

ORES Working Paper Series

Number 86

Early Retirees Under Social Security:
Health Status and Economic Resources

Michael V. Leonesio*
Denton R. Vaughan**
Bernard Wixon*

Division of Economic Research

August 2000

Social Security Administration
Office of Policy
Office of Research, Evaluation and Statistics

- * Social Security Administration, Office of Policy
9th Floor, ITC Building, 500 E Street, S.W., Washington, DC 20254-0001
- ** Bureau of the Census, Housing and Household Economics Statistics Division
FOB 3, Room 1473, Washington, DC 20233

Working Papers in this series are preliminary materials circulated for review and comment. The views expressed are the authors' and do not necessarily represent the position of the Social Security Administration. The papers have not been cleared for publication and should not be quoted without permission from the Office of Research, Evaluation, and Statistics (Paul N. Van de Water, Associate Commissioner: 202-358-6137).

Abstract

Some proposals to change the Social Security program to ensure long-run solvency would reduce or eliminate benefits to some early retirees. To what extent might those benefit reductions cause hardship for individuals with precarious financial circumstances and whose health appears to limit their ability to offset reductions in Social Security income through increased earnings? Our research is intended to identify the size and characteristics of the population that might be at risk as a consequence of such changes.

We examine the health and financial status of Social Security beneficiaries aged 62-64. The study employs two methods for assessing overall health status. The first is a modified application of Census Bureau health measures based on self-reports of health limitations by respondents in the Survey of Income and Program Participation (SIPP). We characterize these impaired individuals as “severely disabled” or “not severely disabled.” The second method uses a multivariate statistical model to predict the probability that an individual would be medically eligible for Social Security disability benefits.

The data source for the study is the 1990 SIPP. To those data we have exact-matched Social Security Administration (SSA) record data on benefits, earnings, and disability program evaluations. The resulting database permits an accurate description of the Social Security beneficiary status, health, income, and assets of the civilian noninstitutionalized population in 1991-92.

The central finding is that over 20% of early Social Security retirees have health problems that substantially impair their ability to work. In fact, among those aged 62-64 who are severely impaired, there are as many Old-Age and Survivors beneficiaries as there are beneficiaries under SSA’s two disability programs. The retirement program functions as a substantial, albeit unofficial, disability program for this age group. Moreover, the majority of the most severely impaired early retirees would not qualify for DI benefits.

I. Introduction

Social Security's Old-Age and Survivors Insurance (OASI) program faces long-run insolvency. Suggested remedies entail various combinations of program modifications that either reduce promised benefits or add to program revenues. Among the most frequently proposed changes are increases in the legislated retirement ages. Raising either the earliest entitlement age (EEA), currently 62, or the normal retirement age (NRA), currently 65 plus two months, would promote longer work lives, increasing Social Security revenues by the amount of the additional payroll taxes collected.¹ This paper focuses primarily on the first option, examining the health and economic circumstances of the U.S. population aged 62-64.

From the 1940s until as late as the 1970s, 65 was by far the most popular age to become a Social Security retired-worker beneficiary. Since 1961, insured workers have been permitted to receive benefits before reaching the NRA—specifically, as early as age 62, the EEA. During the ensuing decades, the average age of first receipt of Social Security retired-worker benefits has declined markedly, with entitlement at age 62 now elected by 60% of eligible workers.² Until this year, the individual's monthly benefit amount (MBA) has been reduced by 5/9 of 1% for each month prior to the NRA that benefits are received. Thus, a retired worker who began receiving benefits at age 62 received 80% of the full benefit that would have been paid at age 65. As the NRA begins its scheduled increase this year, the early entitlement reduction factor will be

Acknowledgments: We thank Patrice Cole for help in preparing detailed computer tabulations and Henry Ezell for data file development and computer tabulations. We are also grateful for comments from Tom Hungerford, Joyce Manchester, Nancy O'Hara, Evan Schechter, Paul Van de Water, Peter Wheeler, and, especially, Ben Bridges.

¹ In addition, increasing the NRA is equivalent to reducing lifetime benefits, at a rate of approximately 7% for each year of increase. Under current law, Social Security's NRA is scheduled to increase starting in 2000 for individuals who attain age 62 that year. The NRA increases by two months each year during 2000-2005, remains at age 66 for the ensuing 10 years, and resumes increasing by 2-month increments during 2017-2022 for individuals attaining age 62 during those years. Some proposals to increase the NRA would simply accelerate the already scheduled increase to age 67, while others would increase the NRA to even higher ages, perhaps eventually indexing it to increases in longevity.

²This figure excludes individuals receiving benefits under the Disability Insurance (DI) program, who ordinarily convert to retired-worker benefits at the NRA.

5/12 of 1% for each month of reduction in excess of 36 months. Therefore, when the NRA is 67, entitlement at age 62 will reduce the benefit paid to 70% of the full benefit payable at the NRA.

The adjustment for early benefit receipt is thought to be approximately actuarially fair. So, for many workers, the financial incentive to retire early posed by the EEA provision is modest or nonexistent because changes in the timing of entitlement would not alter the expected value of lifetime benefits received. Nevertheless, the EEA might encourage earlier retirement in two situations. First, for anyone with a shorter-than-average life expectancy, early receipt of benefits increases the expected value of lifetime benefits. Second, workers with insufficient liquid assets to finance retirement might be induced to retire when Social Security benefits are first available. Social Security's EEA provision affords those workers an opportunity to leave the labor market earlier than would otherwise be possible, circumstances that often pertain to workers who for any reason (for example, poor health) would like to retire but lack the means to do so without Social Security benefits. Benefit entitlement at age 62 is now so prevalent that some observers suggest that raising the EEA would have a larger effect on the timing of retirement than would the same increase in the NRA.

An important consideration in evaluating proposals to increase the EEA—or the NRA—is the extent to which older workers may be unable to work because of health problems. That concern raises a number of related questions. How many individuals opt for early receipt of Social Security benefits because of health problems that limit or prevent work? Would the program changes cause hardship for low-income individuals who could not afford to retire without the availability of Social Security benefits? Would the changes have comparatively larger adverse consequences for population subgroups such as specific racial or ethnic groups, unmarried women, or individuals in physically demanding occupations? Would Disability Insurance (DI) costs increase in response to a higher retirement age as persons with health

problems who previously simply retired early now applied for disability benefits, thereby offsetting some of the desired savings in OASI expenditures? And how many severely impaired older persons who are not insured by the DI program might seek assistance under the Supplemental Security Income (SSI) program for the blind and disabled?

In this paper we address some of these questions by examining the health and economic status of Americans in their early 60s. The primary data source for the analysis is the 1990 Survey of Income and Program Participation (SIPP), a nationally representative survey of the civilian, noninstitutionalized U.S. population conducted by the Bureau of the Census. The 1990 SIPP data provide detailed, reliable information about the financial resources of individuals and their families during a 32-month reference period spanning 1990-1992. The 70,000 respondents were interviewed 8 times at 4-month intervals. At the second, third, sixth, and seventh interviews, batteries of supplemental questions (Topical Modules) were asked about health status, functional limitations, and work disability. In addition, we have added data from the Social Security Administration's (SSA's) records on earnings, benefits, and disability claims to the respondents' survey information. The resulting restricted-access data file (1,090 observations) permits us to examine characteristics of older Americans categorized by Social Security program status.³

The Social Security Administration's interest in how older workers are affected by program changes that would prolong work lives dates to the early 1980s and culminated in the Retirement Age Study (see Department of Health and Human Services 1986). Two more recent studies have addressed this topic. Burkhauser, Couch, and Phillips (1996) analyze a sample of

³ The resulting sample size limits our ability to analyze the characteristics and behavior of some population subgroups. Most of the reported results are statistically significant at the 0.90 significance level or better. In Appendix B we provide sampling error information that allows readers to assess for themselves the reasonableness of our findings.

1,235 62-year-olds observed in the Health and Retirement Survey. They compare the health and financial assets of two groups -- those who took early benefits and those who did not. The authors find that the great majority of people who take early benefits are in good health, a result that is consistent with the currently established view that most retirements are essentially voluntary responses to financial incentives. They report that fewer than 10% of men who take early benefits are both in poor health and have no other source of pension income except Social Security benefits. The comparable figure for women is 20%.⁴

In another recent study, Smith (1999) confirms the basic finding of Burkhauser and others (1996) using several panels of the SIPP. He, too, concludes that most retirees who take early benefits do not report health problems that limit work, nor do they appear to depend on Social Security benefits to preclude poverty. Exploiting a larger sample than that used by Burkhauser and others (1996), Smith finds that about 10% of those taking early benefits report both a work disability and an income level that would fall below the poverty line were it not for their Social Security checks.

Using more comprehensive, multivariate health measures than were used in either study, we investigate the relationship between health status and demographic characteristics, income, poverty, assets, and health insurance coverage. Our research emphasizes the heterogeneity in the health and financial circumstances of persons aged 62-64 who were receiving retired-worker, dependent, or survivors benefits in early 1992. This disaggregated approach ensures that the characteristics of the severely impaired minority are not overshadowed by the characteristics of the healthier majority. We exploit restricted-access data in two ways. First, the data permit us to compare health/disability groups in terms of lifetime earnings. Second, we examine the financial

⁴Janice Olson (1999) uses information on lags in the benefit application process to question the extent to which Burkhauser and others (1996) distinguish 62-year-olds who took early benefits from those who did not.

circumstances of different beneficiary subgroups, allowing us to focus on each subgroup's potential vulnerability to reductions in Social Security income and, to a limited extent, on their eligibility for Disability Insurance benefits.

Our study confirms that most early OASI beneficiaries do not have a severe health problem. We find, however, that almost half of early beneficiaries have a health problem and that 22% report impairments that are sufficiently serious that they appear to limit or prevent work. We also find that OASI beneficiaries who report severe health problems have lower lifetime earnings and are more dependent on Social Security benefits than are other beneficiaries. Furthermore, these impaired individuals are disproportionately represented among lower-income beneficiaries in general and are more likely to be poor or near-poor than their healthy contemporaries. They have smaller amounts of financial assets and are less likely to have health insurance coverage. In general, OASI beneficiaries with the most severe health problems experience the most adverse economic circumstances. We estimate that some of those beneficiaries would qualify for disability benefits under SSA medical criteria, although substantial numbers of those who would qualify medically—most of whom are women—are not insured for disability benefits.

II. Health and Beneficiary Status of Persons Aged 62-64: An Overview

The measurement of health status poses both conceptual and practical issues, especially when dealing with a large, heterogeneous population. We use several health and disability measures to assess different levels of impairment severity. First, we make a basic distinction between healthy individuals and those having one or more health problems. Ultimately, we subdivide those with health problems into three categories. Two of those categories are modified versions of Census Bureau measures, and the third involves a statistical model developed at SSA.

Initially, we divide persons with health problems into two groups: those with severe disabilities and those with lesser impairments. The two measures are multivariate; that is, they do not rely on a single survey question (e.g., “Does [your] health or condition limit the kind or amount of work [you] can do?”). Using those measures, we define those with a health problem to include persons who report *either* health-related work limitations or *any* of the following characteristics: self-reported fair or poor health; a recent hospital stay; use of a wheelchair; use of a cane for six months or longer; a developmental, mental, or emotional disability; difficulty with a functional activity; difficulty with an activity of daily living (ADL); difficulty with an instrumental activity of daily living (IADL); or difficulty with housework. The designation “severely disabled” is similarly comprehensive but involves more stringent criteria such as being *prevented* from working or being *unable* to perform a basic functional task, an ADL, or an IADL.⁵ These health-status groups are based on modified versions of Census Bureau definitions employed in SIPP publications (McNeil 1993).⁶

Finally, a statistical model is used to estimate those with impairments that meet SSA’s definition of disability, an exacting medical standard that identifies individuals with the most severe impairments.⁷ In this paper, those individuals are designated “Simulated SSA Disabled.” Estimates from Dwyer and others (2000) in Table 1 suggest that, at least in terms of conventional

⁵ See Appendix A for a detailed definition of the health and disability categories used here as well as other concepts employed in the study. Appendices B and C provide documentation on standard errors and present additional statistical tables, respectively.

⁶ Of the 1.4 million individuals aged 62-64 with a health problem but not severely disabled, about 47% would be classified as disabled according to the usual Census Bureau definition employed in the SIPP context. The remaining individuals in that group are those who report being in fair or poor health, or who report at least one overnight stay in a hospital in the previous 12 months, but would not otherwise be classified as disabled by Census Bureau practice.

⁷ We estimate individuals who meet SSA’s medical criteria for disability benefits by using a statistical model of the first two levels (initial and reconsideration) of the disability determination process. The model captures the relationship between survey information (including demographic characteristics and self-reports of health) and SSA’s judgments about medical eligibility (Dwyer, Hu, Vaughan, and Wixon, forthcoming; Hu, Lahiri, Vaughan, and Wixon, forthcoming; Lahiri, Vaughan, and Wixon 1995). Those who receive disability benefits under DI or SSI are automatically considered medically eligible, even though about 200,000 are not estimated as eligible under our statistical model.

activity limitations, the Simulated SSA Disabled are similar to allowed disability applicants.⁸ Moreover, as expected, both groups are much more impaired than nonapplicants.

**Table 1.— Simulated SSA Disabled, Allowed Applicants, and Nonapplicants:
Comparing Activity Limitations**

[sample members aged 18-64, estimates in percents]

Activity Measures	Simulated SSA Disabled	Allowed Applicants	Nonapplicants
One or more functional limitations	52	60	10
One or more severe functional limitations	29	33	3
One or more ADL	18	20	2
One or more IADL	31	30	3

Table 2 shows the distribution of the population aged 62-64 by the health categories we employ in the study. The population is almost evenly split between persons reporting no health problems and those reporting one or more problems.⁹ Twenty-seven percent of persons in this age group meet our modification of the conventional Census definition of severe disability, while 22% have less serious health problems. Hence, more than half of those reporting a health problem have an impairment that we classify as severe. Finally, we estimate that 16% of all persons aged 62-64 meet SSA’s definition of medical eligibility. That group is about one-third as large as the group with at least one health problem and over 60% as large as the severely disabled group.

⁸ In the jargon of program administrators, an “allowed” applicant is a disability applicant who has been awarded benefits.

⁹ Note that the health/disability categories are not mutually exclusive. Members of the Simulated SSA Disabled group are drawn from all of the survey-based categories.

Table 2.— Persons Aged 62-64: Prevalence of Health Problems

Health or Disability Status	Number (in thousands)	Percent Distribution
Total	6,371	100
No health problems	3,224	51
One or more health problems	3,147	49
Not severely disabled	1,413	22
Severely disabled	1,734	27
Simulated SSA disabled	1,050	16

Because of the policy interest relating to persons in ill health who take early retirement benefits, we cross-classify health categories by beneficiary status (Table 3). Of the 6.4 million persons aged 62-64, 49% receive OASI benefits, 11% receive either DI or SSI/disabled benefits, and 40% receive no benefits. Predictably, receipt of DI or SSI benefits is clearly related to health or disability status. Taking into account all three programs, we see that 50% of persons with no health problems receive no benefits, while almost 70% of those with a health problem are on the OASI/DI/SSI rolls. Also, as expected, the proportion of beneficiaries is higher among the more severely impaired. Thus, about 79% of the severely disabled and 83% of the Simulated SSA Disabled receive OASI/DI/SSI benefits.

**Table 3.— Persons Aged 62-64:
Percent Distribution by Health Status and OASI/DI/SSI Beneficiary Status**

Health or Disability Status	[estimates in percents]			
	Total	OASI	DI and/or SSI	Neither
Total	100	49	11	40
No health problems	100	50	NA	50
One or more health problems	100	47	22	31
Not severely disabled	100	56	1	42
Severely disabled	100	39	40	21
Simulated SSA disabled	100	35	48	17

A less expected result is the extent to which early retirement under the OASI program provides support for those who are severely impaired: almost half of the severely disabled beneficiaries aged 62-64 receive early retirement benefits rather than disability benefits (39% versus 40%). Moreover, more than one-third of the persons estimated as Simulated SSA Disabled receive OASI benefits. Hence, the early retirement option supports not only those in good health or with less severe impairments but also a substantial number of those with the most severe impairments.

Although it is unremarkable that the participation rate in the DI and SSI programs increases with the severity of the health category, it is noteworthy that this holds true for the OASI program as well. If persons on the DI/SSI rolls are excluded in all health categories, and participation rates for OASI are calculated for the remaining individuals, 50% of those reporting no health problems are on the OASI rolls. The participation rate for OASI rises to 57% for those with health problems but not severely disabled, to 65% for those with a severe disability, and to 67% for the Simulated SSA Disabled.

Estimates for demographic subgroups often found to be economically disadvantaged are shown in Table 4. Minorities constitute 10% of beneficiaries aged 62-64. Early retirees with one or more health problems are somewhat more likely to list their race/ethnicity as black, African-American, Hispanic, or Latino than are those who report no health problems (13% versus 7%). Widowed, divorced, and separated individuals are overrepresented among those estimated to be Simulated SSA Disabled (53%) compared with those who report no health problems (26%). Much research shows that living arrangements are strongly associated with aged poverty. Early beneficiaries estimated to be Simulated SSA Disabled are considerably more likely to live alone than beneficiaries reporting no health problems. That pattern does not hold for early beneficiaries in the less severe impairment categories. Finally, the severely

disabled and the Simulated SSA Disabled are markedly more likely to have completed less than 12 years of schooling than those reporting no health problems (45% and 53%, respectively, versus 25%).

Women constitute a clear majority (63%) of OASI beneficiaries not reporting a health problem, possibly because many women time retirements to coincide with those of their husbands who are several years older. Among those with “one or more health problems but not severely disabled,” women account for a slim majority (53%). Nevertheless, women represent 63% of those with a severe disability and a clear preponderance of those who meet SSA’s medical definition of disability (79%). Why are the early beneficiaries we classify as most disabled found to be disproportionately female? In the next section, which considers work histories and beneficiary status, we examine that question in some detail.

**Table 4.—OASI Beneficiaries Aged 62-64:
Selected Demographic Characteristics, by Health and Disability Category**

[estimates in percents unless otherwise indicated]

Characteristic	Total	No Health Problems	With One or More Health Problems			
			Subtotal	Not Severely Disabled	Severely Disabled	Simulated SSA Disabled
Total (in thousands)	3,102	1,626	1,476	793	682	369
Female	60	63	58	53	63	79
Black or Hispanic	10	7	13	10	15	12
Widowed, divorced, separated	29	26	31	31	31	53
Living alone	22	20	24	26	22	41
Schooling < 12 years	31	25	37	30	45	53

III. Health, Work, and Beneficiary Status

Health impairments affect both the amount and type of work performed, although statistical relationships between workers' health and the physical demands of jobs are not always easy to document. The main reason for that difficulty is that over time, members of the labor force are likely to gravitate toward employment that is compatible with the circumstances of their health. Individuals in robust health can choose occupations that are more physically demanding, while those with health problems might well enter less strenuous occupations. That sorting of workers results in a positive association between the physical demands of jobs and the good health of the workforce. But in many cases, physically demanding occupations gradually take their toll on workers' health, resulting in older workers who report health impairments and a disproportionate number of health-related retirements. Table 5 shows that when early beneficiaries are classified by their most recent jobs, retirees with health problems are generally less likely to have been employed in white-collar occupations (defined as managerial, professional, technical, sales, or administrative occupations) and more likely to have worked in blue-collar jobs (defined as service, production, craft, and repair occupations, or working as operators, fabricators, or laborers).

**Table 5.—OASI Beneficiaries Aged 62-64:
Occupation in Most Recent Job¹, by Health and Disability Category**

[estimates in percents unless otherwise indicated]

Characteristic	No Health Problems	With One or More Health Problems			Simulated SSA Disabled ²
		Subtotal	Not Severely Disabled	Severely Disabled	
Number (in thousands)	1,310	1,117	637	479	181
Most Recent Occupation (percentage distribution)	100	100	100	100	100
White-collar	63	45	50	38	51
Blue-collar	37	55	50	62	49

¹ Sample restricted to those respondents who hold a job or own a business at some time during the 13-year period prior to the wave 2 interview in mid-1990.

² Estimate based on fewer than 50 sample cases.

Other aspects of the work experience of groups differentiated by health and disability status include current, recent, and lifetime measures of earnings in covered employment (Table 6). We would not expect to see a large proportion of retirement beneficiaries currently engaged in work, but a substantial minority of healthy early retirees worked in periods preceding the survey. Differences in their earnings activity by health/disability status are evident. Few who have a severe disability or are Simulated SSA Disabled had average covered earnings above the earnings-test exempt amount (\$590 per month in 1991), especially when compared with those who either have no health problems or have less severe impairments. In some cases, health problems affect earnings capacity over a longer period.¹⁰ In considering long-term work effort, we again find that such efforts are differentiated by health and disability status.

¹⁰ Of course, other important factors such as occupational experience, educational attainment, and, in the case of women, social roles also have important effects on lifetime earnings. Because the disabled are more likely to have worked in lower-paying occupations and to have lower levels of educational attainment, their expected lifetime earnings are lower even in the absence of the adverse effects of their health.

**Table 6.—OASI Beneficiaries Aged 62-64:
Current, Recent, and Lifetime Work and Earnings, by Health and Disability Category**
[estimates in percents unless otherwise indicated]

Characteristic	No Health Problems	With One or More Health Problems			
		Subtotal	Not Severely Disabled	Severely Disabled	Simulated SSA Disabled
Total number (thousands)	1,626	1,476	793	682	369
Average monthly 1991 covered earnings above \$590	13	9	13	4	3
Covered earnings in at least 4 of the past 5 years	36	39	51	26	18
Did not hold a job or own a business in the past 13 years	19	24	20	30	51
Median annual lifetime indexed earnings	\$9,318	\$8,685	\$9,660	\$5,837	\$2,332

A common pattern emerges from the four measures of earnings and work by health/disability category. Persons with nonsevere disabilities are similar to those with no health problems, suggesting that the work effort of the former group has been little affected by their impairments. The severely disabled have been affected considerably more by their impairments: 30% have been jobless in each of the past 13 years, and their median lifetime earnings are only 60% as large as those of persons who are less severely impaired.¹¹ Hence, in terms of long-term work effort, the distinction between those who are and are not severely disabled is telling.

The Simulated SSA Disabled exhibit even less work activity, especially when we consider long-term measures. Fifty-one percent report no employment or business ownership during the 13 years prior to the survey, consistent both with the finding that 79% of this group

¹¹ The measure of earnings presented here refers to taxable earnings from covered employment in the form of wages or self-employment income for the years 1951-91. For details, see Appendix A.

are women and with published estimates that women aged 62-64 are less likely to be disability insured than men of the same age—about 50% versus 80%.^{12,13}

Although the small size of our sample prevents detailed analysis of the Simulated SSA Disabled group, we can comment on three important subgroups that are not mutually exclusive. The majority of early OASI beneficiaries who are Simulated SSA Disabled apparently do not qualify for DI benefits because of the “recent work” criterion. That subgroup includes the 51% with no employment or business ownership during the 13 years prior to the survey. A second subgroup (31%) receives OASI dependent benefits and a large majority of this group do not qualify for DI benefits because they have insufficient quarters of coverage. These findings suggest that many female early beneficiaries with severe health problems may be particularly vulnerable to policies that would curtail early benefits because their work histories suggest that they may not be eligible for DI benefits.¹⁴ Finally, 30% of the Simulated SSA Disabled group were denied disability benefits at some point in the past or shortly after the survey.¹⁵ Members of the three subgroups collectively make up 66% of the Simulated SSA Disabled category.

In sum, our analysis of these subgroups suggests that relatively few of the Simulated SSA Disabled appear to meet both the medical and insurance criteria for the DI program. That finding contradicts the oft-expressed hypothesis that raising the EEA would cause many to

¹² Except for the blind, the test of substantial recent work activity requires that an individual at the ages under consideration must have worked in covered employment at least five of the ten years prior to the onset of a disability. If that requirement is met, the individual is said to be disability insured.

¹³ See the *Annual Statistical Supplement* to the *Social Security Bulletin* for 1991, Tables 4.C2 and 4.C5. Note that this gap has narrowed. According to the *Annual Statistical Supplement* for 1999, 61% of women in their early sixties were disability insured, compared with 79% of men.

¹⁴ We are unable to explore this issue further in the current data set because of the inadequate sample size for female OASI beneficiaries with severe medical problems. We note, however, that the size of the published gender differential in the disability insured rate is three times its standard error, making it unlikely that the discrepancy is due to pure chance.

¹⁵ We used SSA administrative records to learn whether sample members classified as Simulated SSA Disabled were denied DI or SSI benefits in the six years prior or the two years after the survey interview. The data on application outcomes cover the period 1986-93 and provide information regarding the first two levels of adjudication review only (initial and reconsideration). Some of the denied applicants may have experienced some deterioration in their health by the time of the survey, while others may have been misclassified by our statistical model.

switch to disability benefits, resulting in a surge in DI enrollment. To understand this finding, consider an underappreciated sorting process implemented in SSA district offices. Claims representatives are obliged to compare benefits when an applicant is eligible under more than one program, and the applicant is awarded the highest benefit he or she is eligible to receive. In practice, an applicant who is 62-64 years of age and has a serious impairment would typically file two applications—one for early retirement benefits and the other for DI benefits. The applicant would begin receiving (actuarially reduced) early retirement benefits immediately, and if DI benefits were allowed several months later, the applicant would switch to (unreduced) DI benefits.¹⁶ That is, by virtue of their eligibility for early retirement, such applicants are not exposed to the risk of waiting without any benefits for an uncertain DI award. That opportunity for a “no risk” DI application may explain why we observe few sample members receiving early retirement benefits who are fully eligible to take DI if they become ineligible for early retirement benefits. Thus, any increase in DI enrollment following a rise in the EEA would probably be modest.

Returning to Table 6, we observe that median annual lifetime earnings for the severely disabled or Simulated SSA Disabled are much lower than for the healthier beneficiaries. Low lifetime earnings for those who are most impaired often signal substantial dependence on Social Security income in old age. Low lifetime earnings also usually signify limited opportunities to acquire other financial resources for support during old age, such as financial assets and private pensions.

¹⁶ We are grateful to Dorothy Watson for alerting us to this feature of program administration. Earlier studies have mentioned this feature, for example, Packard (1985) and Packard and Reno (1989). This point suggests that analysts predicting early retirement should incorporate the condition that most early retirees are not eligible for DI benefits.

IV. Economic Resources of Health-Impaired Early Beneficiaries

The primary policy concern in this investigation is to determine the extent to which health-impaired individuals who apply for early Social Security benefits might be at risk if the EEA or NRA is increased. “At risk” includes being financially vulnerable. In this section we examine four aspects of the economic well-being of early beneficiaries: (1) family income and poverty status; (2) financial dependence on Social Security benefits; (3) financial assets; and (4) health insurance coverage.

Family Income and Poverty Status

Table 7 presents measures of family income and poverty, by health and disability status.¹⁷ Early OASI beneficiaries with health problems are more likely to be found in the lowest two quintiles (62%) than are those with no health problems (46%). The percentage falling into the lowest two quintiles is even greater for the Simulated SSA Disabled group (77%). Perhaps the most striking disparity involves median family income: the median for the most impaired group is about half of the median for beneficiaries with no health problems.

¹⁷ Quintiles are computed using the distribution of family incomes for all persons aged 18-64.

**Table 7.—OASI Beneficiaries Aged 62-64:
Family Income and Poverty Status, by Health and Disability Category**

[estimates in percents unless otherwise indicated]

Characteristic	No Health Problems	With One or More Health Problems			
		Subtotal	Not Severely Disabled	Severely Disabled	Simulated SSA Disabled
Total number (in thousands)	1,626	1,476	793	682	369
Total family income ¹ (percentage distribution)	100	100	100	100	100
Lowest quintile	23	35	31	39	65
2nd quintile	23	27	29	24	12
3rd quintile	26	19	19	18	7
4th quintile	15	9	7	12	9
Highest quintile	13	11	14	7	7
Median family income	\$10,399	\$7,689	\$8,141	\$7,528	\$5,241
Poverty status					
Poor	4	12	8	16	25
Poor or near-poor	8	19	13	26	36
Family income \geq 4 times poverty line	41	22	26	18	13

¹ Four-month income, wave 7 interview, late 1991 to early 1992.

The poverty and near-poverty rates across health categories reflect the strong relationship between health and the distribution of family income. The rates shown for early OASI beneficiaries in good health (4% and 8%, respectively) are about the same as the rates for healthy persons aged 62-64 who receive neither OASDI nor SSI benefits (from unpublished tabulations). The picture for early beneficiaries with health problems is quite different: they are much more likely to be poor or near-poor, compared with those without health problems. Furthermore, the rates for persons in the two most severely impaired categories are nominally 3 to 4 times higher. As a corollary, we observe the same relationship at the upper tail of the income distribution. For beneficiaries with no health problems, 41% report family incomes at least four times the poverty level. The rates are considerably lower for those with health problems (22%), especially for the Simulated SSA Disabled (13%).

In fact, for a substantial minority of early Social Security beneficiaries, impaired health is associated with precarious financial circumstances. Because increases in the EEA or the NRA would eliminate or decrease the benefits of early beneficiaries, we examine the importance of OASI benefits to the economic well-being of their families.

Dependence on Social Security Benefits

Social Security often accounts for a substantial share of family income within the OASI beneficiary population. Table 8 presents several measures of the extent to which groups differentiated by health are financially dependent on Social Security benefits. The results consistently show that those most severely disabled are more dependent on their Social Security benefits. For example, 68% of healthy early beneficiaries depend on Social Security benefits for at least a quarter of family income, compared with 82% for the most severely disabled group. If we restrict attention to families that depend on Social Security benefits for at least half of their income, the estimates range from 32% for those with no health problems to 58% for those estimated to be Simulated SSA Disabled.

**Table 8.—OASI Beneficiaries Aged 62-64:
Dependence on Social Security Benefits, by Health and Disability Category**

[estimates in percents]

	No Health Problems	With One or More Health Problems			
		Subtotal	Not Severely Disabled	Severely Disabled	Simulated SSA Disabled
Social Security as a percentage of family income					
At least 25%	68	72	69	76	82
At least 50%	32	39	35	44	58
Kept from poverty by Social Security benefits	19	25	25	24	36
Kept from poverty or near-poverty by Social Security benefits	22	27	29	25	33
Families with no earnings	55	59	57	61	76
Families with no property income	11	25	19	31	37
Families with no other income	23	33	29	37	52

As Table 8 suggests, Social Security benefits have a major impact in alleviating poverty. Among persons with no health problems, Social Security benefits keep 19% of early beneficiaries out of poverty.¹⁸ The program’s antipoverty role increases as health problems and disability become more severe. Compared with the other groups with a health problem, the Simulated SSA Disabled—overwhelmingly women—are especially vulnerable financially. The

¹⁸ That is, subtracting OASI benefits from total family income would reduce the family’s income below the official poverty line. Some critics would argue that the text’s statement is misleading in the sense that in the absence of OASI benefits, individuals and their families might alter their economic behavior and thereby increase other sources of income to avoid poverty. That point notwithstanding, such dependency calculations are common in the poverty literature.

estimates in Table 7 indicate that the poverty rate for this group is 25%, even with benefits. Without Social Security benefits, the resulting poverty rate would be 61%.¹⁹

Table 8 also summarizes information on the receipt of income from earnings, property, and other sources apart from Social Security. The principal source of other income in this age range is employer pensions, which are received by 60% of male and 30% of female retired-worker beneficiaries aged 62-64.²⁰ It is not surprising that the majority of early beneficiaries in all health categories have no earnings, given their early entitlement decision, nor is it surprising that those with the most serious impairments are the least likely to work. But there are also marked differences between the percentage of early OASI beneficiaries receiving property income and other income (primarily pensions) across the health and disability categories. Property income and pensions represent resources typically accumulated during years of work as insurance against hardship in old age. The high rates of nonreceipt for those income sources among individuals with the most severe impairments underscore the cumulative long-term effects of disabling conditions.

Financial Assets

The discussion now shifts from income to the asset holdings of early OASI beneficiaries. We restrict attention to financial assets under the direct control of their owners. These assets yield property income flows and represent resources that could be liquidated to meet abnormal expenses or to offset either temporary or permanent declines in income.

¹⁹ One unusual aspect of Table 8 merits comment. That is, the percentage of Simulated SSA Disabled kept from poverty by Social Security benefits (36%) exceeds the figure for those being kept from poverty or near-poverty (33%). The reason for this finding is that the elimination of Social Security income would cause some individuals to move from the near-poor to poor category.

²⁰ *Annual Statistical Supplement to the Social Security Bulletin*, 1992, Table 5.A11.

**Table 9.— OASI Beneficiaries Aged 62-64:
Financial Assets by Health and Disability Category**

[estimates in percents unless otherwise indicated]

Attribute	Total	No Health Problems	With One or More Health Problems			
			Subtotal	Not Severely Disabled	Severely Disabled	Simulated SSA Disabled
Percentage with:						
None (or negative)	7	2	12	9	17	25
Less than \$500	15	9	23	18	27	36
Less than \$10,000	38	29	48	45	52	62
\$10,000 or more	62	71	52	55	48	38
\$25,000 or more	46	54	38	41	34	24
Median financial assets	\$20,845	\$32,600	\$10,668	\$14,149	\$8,523	\$800

Table 9 shows that the distribution of median financial assets by impairment severity varies even more than the distribution of median family income (Table 7). That greater variation reflects the long-term effect of severe impairments on work and asset accumulation. For example, the median value of assets of those with no health problems (\$32,600) is roughly four times the median for those with severe disabilities (\$8,523) and 40 times the median holdings of the Simulated SSA Disabled (\$800). Of the severely disabled and Simulated SSA Disabled, more than one in four persons has less than \$500 in financial assets. To provide some perspective on those figures, the average monthly benefit for a retired worker in the 62-64 age group during the study's reference period (1991-92) was \$540.²¹ Financial assets of that magnitude underscore the probable reliance on OASI benefits. Note, however, that there are many health-impaired early retirees whose financial circumstances are far better. A substantial minority (24%) of even the most severely disabled beneficiaries report financial assets in excess

²¹ *Annual Statistical Supplement to the Social Security Bulletin*, 1991, Table 5A1.

of \$25,000. As one might expect, the higher levels are much more common among beneficiaries with no health problems, with 54% reporting holdings of \$25,000 or more.

Health Insurance Coverage

Affordable health insurance is a particularly important aspect of financial security for early OASI beneficiaries because 48% of them report health problems. Health-impaired beneficiaries aged 62-64 are generally not as well off financially as their healthier counterparts, and Medicare coverage is not available until age 65.^{22, 23} Table 10 shows that 13% of those without health problems in this age group are not covered by health insurance. The probability of being uninsured increases somewhat among the health impaired, with the probability being highest for those with the most severe health problems (23%-24%), underscoring the economic vulnerability of that segment of the population. Although private-sector insurers dominate in all health categories, the role of public provision increases modestly with the severity of health problems.

²² Del Bene and Vaughan (1992) consider the joint distribution of income, assets, health insurance coverage, and health status among the aged. Older persons in poor health are likely to have less comprehensive health insurance coverage and fewer economic resources for meeting acute health care needs than their more healthy contemporaries.

²³ About 4% of early beneficiaries with health problems report Medicare coverage in the SIPP interview, which appears to be anomalous. Respondents may confuse Medicare and Medicaid. Alternatively, some misreporting might occur because individuals are automatically sent their Medicare card prior to their 65th birthday, which they might misinterpret as immediate coverage. Closer inspection of the card would reveal that the coverage period has not yet begun. If the anomaly is not due to Medicare/Medicaid confusion, the fraction of health-impaired early retirees lacking health insurance would be 3 to 4 percentage points higher, raising the noncoverage rate to 25-30% for those with more severe impairments.

**Table 10.—OASI Beneficiaries Aged 62-64:
Health Insurance Coverage by Health and Disability Category**

[estimates in percents]

Coverage Status	Total	No Health Problems	With One or More Health Problems			
			Subtotal	Not Severely Disabled	Severely Disabled	Simulated SSA Disabled
Not covered	16	13	20	17	23	24
Covered	84	87	80	84	77	77
Private	78	86	69	76	60	54
Current or former employer	35	40	29	31	27	14
Another family member's policy	24	30	17	20	13	12
Other	19	16	23	25	20	29
Public	6	1	12	7	17	23

V. Conclusions

Using a set of comprehensive health measures, we estimate that over 20% of OASI beneficiaries aged 62-64 have health problems that substantially impair their ability to work. In fact, a striking finding emerges: in this age range there are as many severely disabled persons who receive OASI benefits as disability benefits. A central message of this report is that OASI functions as a substantial, albeit unofficial, disability program for this age group.

Compared with persons who have no health problems (roughly half of early beneficiaries), the severely disabled (22% of the beneficiary group) are less likely to have completed high school and more likely to belong to racial or ethnic minority groups. Table 11 summarizes the substantial differences in financial circumstances for healthy and severely disabled early OASI beneficiaries. Within-group differences of the magnitude shown in the table highlight the importance of subgroup analysis to ensure that the characteristics of the healthy majority do not overshadow the financial vulnerability of the impaired minority. While there are

substantial differences in the levels of current income between the two groups, when we consider the long-term effects of limited work activity and asset accumulation, the problems of economic inequality and vulnerability become more pronounced. The severely disabled have been predominantly blue-collar workers whose lifetime earnings are roughly 63% as large as those of persons in good health. Their financial assets are one-fourth as large. Moreover, we estimate that without OASI benefits, the severely disabled would have a poverty rate of 40%.

**Table 11.—OASI Beneficiaries Aged 62-64:
Differences in Financial Well-Being by Health Status**

	No Health Problems	Severely Disabled
Median family income	\$10,399	\$7,528
Did not hold a job or own a business in the past 13 years	19%	30%
Median annual lifetime indexed earnings	\$9,318	\$5,837
Median financial assets	\$32,600	\$8,523

How severe are the impairments of those taking early retirement benefits? When one contrasts the different rationales of the early retirement and disability programs, a natural surmise is that individuals with the most severe impairments are likely to receive disability benefits, while those with less severe impairments would take (actuarially reduced) early retirement benefits. Our findings are not consistent with that view. Although 22% of early beneficiaries are severely disabled using our modified Census measure, we also estimate that 12% of early beneficiaries would meet a more exacting criterion—SSA’s medical standard for disability benefits.

What do we know about the “Simulated SSA Disabled”? Compared with other impairment groups, they are more likely to be living alone and more likely to be poor or near-poor. Moreover, the great majority—almost 80%—are women. If members of that group were to lose their OASI benefits, their poverty rate would increase to 61%. The size of our sample prevents further analysis of the Simulated SSA Disabled group, but we were able to discern important subgroups. One subgroup includes persons taking retired-worker benefits who, according to survey information, have not held a job in many years. Members of that subgroup would not qualify for DI benefits because they do not satisfy the “recent work” criterion. Another subgroup comprises dependent beneficiaries, many of whom also would not qualify for DI benefits. The final subgroup includes persons who were denied disability benefits.

These findings help us to understand the relationship between the early retirement program and the DI program. While early retirement represents an unofficial disability program, many of the most severely disabled would not qualify for DI were they to lose their early retirement benefits. That finding is consistent with the view of program administrators that, under customary screening procedures implemented in Social Security field offices, the severely impaired who apply for early OASI benefits also apply for DI benefits if they are disability insured. That practice implies that raising the EEA would have only a modest impact on DI enrollment. Yet it also implies that—without changes in eligibility criteria—the DI program will not serve as a safety net for many of the most severely disabled early beneficiaries if the EEA is raised.

Appendix A: Definition of Terms

Activities of daily living (ADLs). The ADLs covered in the survey included getting around inside the home, getting in or out of bed or a chair, bathing, dressing, eating, and using the toilet.

Average indexed lifetime annual earnings (1951-1991). The annual taxable covered earnings of each sample member during the period 1951-1991 were indexed on the basis of the ratio of the national average annual wage in 1991 to the national average annual wage corresponding to each earnings year. The indexed earnings amounts for each year after 1950 in which the individual was at least 22 years of age were summed and averaged. The usual 5-year dropout adjustment was not employed. Note that taxable covered earnings cover wages and earnings from self-employment that are considered to be in covered employment and subject to FICA taxes. Thus, earnings above the taxable maximum and from noncovered employment are not considered.

Disability. Under the Census definition, a person was considered to have a disability if the person met any of the following criteria: (a) used a wheelchair; (b) had used a cane or similar aid for 6 months or longer; (c) had difficulty with a functional activity; (d) had difficulty with an ADL; (e) had difficulty with an IADL; or (f) was identified as having a developmental disability or a mental or emotional disability. In addition, a person was considered to have a disability if the person had a condition that made it difficult to do housework or that limited the kind or amount of work the person could do at a job.

Disability Insurance (DI) beneficiaries. Persons receiving a Social Security benefit as a disabled worker, an adult disabled in childhood, or a disabled widow who reported a monthly Social Security benefit in the survey for one or more of the four months prior to the wave 7 interview and received one of the specified benefits for December 1991. Identification of type of benefit was made on the basis of the Master Beneficiary Record Beneficiary Identification Code (BIC). Interviews for the seventh wave were conducted in February through May 1992.

Functional activities. The functional activities covered in the survey included seeing, hearing, having one's speech understood, lifting and carrying, walking up a flight of stairs, and walking.

Household financial assets. The value of interest-earning assets held at financial institutions, including passbook savings accounts, money-market deposit accounts, certificates of deposit, and interest-earning checking accounts; other interest-earning assets such as money-market funds, U.S. government securities, municipal or corporate bonds, savings bonds, and IRA and Keogh accounts; equities in stocks and mutual fund shares and in incorporated self-employed businesses or professions; mortgages held for sale of real estate; and other financial assets not otherwise specified.

Instrumental activities of daily living (IADLs). The IADLs covered in the survey included going outside the home, keeping track of money or bills, preparing meals, doing light housework, and using the telephone.

Old-Age and Survivors Insurance (OASI) beneficiaries. Persons receiving a Social Security benefit as a retired worker or the dependent or survivor of a retired worker who reported a monthly Social Security benefit in the survey for one or more of the four months prior to the

wave 7 interview and received one of the specified benefits for December 1991. Identification of type of benefit was made on the basis of the Master Beneficiary Record Beneficiary Identification Code (BIC). Interviews for the seventh wave were conducted in February through May 1992.

Poverty and near-poverty. Poverty status is measured by comparing the individual's family income for the 4-month survey reference period with one-third of the official annual poverty threshold adjusted to the price level appropriate to the subannual time period. Persons with family incomes below the corresponding threshold are classified as poor; those with family incomes below 1.25 times the corresponding threshold are classified as poor or near-poor. Dividing family income by the corresponding family threshold yields the family income expressed as a fraction or multiple of the poverty line, i.e., 1.00, 1.25, 4, etc.

Estimates of poverty and near-poverty status based on 1991 calendar year family income were also produced. At the level of study subgroups, only inconsequential differences were noted between the 4-month and calendar year poverty-status classifications. All estimates of poverty and near-poverty status given in the study refer to those based on incomes for the 4-month reference period and their corresponding thresholds.

Property Income. Property income includes income from regular (or passbook) savings accounts; money-market deposit accounts; certificates of deposit; NOW, Super NOW, or interest-earning checking accounts; money-market funds; U.S. government securities; municipal or corporate bonds; other interest-earning assets; stocks or mutual fund shares; rental property; mortgages; royalties; and other financial investments.

Quintile cut-points. The values of the upper bounds for the lowest, 2nd, 3rd, and 4th quintiles for the following measures are given in Table C-7: average indexed annual earnings, 1951-91; household financial assets; and 4-month total family income.

Severe disability. Under the Census definition, persons were classified as having a severe disability if they (a) used a wheelchair or had used another special aid for 6 months or longer; (b) were unable to perform one or more functional activities or needed assistance with an ADL or IADL; (c) were prevented from working at a job or doing housework; or (d) had a selected condition including autism, cerebral palsy, Alzheimer's disease, senility or dementia, or mental retardation. In addition, the Census Bureau included individuals aged 18-64 who reported receipt of income from Supplemental Security Income or were covered by Medicare. Such individuals were not included in the definition of severe disability for purposes of this study.

Simulated SSA Disabled. Persons simulated to meet SSA's medical definition of disability. The simulation is based on a statistical model of the relationship between the body of demographic, work experience, and health information available from the 1990 panel of the Survey of Income and Program Participation and the outcome of steps 2 through 5 of SSA's sequential disability determination process for applicants identified via exact match between the survey and SSA administrative records (Lahiri and others 1995; Hu and others forthcoming). Persons were simulated to meet the agency's medical definition of disability irrespective of the substantial gainful activity (SGA) test. Model coefficients were subsequently employed to simulate eligibility status for the nonapplicant population. The simulation included a preliminary selectivity correction (see Dwyer and others 2000). Note that persons simulated to be

SSA medically eligible are not required to be classified as severely disabled according to the definition given above.

Supplemental Security Income (SSI) beneficiaries. Persons who reported a federally administered SSI benefit in one or more of the four months prior to the wave 7 interview. Interviews for the seventh wave were conducted in February through May 1992.

With a health problem. Persons who (a) meet the criteria for disability, (b) were reported to be in fair or poor health, or (c) had at least one overnight stay in a hospital in the 12 months prior to the interview are considered to have a health problem.

With a health problem but not severely disabled. All persons classified as having a health problem but not classified as severely disabled.

Appendix B: Sampling Errors and Inference

The SIPP-based estimates provided in the report's tables are based on a sample and, as such, are subject to sampling error. The reader may find it helpful to refer to standard errors for population and subpopulation totals and percentages to assess the degree of uncertainty associated with a given estimate.

Tables B-1 and B-2 provide generalized standard errors for estimated numbers and percentages. Those standard errors are based on generalized variance parameters that were estimated for the wave 2 interview of the 1990 SIPP panel for OASDI beneficiaries and SSI recipients using the half-sample replication method (see Bye and Gallicchio 1993). However, they depart from those provided by Bye and Gallicchio in that they have been adjusted to account for sample loss occurring after wave 2.²⁴ Because it is likely that not all magnitudes for estimates of interest will be found in tables B-1 and B-2, generalized "a" and "b" parameters developed on the basis of the half-sample replication technique are provided and may be used to derive an approximate standard error for any given population total, subtotal, or percentage according to formulas (1) and (2).

$$S_x = \sqrt{ax^2 + bx} \quad (1)$$

Formula (1) will provide the approximate standard error (S_x) of a population total or subtotal where x is the estimated size of the subpopulation in thousands and a and b are the generalized variance parameters ($a= 0.00063$; $b= 7.955$).

For example, from table B-1 we see that the standard error for a population total of 793,000 is given as 82,000 and for a population total of 1,000,000 the standard error is given as 93,000. However, standard errors for population totals between those two figures are not provided. Using formula (1), the approximate standard error of 875,000 is:

$$S_x = \sqrt{(0.00063)(875)^2 + (7.955)(875)} = 86.3$$

Thus the approximate 0.90 confidence interval for an estimate of 875,000 (1.6 standard errors) is from about 737,000 to about 1,013,000, while the approximate 0.95 confidence interval (2 standard errors) is from 702,000 to 1,048,000.

The approximate standard error of a percentage may be derived on the basis of:

$$S_{(x,p)} = \sqrt{\frac{b}{x}(p)(100 - p)} \quad (2)$$

²⁴ Inclusion in the sample required that persons be successfully interviewed in waves 2, 3, 6, and 7 of the 1990 panel and have a valid Social Security number. When combined with the effects of attrition subsequent to the second interview, the restrictions reduced the overall sample size from the wave 2 time period by approximately 25% and by about 20% for OASDI and SSI recipients. Weights for the remaining sample were adjusted to reproduce the population estimates for the wave 7 public-use file by age and marital status. In addition, the standard error tables and the generalized variance parameter "b" were adjusted upward to account for the additional sample attrition based on the assumption of a fixed design effect of about 1.3, consistent with Bye and Gallicchio's work.

where x is the population total in thousands forming the base of the percentage, p is the percentage ($0 \leq p \leq 100$), and b is the generalized variance parameter defined earlier. For example, suppose one observes that 20% of a subpopulation consisting of a total of 875,000 individuals is shown to have a given attribute of interest. From formula (2), the standard error would be:

$$S_{(x,p)} = \sqrt{\frac{7.955}{875}(20)(100 - 20)} = 3.81$$

Thus, the approximate 0.90 confidence interval for this percentage (1.6 standard errors) is from 13.9% to 26.1%, while the approximate 0.95 confidence interval (2 standard errors) would be from 12.4% to 27.6%.

The formula for deriving the standard error of the difference between two estimates x and y is:

$$S_{(x-y)} = \sqrt{S_x^2 + S_y^2 - 2rS_xS_y} \tag{3}$$

where S_x and S_y are the standard errors of the estimates x and y , and r is the correlation coefficient between the characteristics estimated by x and y . The estimates can be numbers, averages, percentages, ratios, etc. Underestimates or overestimates of the standard error of a difference result if the estimated correlation coefficient is overestimated or underestimated. Estimates of r for the characteristics included in the accompanying tabulations are not available. However, for static, cross-sectional estimates of the sort provided here, r is often assumed to be zero. For example, suppose that 37.5% of a given population subgroup of 875,000 individuals is estimated to be work limited, while only 15.8% of another group of 300,000 is estimated to have the same characteristic. From formula (2), the standard errors of those percentages are approximately 4.62% and 5.94%, respectively. Assuming that the two estimates are not correlated, the standard error of the difference of 21.7 percentage points is :

$$S_{(x-y)} = \sqrt{4.62^2 + 5.94\%^2} = 7.52\%$$

To determine whether the two percentages differ significantly at the 0.90 confidence level, multiply the standard error of the difference by 1.6 and compare the result (about 12.0 percentage points) to the estimated difference of 21.7 percentage points. Because the difference is larger than 1.6 times the standard error of the difference, one may conclude that the estimates of 15.8% and 37.5% differ at the indicated confidence level. To be considered statistically significant at the 0.95 confidence level, the estimated difference would have to be at least as large as twice the standard error of the difference, which it is by a small margin ($7.52 \times 2 < 21.7$).

Bye and Gallicchio's generalized variance curve was estimated on the basis of 126 population subgroups with unweighted sample counts of 25 or more. (In the context of the sample they used, a cell of 25 would yield an expected population estimate of approximately 115,000 individuals with a coefficient of variation (c.v.) of about 0.23 for the estimate.) In the present context, the expected population estimate stemming from an unweighted cell count of 25 would be approximately 154,000 individuals. However, a conservative rule of thumb would

suggest considerable caution in making inferences concerning estimates based on fewer than 50 sample cases (population sizes of less than about 300,000 individuals in the present context). Despite what might seem to be reasonably acceptable c.v.'s stemming from the generalized variance parameters and the associated look-up tables for estimates for populations as small as 200,000, considerable caution should be exercised in interpreting them in view of the very small sample sizes on which they are based.

Table B-1.-- Standard errors for estimated population totals¹

Estimate in 1000s	Standard error	Coefficient of variation
75	24	0.327
100	28	0.283
155	35	0.228
200	40	0.201
369	55	0.149
682	76	0.111
793	82	0.103
1,000	93	0.093
1,476	115	0.078
1,626	121	0.074
2,500	154	0.062
3,102	175	0.057
5,000	236	0.047
6,000	265	0.044

¹After Bye and Gallicchio (1993) with adjustment for additional sample restrictions required by the study.

Table B-2.--Standard errors for estimated percentages¹

Base of percentages in thousands	Percentage												
	1 or 99	2 or 98	5 or 95	8 or 92	10 or 90	15 or 85	20 or 80	25 or 75	30 or 70	35 or 65	40 or 60	45 or 55	50
75	3.24	4.56	7.10	8.84	9.77	11.63	13.03	14.10	14.92	15.53	15.96	16.20	16.28
100	2.81	3.95	6.15	7.65	8.46	10.07	11.28	12.21	12.93	13.45	13.82	14.03	14.10
155	2.25	3.17	4.94	6.15	6.80	8.09	9.06	9.81	10.38	10.81	11.10	11.27	11.33
200	1.98	2.79	4.35	5.41	5.98	7.12	7.98	8.64	9.14	9.51	9.77	9.92	9.97
369	1.46	2.06	3.20	3.98	4.40	5.24	5.87	6.36	6.73	7.00	7.19	7.30	7.34
682	1.07	1.51	2.35	2.93	3.24	3.86	4.32	4.68	4.95	5.15	5.29	5.37	5.40
793	1.00	1.40	2.18	2.72	3.00	3.58	4.01	4.34	4.59	4.78	4.91	4.98	5.01
1,000	0.89	1.25	1.94	2.42	2.68	3.18	3.57	3.86	4.09	4.25	4.37	4.44	4.46
1,476	0.73	1.03	1.60	1.99	2.20	2.62	2.94	3.18	3.36	3.50	3.60	3.65	3.67
1,626	0.70	0.98	1.52	1.90	2.10	2.50	2.80	3.03	3.21	3.34	3.43	3.48	3.50
2,500	0.56	0.79	1.23	1.53	1.69	2.01	2.26	2.44	2.59	2.69	2.76	2.81	2.82
3,102	0.50	0.71	1.10	1.37	1.52	1.81	2.03	2.19	2.32	2.42	2.48	2.52	2.53
5,000	0.40	0.56	0.87	1.08	1.20	1.42	1.60	1.73	1.83	1.90	1.95	1.98	1.99
6,000	0.36	0.51	0.79	0.99	1.09	1.30	1.46	1.58	1.67	1.74	1.78	1.81	1.82

¹After Bye and Gallicchio (1993) with adjustment for additional sample restrictions required by the study.

Appendix C: Additional Tabulations

Table C-1.--Persons Aged 62-64: Prevalence of Health Problems

Health and disability status	Number (in thousands)	Percentage of total or subtotal	
		Total	With health problems
Total	6,371	100	NA
No health problems	3,224	51	NA
One or more health problems	3,147	49	100
Not severely disabled	1,413	22	45
Severely disabled	1,734	27	55
SSA medically eligible	1,050	16	33

Table C-2.--OASI Beneficiaries Aged 62-64:
Selected Demographic Characteristics as a Percentage of Total, by Extent of Health Problems

Characteristic	Total	No health problems	With one or more health problems			
			Subtotal	Not severely disabled	Severely disabled	Simulated SSA disabled
Total number (in thousands)	3,102	1,626	1,476	793	682	369
Percentage Distribution	100	100	100	100	100	100
Age 62	21	22	20	23	16	19
Age 63	35	35	35	38	32	31
Age 64	44	43	45	40	52	50
Female	60	63	58	53	63	79
Black or Hispanic	10	7	13	10	15	12
Widowed, divorced, separated	29	26	31	31	31	53
Living alone	22	20	24	26	22	41
Schooling, less than 12 years	31	25	37	30	45	53

Table C-3.--OASI Beneficiaries Aged 62-64: Occupation in Most Recent Job, by Extent of Health Problems

Characteristic	No health problems	With one or more health problems			
		Subtotal	Not severely disabled	Severely disabled	Simulated SSA disabled
Total number (in thousands)	1,626	1,476	793	682	369
Percentage distribution	100	100	100	100	100
Most recent occupation					
Managerial and professional	23	14	19	8	8
Technical, sales, and administrative support	28	20	21	19	17
All other	30	42	40	44	24
Service	12	16	12	21	14
Precision production	8	11	13	9	6
Operators, fabricators	10	15	16	14	4
Did not hold a job or own a business in past 13 years	19	24	20	30	51

Table C-4.--OASI Beneficiaries Aged 62-64:
Recent Work Patterns and Lifetime Indexed Earnings, by Extent of Health Problems

Characteristic	No health problems	With one or more health problems			
		Subtotal	Not severely disabled	Severely disabled	Simulated SSA disabled
Total number (in thousands)	1,626	1,476	793	682	369
Percentage distribution	100	100	100	100	100
Average monthly earnings from covered employment in 1991					
\$1 or more	36	29	37	19	14
More than \$590	13	9	13	4	3
Received earnings from covered employment in at least 4 of the past 5 years	36	39	51	26	18
Did not hold a job or own a business in past 13 years	19	24	20	30	51
Average annual lifetime indexed earnings					
Lowest quintile	17	23	20	27	49
2nd quintile	29	24	19	30	29
3rd quintile	20	20	22	18	10
4th quintile	15	20	23	17	8
Highest quintile	19	13	16	9	5
Median	\$9,318	\$8,685	\$9,660	\$5,837	\$2,332

Table C-5.--OASI Beneficiaries Aged 62-64: Importance of Earnings, Property Income, and Other Income in Beneficiary Families, by Extent of Health Problems

Family income source	No health problems	With one or more health problems			
		Subtotal	Not severely disabled	Severely disabled	Simulated SSA disabled
<u>Earnings</u>					
Percentage of families with none	55	59	57	61	76
Families with some:					
At least 25 percent of family income	71	75	68	84	73
At least 50 percent of family income	19	19	16	22	14
<u>Property income</u>					
Percentage of families with none	11	25	19	31	37
Families with some:					
At least 25 percent of family income	20	16	17	16	22
At least 50 percent of family income	7	5	6	3	6
<u>Other income</u>					
Percentage of families with none	23	33	29	37	52
Families with some:					
At least 25 percent of family income	65	70	74	66	70
At least 50 percent of family income	23	18	22	13	13

Table C-6.--OASI Beneficiaries Aged 62-64:
Effect of Selected Income Sources on Poverty and Near-Poverty Status, by Extent of Health Problems

Family income source	No health problems	With one or more health problems			
		Subtotal	Not severely disabled	Severely disabled	Simulated SSA disabled
<u>Social Security</u>					
Kept from poverty	19	25	25	24	36
Kept from poverty or near-poverty	22	27	29	25	33
<u>Earnings</u>					
Kept from poverty	8	10	11	9	6
Kept from poverty of near-poverty	11	15	15	15	6
<u>Property income</u>					
Kept from poverty	2	2	1	3	4
Kept from poverty or near-poverty	2	3	4	2	5
<u>Other income</u>					
Kept from poverty	5	8	6	10	7
Kept from poverty or near-poverty	10	13	15	12	10

Table C-7.--Dollar Values of Upper Bounds of the Lowest through 4th Quintiles,
Selected Financial Measures

Characteristic	Quintile			
	Lowest	Second	Third	Fourth
<u>All persons aged 18-64</u>				
Average indexed annual earnings, 1949-1991	\$1,916	\$8,266	\$16,191	\$25,725
Household financial assets	102	1,300	5,500	23,309
Four-month total family income	5,689	9,747	14,235	21,000
<u>All persons aged 62-64</u>				
Average indexed annual earnings, 1949-1991	1,810	6,607	14,104	25,272
Household financial assets	500	7,710	33,299	94,103
Four-month total family income	4,894	7,986	12,021	18,558
<u>OASI beneficiaries aged 62-64</u>				
Average indexed annual earnings, 1949-1991	1,987	6,075	13,112	24,022
Household financial assets	1,000	11,200	37,630	94,801
Four-month total family income	4,775	7,629	11,016	15,561

References

- Bye, Barry V., and Salvatore J. Gallicchio. 1993. "Sampling Variance Estimates for SSA Program Recipients from the 1990 Survey of Income and Program Participation." *Social Security Bulletin*, Vol. 56, No. 3, pp. 75-87.
- Burkhauser, Richard V., Kenneth A. Couch, and John W. Phillips. 1996. "Who Takes Early Social Security Benefits? The Economic and Health Characteristics of Early Beneficiaries." *The Gerontologist*, Vol. 36, No. 6, pp. 789-99.
- Del Bene, Linda A., and Denton R. Vaughan. 1992. "Income, Assets and Health Insurance Coverage: Economic Resources for Meeting Acute Health Care Needs of the Aged." *Social Security Bulletin*, Vol. 55, No. 2, pp. 3-25.
- Department of Health and Human Services. 1986. "Increasing the Social Security Retirement Age: Older Workers in Physically Demanding Occupations or Ill Health (Report to Congress)." *Social Security Bulletin*, Vol. 49, No. 10, pp. 5-23.
- Dwyer, Debra, Jianting Hu, Denton R. Vaughan, and Bernard Wixon. Forthcoming. "Using Survey Self-Reports to Estimate Medical Eligibility Under Social Security's Disability Programs: Methods and Findings." ORES Working Paper Series, Office of Research, Evaluation, and Statistics, Social Security Administration.
- Hu, Jianting, Kajal Lahiri, Denton R. Vaughan, and Bernard Wixon. Forthcoming. "A Structural Model of Social Security's Disability Determination Process," *The Review of Economics and Statistics*.
- Lahiri, Kajal, Denton R. Vaughan, and Bernard Wixon. 1995. "Modeling SSA's Sequential Disability Determination Process Using Matched SIPP Data." *Social Security Bulletin*, Vol. 58, No. 4, pp. 3-42.
- McNeil, John M. 1993. *Americans with Disabilities: 1991-92*, Current Population Reports, Series P-70, No. 33. U.S. Bureau of the Census. U.S. Government Printing Office, Washington, DC.
- Olson, Janice A. 1999. "Who is '62 Enough': Identifying Eligibles for Social Security Early Retirement in the Health and Retirement Study." *Social Security Bulletin*, Vol. 62, No. 3, pp. 51-56.
- Packard, Michael. 1985. "Health Status of New Retired-Worker Beneficiaries: Findings From the New Beneficiary Survey." *Social Security Bulletin*, Vol. 48, No. 2, pp. 5-16.
- Packard, Michael D., and Virginia P. Reno. 1989. "A Look at Very Early Retirees." *Social Security Bulletin*, Vol. 52, No. 3, pp. 16-29.

Smith, Ralph. 1999. *Raising the Earliest Eligibility Age for Social Security Benefits*. CBO Papers, Congressional Budget Office, Washington, DC, January.

Social Security Administration. 1991-1992, 1999. *Annual Statistical Supplement to the Social Security Bulletin*. U.S. Government Printing Office, Washington, DC.