteristics

The average total benefit amounts for recipients of DI benefits only and recipients of multiple benefits are compared in chart 2 and table 10. As expected, the average total benefit for recipients of multiple benefits far exceeded that for persons who received only DI benefits. The differences in average DI benefit payments according to demographic characteristics resemble those found in previous research. Men received higher benefits than women. Payments to whites exceeded those to blacks. Married persons and those with children had higher average benefits than their respective counterparts, presumably due to the dependents' benefits paid under the social security program. Higher average benefits were associated with higher education levels and higher earnings levels. Average benefits peaked for the group aged 35-44. Each of these findings held for both recipients of multiple benefits and those receiving DI benefits only.

When DI benefits are compared within a particular category, recipients of multiple benefits are found to have larger average DI benefits than persons who received no additional benefits—except for persons under age 35. Differences in average DI benefits between persons who received multiple benefits and persons who did not, which were significant at the 0.05 level, occurred for the following groups: Men, whites, married persons, those with children, persons aged 45-54 or 55-64, and those with 9-12 years of education.

The difference in total benefits between persons who received multiple benefits and those who did not was consistently large and varied greatly by personal char-

Table 10.—Average monthly benefits, by selected characteristics, 1971

Characteristic	Total recipients		Recipients of—			
	All benefits	DI benefits	DI benefits only	Multiple benefits		
				Total	DI	Other benefits
Total	\$290	\$203	\$189	\$429	\$224	\$205
Sex:						
Men	330	220	205	453	235	218
Women	197	166	165	306	168	139
Race:						
White	300	209	193	442	229	213
Black	226	169	164	328	176	152
Marital status:						
Married	318	223	207	462	244	218
Nonmarried	212	152	145	327	162	165
Children:						
None	245	170	165	374	180	195
1 or more	367	260	238	503	284	219
Age:						
Under 35	285	206	207	499	202	297
35-44	371	235	232	501	238	263
45-54	311	206	183	486	232	217
55-64	260	195	182	388	216	172
Education (in years):						
0-8	279	200	191	399	213	186
9-12	281	200	186	429	221	208
13 or more	379	236	201	522	263	258
Predisability earnings:						
Low	229	163	158	366	171	195
Moderate	332	233	226	483	243	240
High	386	268	252	476	279	197

acteristics (chart 2). Within each characteristic, the average total benefit was at least 85 percent greater for multiple benefit recipients than for persons receiving only DI benefits. The largest difference in average benefits, both absolutely and relatively, occurred among the college educated, where the amount to multiple benefit recipients was \$321 greater—more than 2½ times as large as that for those receiving no other benefits (table 10).

Table 9.—Number and percentage distribution of DI multiple benefit recipients, by monthly DI benefit amount and type of benefit program, 1971

Program	Total	Monthly DI benefit amount					
		Less than \$100	\$100-149	\$150-199	\$200-299	\$300-399	\$400 or more
Total number (in thousands)	866	67	219	267	152	117	39
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DI only	56.1	74.8	63.9	58.1	48.5	39.0	53.3
DI and—							
Veterans' benefits	21.1	1.1	16.6	21.2	27.8	28.6	32.8
Private employer pension	8.9	0	1.2	11.3	9.5	21.3	11.9
APTD/AB	6.4	10.8	9.7	3.6	7.0	2.3	6.9
Government pension	3.8	3.9	2.5	4.3	4.4	5.6	0
Workers' compensation	3.5	3.0	0	4.0	3.9	7.4	7.7
Other public assistance	2.7	6.1	7.1	.4	0	2.5	0
Private insurance	2.0	0	.7	2.7	4.2	.5	4.0
AFDC	1.2	0	1.0	.1	2.7	0	0
Railroad retirement .....	.4	1.2	.7	.2	0	0	0
Temporary disability insurance .....	.4	1.5	.5	0	.7	0	0
Any of the above programs	43.9	25.2	36.1	41.9	51.5	61.0	46.7

Benefits from Other Sources

To assess the "mixture" of DI benefits and other benefit amounts, multiple benefit recipients were categorized by the proportion of total benefits that came from sources other than DI benefits. Overall, the largest proportion of recipients (36 percent) had evenly divided benefits, with DI benefits making up 40-59 percent of the benefit package (table 11). The distribution appears to be skewed somewhat towards DI benefits making up the largest proportion of the total package. Whereas DI benefits made up less than 40 percent of the total package in fewer than 18 percent of the cases, DI benefits comprised more than 60 percent of the package for more than 46 percent of the individuals.

Replacement Rates

Analyzing benefit amounts gives only a partial picture of the size and adequacy of disability insurance benefits and the disincentives for a disabled worker to remain in or return to the labor force. A full evaluation of these problems must consider how large benefits are in relation to earnings. This comparison can be made by computing the ratio of benefits to earnings—the replacement rate. The higher the rate, the larger the

Table 11.—Percent of multiple benefit recipients, by percent of total benefits received from benefit programs other than DI, 1971

Percent	Total	Men	Women
1-19.....	14.5	14.9	12.3
20-39.....	31.9	32.6	28.6
40-59.....	36.1	33.8	48.1
60-79.....	14.1	15.3	7.7
80-99.....	3.4	3.5	3.2
Mean percent ¹	48	48	45

¹ Estimate computed from table 10.

percentage of past earnings replaced by the benefits, but the less the incentive to work.

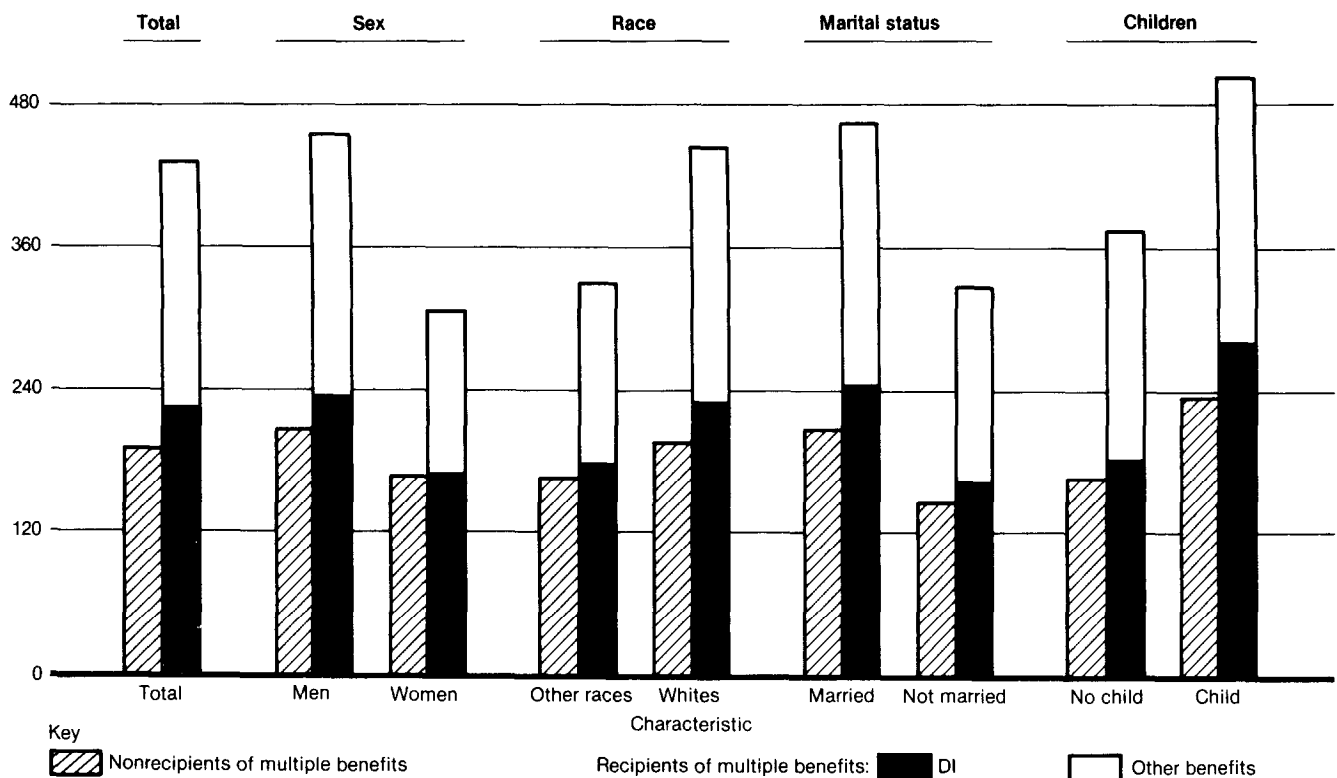
Previous research has discussed some problems associated with the computation of the replacement rate.²⁴ Among them are the choice of an earnings measure, the problems of taxes on earnings but not on benefits, multiple benefit sources, unearned income, and the possible change in labor-force status of the spouse.

This analysis examines replacement rates, including benefits from sources other than DI benefits, found in the 1971 data. Unfortunately the earnings denominators must be based on earnings reported to social security, and thus earnings are truncated at the taxable

²⁴ See L. Scott Muller and M. E. Lando, *op. cit.*

Chart 2.—Average monthly benefit amounts by selected characteristics

Average monthly benefit amount
600



maximum. This formulation may induce an upward bias to the earnings measures used. These measures are (1) the average indexed monthly earnings (AIME) over the working lifetime²⁵ and (2) the average earnings from the highest 5 years of indexed earnings of the 10 years before entitlement. The first presents the rate of replacement relative to lifetime earnings; the second measure views the rate relative to recent peak earnings.

To present a picture of the replacement rate for the "average" person, this analysis uses replacement rates. The median is used instead of the mean because it gives a more realistic picture of the actual replacement rate for an individual; the mean is too volatile, given the skewed distribution and large variance.²⁶

²⁵ The working lifetime includes earnings after age 22 or 1951, whichever is later, up until the year before the year of entitlement. This measure differs from the social security AIME measure in that the 5 years of lowest earnings were not dropped, and earnings are measured to the year before the year of entitlement not to the year before onset.

²⁶ The distribution of replacement rates tends to be skewed towards the higher rates for two reasons: (1) Very low earnings provide a relatively large minimum benefit and thus a higher ratio of benefits to earnings; and (2) higher earners have their earnings truncated at the taxable maximum, which assures a relatively large minimum replacement rate because their benefits are also high. The median does not change very much with the high-valued outliers.

Replacement rates that exceed 80 percent of pre-disability earnings are, for the purpose of this study, considered high. This rate is believed to be a good estimate of the level at which benefits will equal earnings after taxes and work-related expenses are subtracted.

Although multiple benefit recipients had higher DI benefit payments than persons who received only DI benefits, DI benefit replacement rates for the former tended to be smaller (table 12). Median replacement rates for DI beneficiaries were about 15 percent greater for those who received no additional benefits when benefit amounts were based on average lifetime earnings. The proportion of high rates of replacement under the disability program was one-third greater for persons receiving only DI benefits based on the lifetime earnings measure (table 13).²⁷

The distribution of replacement rates is consistently skewed towards higher DI benefit replacement rates for persons who receive no benefits other than DI benefits. It is no surprise, however, to find that other benefit sources combine with DI benefits to produce total replacement rates for multiple benefit recipients that are

²⁷ Based on the high 5 years of the past 10 years, the comparable figures were 15.7 percent for persons receiving only DI benefits and 10.1 percent for recipients of multiple benefits.

Chart 2.—Average monthly benefit amounts by selected characteristics—Continued

Average monthly benefit amount
600

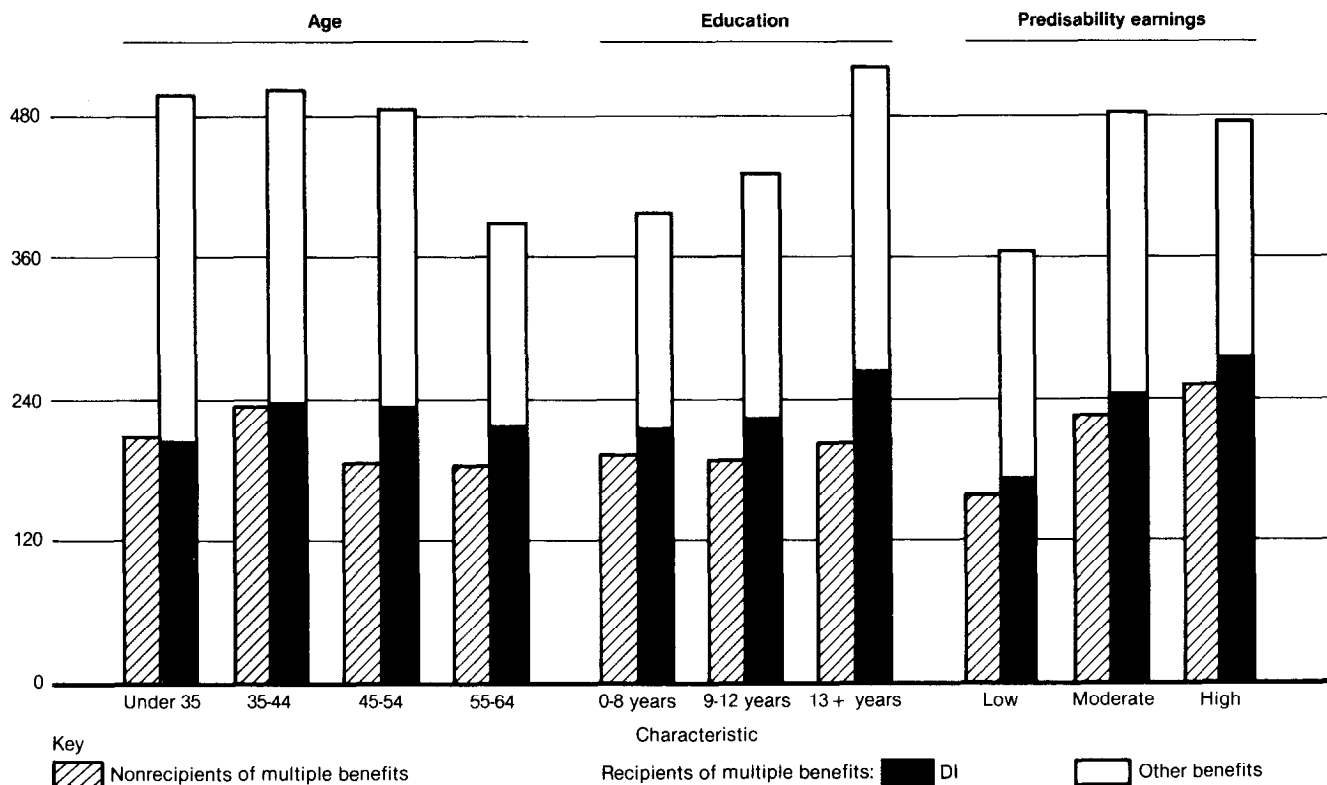


Table 12.—Median replacement rates based on average indexed monthly earnings over the lifetime, by selected characteristics, 1971

Characteristic	Total recipients		Recipients of—			
	All benefits	DI benefits	DI benefits only	Multiple benefits		
				Total	DI	Other benefits
Total.....	79.5	63.2	67.5	100.0	58.9	40.8
Sex:						
Men.....	78.7	60.5	64.2	99.1	58.9	38.6
Women.....	82.4	69.8	72.4	102.7	53.0	44.0
Race:						
White.....	77.8	60.3	66.4	96.9	57.1	39.1
Black.....	94.9	77.4	78.7	147.9	75.5	58.0
Marital status:						
Married.....	81.7	66.3	69.4	104.4	60.3	39.5
Nonmarried.....	72.1	55.6	57.8	96.9	53.0	43.9
Children:						
None.....	67.0	50.4	53.5	87.0	44.8	38.6
1 or more.....	98.1	80.7	88.4	121.7	76.3	42.1
Age:						
Under 35.....	117.6	108.2	114.1	1156.6	1108.1	140.8
35-44.....	124.2	89.2	93.1	153.7	82.7	71.0
45-54.....	90.6	70.9	78.7	110.8	67.1	43.5
55-64.....	68.0	53.0	55.3	81.6	52.2	33.9
Education (in years):						
0-8.....	80.3	66.3	69.4	105.1	61.1	41.6
9-12.....	80.7	60.8	64.2	96.9	56.6	40.8
13 or more.....	73.0	58.2	65.0	79.6	57.1	35.6
Predisability earnings:						
Low.....	103.3	88.2	88.6	159.5	86.9	65.1
Medium.....	61.1	44.2	43.1	85.7	48.1	30.3
High.....	61.3	35.2	34.2	71.7	42.8	24.1

¹ Data unreliable because of small numbers of unweighted cases.

considerably greater than replacement rates for persons who receive only DI benefits. The proportion of persons whose benefits produced high replacement rates was 60 percent greater for multiple benefit recipients when benefits were based on lifetime earnings. The addition of other benefits caused the median rate of replacement for the entire sample of DI beneficiaries to increase from 63 percent to 80 percent (table 12) and the proportion receiving high replacement rates to increase from 35 percent to more than 50 percent (table 13). That recipients of multiple benefits predominate among those with higher total rates of replacement is also evident from the data in the following tabulation and chart 3.

Replacement rate (percent)	Percent of persons with earnings replaced by—		
	DI benefits only	Multiple benefits	
		Total	DI portion
0.01-39.....	19.3	1.3	22.2
.40-59.....	23.5	13.6	28.1
.60-79.....	18.0	18.6	20.7
.80-99.....	15.1	15.9	10.6
1.00-1.39.....	12.8	19.0	10.4
1.40 or more.....	11.3	31.6	8.0

Replacement Rates by Selected Characteristics

Median replacement rates and the proportion of persons whose benefits produced high replacement rates were also examined according to various personal characteristics; a logit analysis was performed to determine which of these characteristics are associated with the receipt of high replacement rates if all other factors are held constant (table 14). In general, the patterns that apply to the total population hold true within each group.

Very little difference in median replacement rates was found when benefits were analyzed according to sex. Women's benefits tended to yield higher replacement rates than men's, except for DI benefit payments to recipients of multiple benefits (table 12). The relative difference in replacement rates between those recipients and persons receiving only DI benefits was smaller for women (42 percent) than for men (54 percent).

Median rates of replacement were consistently greater for blacks than for whites. The relative difference in median replacement rates between persons who receive multiple benefits and those who do not was greater for blacks (88 percent) than for whites (44 percent).

Married persons and those with children had benefits that produced higher median replacement rates than

Table 13.—Percent with high replacement rates based on average indexed monthly earnings over the lifetime, by selected characteristics, 1971

Characteristic	Total recipients		Recipients of—			
	All benefits	DI benefits	DI benefits only	Multiple benefits		
				Total	DI	Other benefits
Total.....	50.6	35.0	39.3	66.5	29.0	24.0
Sex:						
Men.....	49.5	31.3	34.7	64.3	27.9	23.9
Women.....	52.9	43.4	45.9	77.8	34.7	24.4
Race:						
White.....	48.5	32.8	37.4	63.6	26.5	22.9
Black.....	63.3	47.6	49.9	85.9	43.7	32.6
Marital status:						
Married.....	52.5	36.7	41.9	66.4	29.9	24.0
Nonmarried.....	45.0	30.2	32.7	66.8	25.8	23.9
Children:						
None.....	38.9	24.5	29.4	55.1	16.1	20.1
1 or more.....	70.8	53.2	60.6	81.1	45.6	29.0
Age:						
Under 35.....	69.6	65.9	62.2	1100.0	181.0	143.5
35-44.....	77.3	63.1	69.3	84.9	57.2	46.3
45-54.....	60.6	42.9	47.9	74.6	37.3	26.4
55-64.....	37.6	22.0	27.6	53.9	12.7	15.2
Education (in years):						
0-8.....	51.5	36.5	40.1	67.3	31.5	22.8
9-12.....	51.2	34.4	39.6	69.7	26.2	23.7
13 or more.....	41.7	28.4	29.0	52.7	27.9	29.6
Predisability earnings:						
Low.....	70.1	57.8	58.7	93.3	55.9	41.5
Medium.....	32.4	16.3	15.0	57.5	18.1	14.9
High.....	25.3	3.5	2.0	40.8	4.4	9.1

¹ Data unreliable because of small number of unweighted cases.

those for the unmarried or persons who have no children. One exception was the receipt of other benefits: unmarried persons had more earnings replaced by other benefits than married persons, although the difference was not statistically significant. The difference between median replacement rates for those receiving multiple benefits and those receiving only DI benefits was considerably greater for those who are unmarried (68 percent) and those who have no children (63 percent) than for those who are married (50 percent) or have children (37 percent).

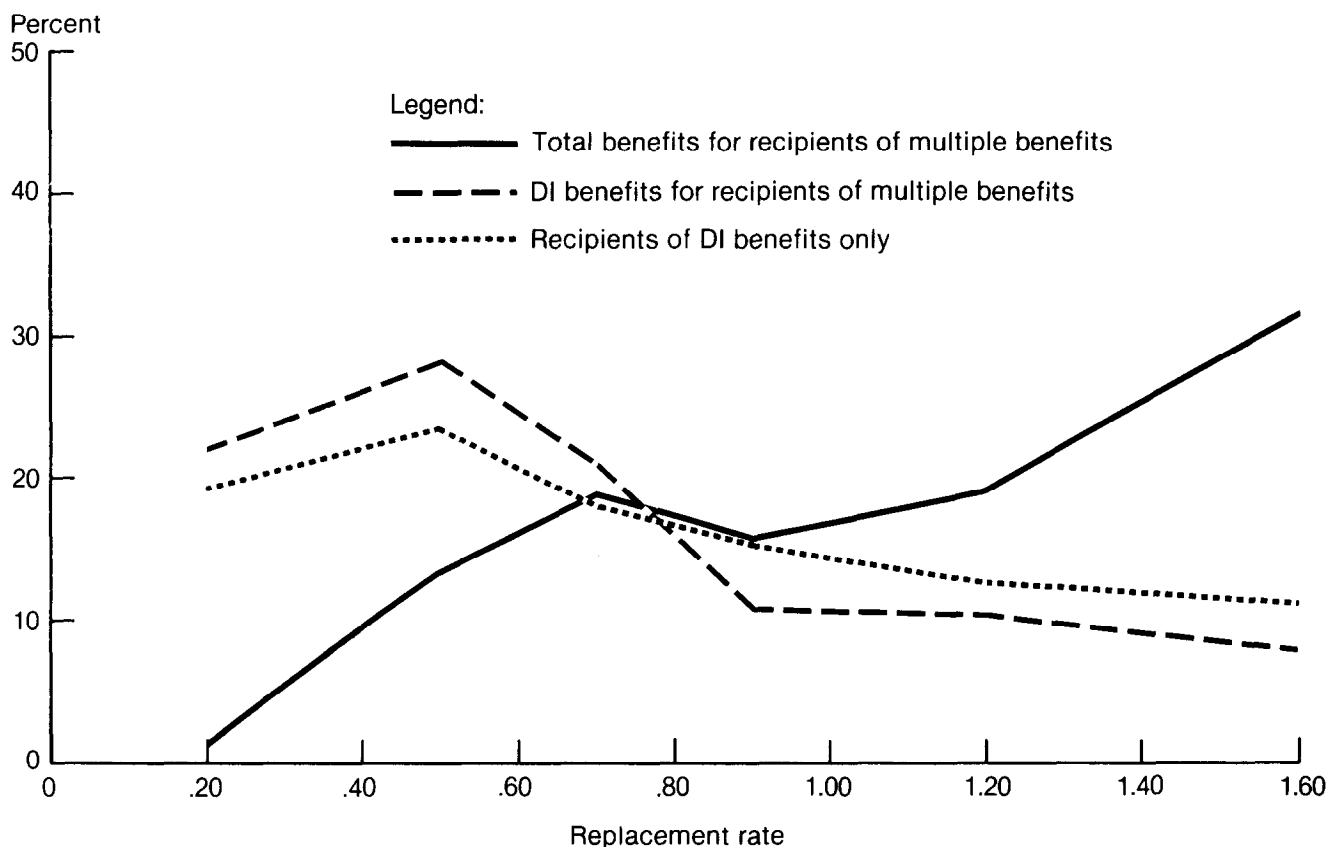
Median replacement rates were found to be inversely related to age regardless of the source of the benefits or whether multiple benefits are received. The largest difference in median replacement rates of persons receiving and not receiving multiple benefits occurred for persons aged 35-44.

Education produced little difference in median replacement rates under the DI program. Total replacement rates for persons receiving multiple benefits tended to be lower for persons with some college than for persons with less education. The relative differential between multiple benefit recipients and those who receive only DI benefits was also smaller for persons with some college. The difference in median replacement rates was only 23 percent for these persons, compared with differences upwards of 50 percent for the less educated groups.

Predisability earnings level was inversely related to replacement rates; this characteristic produced the greatest difference in median replacement rates. The median rate of replacement for those with DI benefits only was more than twice as large for low earners as for moderate or high earners; for recipients of multiple benefits, the difference was only slightly less. The relative difference in median replacement rates between persons receiving only DI benefits and those receiving DI benefits and additional benefits did not change according to earnings level. Multiple benefit recipients had replacement rates that doubled the replacement rates of those receiving only DI benefits for medium and high earners and exceeded the rates for low earners by 80 percent.

When high replacement rates were examined, the resulting logit analysis was applied not only to the entire sample, but also to persons receiving DI benefits only and to recipients of multiple benefits. The analysis of total benefits for the entire sample (that is, DI benefits for those with DI benefits only and total benefits for recipients of multiple benefits) indicated that race and education, when other factors were held constant, were insignificant in determining whether or not an individual's benefits provide high total replacement rates. Men were found to be more likely to have benefits yielding high total replacement rates when predisability earnings are controlled, but women were more likely to receive

Chart 3.—Distribution of replacement rates by multiple benefit status (lifetime earnings formulation)



benefits that provide high rates of replacement when earnings were not taken into account. This result is probably a function of the lower earnings levels for women and hence higher rates of replacement under the DI program due to the benefit formula that replaces lower earnings at a higher rate. Married persons or those with children were found to be more likely to receive benefits providing high rates of replacement, possibly due to the presence of dependents' benefits under the DI program and certain other programs.

Individuals aged 35-44 and 45-54 were found to be more likely to have benefits that provide high replacement rates than those in the reference group aged 55-64. Persons under age 35 did not have replacement rates that were statistically different from the rates for those aged 55-64 when controlling for earnings level, but had a greater probability that their benefits would provide high replacement rates when the earnings level was neglected.

The probability that benefits would provide high replacement rates declined as earnings levels increased. Individuals with low earnings were found to be more likely to receive high benefits than those in the moderate (reference) group. The decline for the high earnings group relative to the reference group was not statistically significant.

The logit analysis of high replacement rates under the DI program shows that sex, race, and education were insignificant factors in determining those persons whose benefits would mean high replacement rates when the predisability earnings level was included. When the earnings level was excluded, men and those persons with higher levels of education were less likely to receive benefits providing high rates of replacement, partly due to the correlation of both variables with earnings.

When predisability earnings were included in the logit analysis, married persons and those with children were found most likely to have benefits that meant high replacement rates under the DI program. The three younger age groups had significantly greater probabilities of receiving high replacement rates from their DI benefits than did the oldest group. As predisability earnings increased, the probability of high replacement rates declined, if other factors were held constant. Low earners were more likely than moderate earners to have high replacement rates. Because of the negative relationship between earnings and replacement rates under the DI program, high earners were least likely to have benefits providing high replacement rates. When predisability earnings were excluded, the results for age and the presence of children were similar to those

Table 14.—Logit on high replacement rates including and excluding predisability earnings, 1971

Characteristic	Type of benefit and inclusion and exclusion of predisability earnings					
	Total recipients				Recipients of multiple benefits	
	All benefits		DI benefits			
	Included	Excluded	Included	Excluded	Included	Excluded
Number of cases.....	832	832	832	832	355	355
Sex (1 if male).....	¹ 0.37014 (1.82)	² 0.37733 (2.19)	-0.25230 (1.20)	³ -1.0561 (5.77)	-0.47376 (.97)	² -1.0082 (2.56)
Race (1 if black).....	-.12140 (.48)	.35470 (1.54)	-.33698 (1.29)	.32161 (1.40)	.41866 (.68)	1.3231 (2.66)
Marital status (1 if married).....	² .45299 (2.23)	¹ .32654 (1.77)	² .44253 (2.00)	.28349 (1.43)	1.1086 (2.66)	.51386 (1.54)
Children (1 if yes).....	³ 1.3405 (6.92)	³ 1.1360 (7.90)	³ 1.3321 (6.08)	.98731 (5.61)	1.7771 (5.22)	1.6145 (5.34)
Age (55-64 = reference group):						
Under 35.....	.52844 (1.22)	.96270 (2.41)	1.4725 (3.14)	1.7079 (4.26)	5.2670 (.61)	6.6536 (.81)
35-44.....	³ 1.1325 (3.60)	³ 1.3479 (4.66)	³ 1.4163 (4.24)	³ 1.4892 (5.52)	.56242 (1.00)	³ 1.0563 (2.17)
45-54.....	² .47355 (2.59)	² .61469 (3.69)	² .47834 (2.33)	² .60858 (3.46)	.18628 (.56)	¹ .48169 (1.68)
Education (in years: 0-8 = reference group):						
9-12.....	.02564 (.14)	-.14209 (.87)	-.22883 (1.13)	-.39893 (2.32)	-.04673 (.15)	-.21032 (.76)
13 or more.....	-.07955 (.26)	-.38372 (1.39)	-.42688 (1.18)	-.61617 (2.05)	.02152 (.04)	-.18852 (.43)
Earnings (moderate = reference group):						
Low.....	³ 1.9221 (8.79)	.....	² 2.2555 (9.00)	.....	³ 2.6807 (5.52)	.....
High.....	-.31874 (1.32)	.....	-1.9834 (4.17)	.....	-.72929 (2.16)	.....
Constant.....	³ -2.1627 (6.87)	³ -.60799 (2.75)	³ -2.6396 (7.29)	³ -.73699 (3.21)	-.87748 (1.57)	.33302 (.84)

¹ Significant at the 1-percent level of confidence; two-sided test, 2.576.
² Significant at the 10-percent level of confidence; two-sided test, 1.645.

³ Significant at the 5-percent level of confidence; two-sided test, 1.960.

previously stated, but marital status was no longer a statistically significant variable.

The analysis of high replacement rates among recipients of multiple benefits shows that sex, race, age, and education were insignificant in determining benefit amounts that would mean high replacement rates when earnings were held constant. If earnings were excluded, men and whites had lower probabilities of receiving benefits that provided high rates of replacement. Being married and/or having children increased the probability of such high replacement rates. As under the DI program, predisability earnings were inversely related to the probability of having benefits that led to high replacement rates.

Comparisons of Replacement Rates from DI and Combined Benefits

The foregoing analysis has shown that replacement rates based on total benefits for persons receiving multiple benefits were considerably higher than the replacement rates based solely on DI benefits. Not considering multiple benefits, therefore, understates the rate of replacement and the number of persons whose benefits represent high replacement rates. The effects of such an understatement when considering both adequacy of benefits and labor-market incentives could be great.

Table 15.—Absolute and relative difference in median replacement rates and difference in rate of receipt of high replacement rate when based on replacement rates for multiple benefits rather than DI benefits only, 1971

Characteristic	Difference in median replacement rate		Difference in rate of receipt of high replacement rate	
	Absolute	Relative	Absolute	Relative
Total	16.3	25.8	15.6	44.6
Sex:				
Men	18.2	30.1	18.2	58.1
Women	12.6	18.1	9.5	21.9
Race:				
White	17.5	29.0	15.7	47.9
Black	17.5	22.6	15.7	33.0
Marital status:				
Married	15.4	23.2	15.8	43.0
Nonmarried	16.5	29.7	14.8	49.0
Children:				
None	14.6	29.0	14.4	59.2
1 or more	17.5	21.7	17.6	33.0
Age:				
Under 35	9.4	8.7	3.7	5.6
35-44	35.0	39.2	14.2	22.5
45-54	19.7	27.8	17.7	41.3
55-64	15.0	28.3	15.6	70.9
Education (in years):				
0-8	14.0	21.1	15.0	41.1
9-12	19.9	32.7	16.8	48.8
13 or more	14.8	25.4	13.3	46.8
Predisability earnings:				
Low	15.1	17.1	12.3	21.3
Medium	16.9	38.2	16.1	98.8
High	26.1	74.1	21.8	622.9

Absolute and relative increases in both median replacement rates and the proportion of persons who have high replacement rates occur when multiple benefits rather than DI benefits alone are considered; but the magnitude of the difference in replacement rates varies according to individual characteristics. Such relative increases are quite often greater among groups with lower DI benefit replacement rates, including men, whites, persons with no children, persons aged 55-64, and particularly persons with moderate or high predisability earnings (table 15). Thus, because replacement rates based only on DI benefits are generally lower for individuals who receive additional benefits, employing policies that hold down replacement rates based only on DI benefits may be disadvantageous to persons whose sole benefit comes from social security, compared with those who receive benefits from more than one program.

Technical Note

In carrying out its responsibility for collecting and analyzing data on the disabled, the Social Security Administration conducted a survey in mid-1972, using the 5-percent sample from the 1970 Decennial Census to identify both disabled and nondisabled adults. The 1972 survey was designed primarily to update earlier estimates of the extent and severity of disability in the population derived from the earlier general survey of the disabled conducted by the Social Security Administration in 1966.

In addition, the survey examined factors associated with the development and duration of disability by comparing persons who were currently disabled, previously disabled, and nondisabled. The study focused on adjustments to disability and examined economic, medical, and social consequences of disability for the disabled person and his family. The survey provides information on:

- the severity and prevalence of disability by demographic, social, economic, and occupational characteristics;
- factors affecting coping mechanisms and the nature of adaptation to impairment and disability—such as work adjustments, rehabilitation, and dependency;
- factors affecting application for and receipt of wage-replacement and income-maintenance benefits from social security and other public and private programs;
- evaluation of disability program provisions and of proposals for legislative and policy changes on disability and work experience requirements.

Study Design

The data were collected and processed by the Bureau of the Census. Survey estimates are based on a sample of 18,000 interviewed persons selected from the 1970

5-percent Census sample. Of these 18,000 persons, 11,700 were selected as the disabled sample from all those persons who indicated they were disabled before October 1969 on the 1970 Census questionnaire. A mail screening in 1971 of the remaining persons resulted in two other sample groups—5,100 nondisabled persons and 1,200 recent onset cases.

In addition, there were 2,850 noninterviews. Thus the rate of “good responses” for the survey—based on 18,000 interviewed persons out of 20,850 eligible for interview—is 86 percent. The number and reason for noninterviews were as follows:

Noninterview reason	Number of persons
Total.....	2,850
Unable to contact.....	1,240
Temporarily absent.....	100
Refused.....	620
Moved outside 357 primary sampling units.....	650
Miscellaneous.....	240

In general, the sample was a stratified multi-stage cluster design comprised of 357 sampling areas that included every county and some independent cities in the United States. The disabled persons were selected from all 357 strata; the nondisabled and recently disabled groups were chosen from a special subset of 105 strata. The sample was designed to represent the noninstitutionalized civilian population of the United States aged 18-64 as of April 1970.

Match With Social Security Records

To enhance the usefulness of survey data in analyses focused on program issues, the information obtained by interviews was combined with selected data available from the master beneficiary record maintained by the Social Security Administration. Data from both the interview and benefit records were used to establish beneficiary status for tabulation purposes.

Allocations

To maximize the amount of useful information, allocations were made for missing-income and medical-cost items based on values obtained from respondents with similar economic, medical, and demographic characteristics. Examples of medical characteristics that were used are “days hospitalized” and “number of doctor visits.” Economic characteristics included “income” and other types of assets. An amount was assigned from the information for another person, systematically chosen according to the order in which the records were processed, who gave a good response to the item in question.

Income Sources

During the 1972 survey, each household was requested to supply information concerning the receipt of various sources of income. The information on receipt of benefits from programs other than social security came from the 1972 Survey of Disabled and Nondisabled Adults. Information on beneficiary status and monthly benefit amount under social security came from the master beneficiary record. Benefit amounts and beneficiary status were determined as of December 1971, and only persons who were currently entitled before January 1, 1971, were included in the sample. Receipt of multiple benefits was based on the respondent’s indication that he received that particular income and the amount received. If the respondent did not receive the income, but a spouse or child did, the respondent was not considered a recipient of multiple benefits, and the income was not considered in the analysis.

To arrive at average monthly benefit amounts for sources of income other than social security, the total 1971 benefit was divided by 12. The individual’s response as to receipt of social security benefits was not used in the analysis. To assure accuracy, this information was obtained from the matched master beneficiary record. Sources of income other than those discussed in this article were not considered in the analysis. Less than 2 percent of the respondents indicated that they were receiving income from a source other than those specified. Slightly more than 3 percent of the cases in the sample were omitted from the benefit amount and replacement rate analyses due to allocated values for the benefit amount. This omission was made to avoid any possible biases caused by the allocation procedure used by the Bureau of the Census.

Indexing

Over time the value of money changes causing changes in the level of prices and income. During recent times, prices and income have risen mainly because of “inflation.” The 1977 Amendments to the Social Security Act provided for the indexing of credited earnings to a constant level in order to assure comparability of social security benefits from one cohort of disabled or retired workers to another. This index adjusts for changes in the median earnings level of the working population, theoretically adjusting for price and productivity changes. In this article that series of index values has been applied to predisability earnings before computing the replacement rate in order to obtain a rate of replacement measured in real earnings. This application of the index facilitates the comparison of replacement rates among individuals whose earnings occurred in different years. The index values, based on

the social security formulation with 1971 as the base year, are shown below.

Year	Index value
1973.....	0.857
1972.....	.911
1971.....	1.000
1970.....	1.050
1969.....	1.102
1968.....	1.166
1967.....	1.247
1966.....	1.316
1965.....	1.395
1964.....	1.420
1963.....	1.478
1962.....	1.514
1961.....	1.590
1960.....	1.622
1959.....	1.685
1958.....	1.769
1957.....	1.784
1956.....	1.840
1955.....	1.968
1954.....	2.059
1953.....	2.070
1952.....	2.185
1951.....	2.322

Definition of Disability

Disability is defined in this study as a limitation in the kind or amount of work (or housework) resulting from a chronic health condition or impairment lasting 3 months or longer. The disability classification was based on the extent of the individual's capacity for work, as reported by the respondent in a set of work-qualification questions. Data on employment and on functional capacities—such as mobility, activities of daily living, personal care needs, and functional activity limitations—were also collected to evaluate further the nature and severity of disability.

The severity of disability was classified by the extent of work limitations as:

Severely disabled—unable to work altogether or unable to work regularly.

Occupationally disabled—able to work regularly but unable to do the same work as before the onset of disability, or unable to work full time.

Secondary work limitations—able to work full time, regularly, and at the same work but with limitations in the kind or amount of work they can perform; women with limitations in keeping house but not in paid work are included as having secondary work limitations.

Reliability of Estimates

Since the estimates in this article are based on a sample, they may differ somewhat from the figure that would have been obtained if all disabled and non-disabled adults in the United States had been surveyed with the same techniques used. As in any survey, the results are subject to error of response and of reporting as well as to the sampling variability. The standard

error is a measure of sampling variability and indicates the amounts by which the sample estimates may vary from the universe values that would have been obtained if all persons in the universe had been studied.

For interval estimates, the standard error is used to construct an interval with a prescribed confidence that the interval includes the universe value or the average of all possible samples drawn from the same universe. In about 68 percent of the samples from a population, the population value would be included in the interval from one standard error below the sample estimate to one standard error above it—referred to as the 68-percent confidence or one-standard-error interval. In about 95 percent of the samples from a population, the population value would be included in the interval from two standard errors below the sample estimates to two standard errors above it—the 95-percent confidence or two-standard-error interval. The 99-percent confidence interval extends approximately two and one-half standard errors above and below the sample estimate.

The standard error is also useful in testing the significance of the difference between two statistics—that is, the confidence one can have that the sample difference in means, percentages, or estimates is a real difference and not merely due to chance. To test this assumption, the standard error of the difference can be calculated from the square root of the sum of the squared standard errors of each sample estimate. If the observed difference is as large as one standard error of the difference it is statistically significant at the 68-percent confidence level; if it is as large as two standard errors it is significant at approximately the 95-percent level; and if it is as large as two and one-half standard errors it is significant at about the 99-percent level. As a general practice in the analyses presented here, differences between estimates and between percentages are considered statistically significant if the critical ratio equals or exceeds 1.96 standard errors, the level at which a predicted difference could be expected to occur by chance less than 5 out of 100 times, or the 0.05 level of significance.

Table I gives approximate standard errors for the

Table I.—Standard errors of estimated numbers of persons with a severe disability

Size of estimate	Standard error
10,000.....	8,900
25,000.....	14,100
50,000.....	20,000
100,000.....	28,200
250,000.....	44,600
500,000.....	60,000
1,000,000.....	88,700
2,500,000.....	139,000
5,000,000.....	192,000
7,500,000.....	231,000
8,720,000.....	246,000

(Continued on page 43)

Table M-9.—OASDI cash benefits: Monthly benefits in current-payment status, by program, 1940–80

[Data contain some duplication arising from dual entitlement; see the 1976 Annual Statistical Supplement, p. 9]

At end of selected month	Number			Amount (in thousands)		
	Total	OASI ¹	DI ²	Total	OASI ¹	DI ²
December:						
1940.....	222,488	222,488	.....	\$4,070	\$4,070	.....
1945.....	1,288,107	1,288,107	.....	23,801	23,801	.....
1950.....	3,477,243	3,477,243	.....	126,856	126,856	.....
1955.....	7,960,616	7,960,616	.....	411,613	411,613	.....
1960.....	14,844,589	14,157,138	687,451	936,321	888,320	\$48,000
1965.....	20,866,767	19,127,716	1,739,051	1,516,802	1,395,817	120,986
1970.....	26,228,629	23,563,634	2,664,995	2,628,326	2,385,926	242,400
1971.....	27,291,508	24,361,500	2,930,008	3,058,957	2,763,022	295,934
1972.....	28,476,028	25,204,542	3,271,486	3,916,203	3,514,741	401,462
1973.....	29,868,145	26,309,163	3,558,982	4,269,863	3,821,165	448,698
1974.....	30,852,817	26,941,483	3,911,334	5,001,918	4,445,170	556,748
1975.....	32,084,511	27,732,311	4,352,200	5,727,758	5,047,656	680,102
1976.....	33,023,552	28,399,725	4,623,827	6,415,103	5,624,858	790,246
1977.....	34,082,556	29,228,350	4,854,206	7,175,513	6,270,000	905,513
1978.....	34,586,771	29,718,195	4,868,576	7,930,576	6,933,292	997,284
1979.....	35,125,066	30,347,848	4,777,218	9,056,622	7,950,300	1,106,322
1979						
July.....	34,672,823	29,876,768	4,796,055	8,870,548	7,766,925	1,103,623
August.....	34,770,792	29,979,985	4,790,807	8,908,004	7,804,598	1,103,406
September.....	34,886,934	30,094,278	4,792,656	8,951,367	7,846,238	1,105,130
October.....	34,998,465	30,206,861	4,791,604	8,994,443	7,888,172	1,106,271
November.....	35,024,922	30,251,215	4,773,707	9,020,083	7,914,955	1,105,129
December.....	35,125,066	30,347,848	4,777,218	9,056,622	7,950,300	1,106,322
1980						
January.....	35,180,555	30,418,448	4,762,107	9,091,626	7,986,984	1,104,642
February.....	35,251,563	30,484,978	4,766,585	9,119,949	8,014,056	1,105,893
March.....	35,235,589	30,465,844	4,769,745	9,118,244	8,011,205	1,107,040
April.....	35,267,320	30,493,317	4,774,003	9,132,288	8,023,731	1,108,557
May.....	35,295,311	30,523,440	4,771,871	9,146,826	8,038,060	1,108,766
June.....	35,219,898	30,486,358	4,733,540	10,463,626	9,198,633	1,264,993
July.....	35,145,511	30,454,178	4,691,333	10,466,156	9,206,376	1,259,780

¹ Benefits paid from the OASI trust fund to retired workers and their dependents and to all survivors. Includes special benefits authorized by 1966 legislation for persons aged 72 and over not insured under the regular or

transitional provisions of the Social Security Act.

² Benefits paid from the DI trust fund to disabled workers and their dependents.

Receipt of Multiple Benefits

(Continued from page 19)

total numbers of persons estimated from the sample to have certain characteristics. Table II gives standard errors for estimated percentages. Linear interpolation may be used to obtain values not specifically shown. In order to receive standard errors that are applicable to a variety of estimates, a number of assumptions and approximations were required. As a result, the tables of standard errors provide an indication of the order of magnitude rather than the precise standard error for any specific attribute.

Table II.—Standard errors of estimated percentages of persons with a severe disability

Base of percentage (in thousands)	Estimated percentage					
	1 or 99	2.5 or 97.5	5 or 95	10 or 90	25 or 75	50
100.....	2.8	4.4	6.2	8.5	12.2	14.1
250.....	1.8	2.8	3.9	5.4	7.7	8.9
500.....	1.3	2.0	2.8	3.8	5.5	6.3
1,000.....	.9	1.4	1.9	2.7	3.9	4.5
2,500.....	.6	.9	1.2	1.7	2.4	2.8
5,000.....	.4	.6	.9	1.2	1.7	2.0
7,500.....	.3	.5	.7	1.0	1.4	1.6
8,720.....	.3	.5	.7	.9	1.3	1.5