WORK ABILITY AND THE SOCIAL INSURANCE SAFETY NET IN THE YEARS PRIOR TO RETIREMENT

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Abstract

A patchwork of public programs—primarily Social Security Disability Insurance (DI), workers' compensation, Supplemental Security Income (SSI), and veterans' benefits—provides income supports to people unable to work. Yet, questions persist about the effectiveness of these programs. This report examines the economic consequences of disability for a sample of Americans observed from age 51 to 64. The results underscore the precarious financial state for most people approaching traditional retirement age with disabilities. Disability rates roughly double from age 55 to 64. Fewer than half who meet our disability criteria ever receive disability benefits in their fifties or early sixties. Benefit receipt rates are much higher among those with the most severe disabilities, suggesting that benefits are targeted to those least able to work. However, even when models control for disability severity, women are less likely than men to receive benefits. Those with cancer and heart problem diagnoses are more likely to receive DI, suggesting that DI favors workers with certain medical diagnoses. Poverty rates for people who collect disability benefits in their fifties and early sixties more than triple following benefit receipt.

Introduction

Concerns about the effectiveness and cost of the disability safety net are becoming increasingly urgent as the nation ages. A patchwork of public programs provides income supports to people who are unable to work because of physical, cognitive, or emotional impairments, many of whom are in late midlife. Despite these benefits, a substantial portion of Americans with disabilities in their fifties and early sixties live in poverty (Congressional Budget Office 2004; Johnson and Mermin 2009), raising questions about how well these programs reach those in need and how well they serve those they reach. People can begin collecting Social Security retirement benefits at age 62, an important source of income for those with disabilities who lack access to other benefits. However, beneficiaries who begin collecting retirement benefits before the full retirement age receive permanently reduced monthly payments, threatening their income security in old age. These reductions are becoming more substantial as the Social Security full retirement age increases. Monthly payments are reduced by 20 percent for those who retired at age 62 before 2000 and faced a full retirement age of 65. Those who turn 62 in 2005 or later face a full retirement age of 66, and their benefits are reduced by 25 percent if they begin collecting at age 62. Once the full retirement age reaches 67 for those turning 62 in 2022, the penalty for collecting at age 62 will increase to 30 percent. The possibility that the full retirement age might be raised again to bolster Social Security's finances, perhaps in combination with an increase in the early retirement age, raises the imperative to address the gaps in the disability safety net.

Despite evidence that the safety net does not work as well as it could, its costs will continue to grow in coming years as the boomers age, because many disability beneficiaries are in their fifties (Autor and Duggan 2006). The Social Security actuaries project that benefit

payments by the Social Security Disability Insurance (DI) program, the nation's largest disability program, will increase by more than 50 percent over the next nine years, and that the trust fund that finances these benefits will be depleted by 2014 (Social Security Trustees 2009). As costs mount, it becomes crucial that benefits are targeted to those who need them most.

This paper examines the economic consequences of disability in the years leading up to retirement. Using a multidimensional disability measure that combines information from a series of health and functional limitation indicators available in a nationally representative household survey of older Americans, we consider how disability rates increase as people age from their fifties into their early sixties. We then examine disability benefit receipt, including the source of disability payments, for adults age 51 to 64 with disabilities, with a special focus on how receipt varies by disability severity. Hazard models of time to disability receipt are estimated for different types of benefits. The final set of analyses compares income levels and poverty status before and after disability onset and benefit receipt.

The results underscore the precarious financial state of most people approaching traditional retirement age with disabilities. Disability rates roughly double as people age from 55 to 64. Fewer than half of people who meet our disability criteria ever receive disability benefits in their fifties or early sixties. Benefit receipt rates are much higher among those with the most severe disabilities, suggesting that benefits are targeted to those least able to work, but women are less likely than men to receive benefits, even when disability severity is controlled for. Many who receive disability benefits struggle financially, especially if they are not married. Poverty rates for people who collect disability benefits in their fifties and early sixties are more than three times as high after benefit receipt than before disability onset.

Background: The Disability Safety Net in the U.S.

A wide array of public and private programs seeks to meet the special needs of Americans with disabilities. Several programs are designed to replace part of the income workers lose when they are injured or become too ill to work. Others offer medical care, vocational training, and supportive services. Additional programs that do not specifically target those with disabilities end up serving many people with impairments. Legislation, including the federal Americans with Disabilities Act and various state laws, forbid labor market and housing discrimination against people with disabilities.

Income replacement programs—the focus of our study—are the most prominent components of this system because of their broad reach and growing costs. The four principal public income support programs for people with disabilities are DI, workers' compensation, the Supplemental Security Income (SSI) program, and veterans' benefits from the Department of Veterans Affairs (VA).

DI is the largest of these programs. It served just more than 7 million disabled workers in December 2007, plus more than 1.66 million of their children and 150,000 of their spouses (Social Security Administration 2009a). Total benefit payments in 2007 approached $100 billion—$91.3 billion in worker benefits, $7.25 billion in children's benefits, and $0.52 billion in spouses' benefits in 2007 (Social Security Administration 2009a, Table 4.A6). Based on lifetime earnings, monthly benefits for disabled workers averaged about $1,000 in 2007.[1] They are funded by payroll tax contributions of 0.9 percent of Social Security-covered earnings up to the taxable maximum ($106,800 in 2009), paid by both employees and employers.

[1] Social Security's benefit formula is progressive, replacing larger shares of earnings for those with lower lifetime earnings than for those with higher lifetime earnings.

To receive DI benefits, workers must be insured and pass a disability screen. Only those who worked a certain amount and worked recently are insured for disability benefits. Although an estimated 145 million Americans met these criteria in 2008 (Social Security Administration 2009a, Table 4.C1), certain groups—including women and those with less education—are less likely to be insured because of career gaps (Mitchell and Phillips 2001). Insured workers can receive DI benefits only if they are unable to engage in "substantial gainful activity"—defined as monthly earnings of more than $980 in 2009—because of an impairment that is expected to last at least 12 months or result in death.[2] Beneficiaries must wait at least five months after disability onset before receiving payments, further restricting the program to those with relatively long-term disabilities. DI beneficiaries are eligible for health care from Medicare after a two-year waiting period. Given the subjective nature of disability classifications and the possibility that applicants' health may deteriorate after the initial award determination, rejected applicants may appeal award decisions. A substantial fraction of DI benefits are awarded after appeal.[3]

Workers' compensation is a second large cash transfer program for the disabled, paying $28.3 billion in cash benefits in 2007 (plus $27.2 billion in medical care) (Sengupta, Reno, and Burton 2009). Designed to protect workers against injuries sustained on the job, it provides benefits for temporary and partial disabilities as well as permanent and more severe conditions. In every state except Texas, most private employers are required to provide workers' compensation coverage. The rules vary by state, with some states excluding certain types of workers, such as those employed in small firms, those in certain types of agriculture work, or

[2] Although these criteria are supposed to be uniform across the country, disability application acceptance rates differ widely by state (Burkhauser, Butler, and Weathers 2001/2002; Social Security Advisory Board 2006).

[3] In 2007, about 37 DI awards were made for every 100 applications (Social Security Administration 2009a, Table 6.C7), though many applications were denied for technical (i.e., non-medical) regions. Social Security Administration (2009c) provides data on the allowance rates at various stages in the process. See also Zayatz (2005) for additional estimates on DI dynamics, including historical information on trends in beneficiary impairments.

some state and local government employees (Sengupta, Reno, and Burton 2009). An estimated 137 million American workers were covered by the program in 2007 (Sengupta, Reno, and Burton 2009). Workers' compensation benefits are financed by employer premiums. They are typically experienced rated, so that firms employing workers who are more likely to be injured pay relatively high premiums. Benefits and premiums are set at the state level and vary widely across the country. Many states target a replacement rate of about two-thirds of gross earnings up to some maximum, often set as a multiple of average earnings in the state.

SSI, a third large cash assistance program for the disabled, is means tested. SSI beneficiaries may hold no more than $2,000 in assets if single, or $3,000 if married, limits that have not changed since 1989.[4] In 2008, more than 6.2 million people received federal SSI benefits because of a disability, with total disability payments amounting to about $37 billion (Social Security Administration 2009b, Tables 2 and 5).[5] The maximum monthly SSI payment in 2009 is $674 for an individual ($1,011 for a couple), with payments reduced for beneficiaries with earnings or other sources of income beyond small exclusions.[6] SSI uses the same medical criteria as DI, but the program does not impose any work history requirements. Some states supplement the federal SSI payment with a state payment. Federal SSI payments are paid out of general federal revenues.

The VA also provided cash benefits of more than $9.5 billion to more than 1.16 million veterans with service-related disabilities who are under age 55 in fiscal year 2008 (Veterans

[4] The value of a home, a car (if used for medical transportation), burial funds, and household goods is excluded from these limits.

[5] Low-income adults age 65 and older with limited assets may qualify for SSI regardless of disability status. This estimate includes recipients age 65 and older who began collecting SSI because of disabilities.

[6] The Social Security Administration excludes $20 of income from any source and $65 of earnings when determining the monthly SSI benefit level. Each dollar in additional earnings reduces SSI benefits by 50 cents.

Benefit Administration 2008).[7] The monthly veterans' disability benefit payment is related to the disability's severity and veterans' family situation (whether they are married or have children). For veterans without children, monthly 2009 benefits ranged from $123 for those classified as being 10 percent disabled to $2,670 for those with a 100-percent disability. Like SSI payments, veterans' benefits are funded from general federal revenues.

Private and other public sources supplement these major national programs for workers who become disabled. Many American workers are covered by private disability insurance provided by their employers. Special state disability programs cover workers in five states: California, Hawaii, New Jersey, New York, and Rhode Island. Program rules and financing vary, but most provide temporary (time-limited) support for disabilities not related to the job. Because the states that provide these disability benefits include some of the most populous in the country, total expenditures are significant. California's disability program, for example, paid more than $4.2 billion in benefits on almost 670,000 claims for the 12 months ending in June 2009.

Many of these cash disability assistance programs interact with each other. Workers who have substantial work histories but limited assets may receive joint SSI and DI benefits. Some with low assets and relatively high benefits may be serial recipients of SSI and DI: They may receive SSI during the five-month waiting period for DI, but then switch to DI benefits alone if the DI benefit for which they are eligible exceeds the SSI guarantee (see Rupp, Davies, and Strand 2008 for estimates and discussion). DI benefits are reduced for benefits from workers' compensation. SSI beneficiaries must apply for all other benefits for which they are eligible (including workers' compensation and veterans' benefits) before they can receive SSI.

Despite the multiple programs designed to support the disabled, there are numerous gaps in this safety net (Wittenburg and Favreault 2003). For example, those with short-term or partial

[7] The estimate for those under age 75 climbs to two million veterans with benefits of $25 billion.

disabilities that were not sustained on the job or in military service may be ineligible for any cash assistance, especially when they do not reside in one of the five states with its own disability program. Those with permanent and severe disabilities but intermittent work histories may have trouble qualifying for benefits. Social Security's disabled widow(er) benefit fills part of this gap for adults age 50 and older who are widowed from eligible workers' and have disabilities severe enough to qualify for DI but not enough work experience to receive a worker benefit. However, people who never married, are still married, or divorced less than 10 years into a marriage are not eligible for these benefits.

Previous Literature

An important challenge for researchers assessing the adequacy of the disability safety net is determining what level of impairment constitutes a disability. Researchers have long stressed that disability depends on the interaction of individuals' characteristics and health conditions with the social and economic environment (for example, Nagi 1969a, 1969b, 1991). An impairment that would prevent construction workers or surgeons from performing their duties without significant accommodations may not limit singers' or social workers' employability and productivity. The multidimensional character of this disability model implies substantial variation in disability rates across times, places, and positions (where attitudes and accommodations differ), even for people with the very same physical or cognitive impairment.

The need for multidimensional information about the environmental context makes survey questions an ideal tool for measuring impairments and their effects. However, classifying impairments' effects on functional ability is somewhat subjective. Individuals have different tolerance levels for pain or discomfort and different capacities for adapting to physical or

psychological limits, for example, by using alternative therapies, trying assistive technologies, or changing careers. This subjectivity complicates the interpretation of survey responses. One particular concern is that self-reported measures of work limitations may suffer from a tendency for nonworking respondents to overstate (or rationalize) their disability to justify their lack of employment. This tendency, known as justification bias (Bound 1991), may be especially prevalent among men, who may feel more pressure than women to be employed. Likewise, respondents may exaggerate their health problems to try to improve their chances for accessing disability benefits. The literature on justification bias is mixed but growing. For example, new research that relies on vignettes suggests that levels of justification bias may vary across countries, with workers in the U.S. feeling more pressure than workers in other countries to rationalize their time out of the labor force (Kapteyn, Smith, and Van Soest 2009).

The strong predictive power of self-reported disability status on mortality has led some researchers to conclude that self-reported measures provide useful information (Dwyer and Mitchell 1999, Rupp and Davies 2004). In fact, many studies use self-reported work limitations as the primary indicator of the presence of a disability, despite concerns about subjectivity and overstatement. Others use multiple measures, and examine the robustness of outcomes to alternative measures (e.g., comparing reports of limitations in activities of daily living to self-reported work limitations). Some researchers try to capture severity of disability through the persistence of longitudinal self-reports, such as whether respondents report work limitations for a single period or consistently over multiple periods.

Another complication in understanding how workers' economic well-being changes in the wake of a disability is that disabilities and program eligibility, applications, and acceptances are not randomly assigned, complicating efforts to establish causal links between disability,

program participation, and economic well-being. One approach has been to compare outcomes for accepted and rejected DI (and sometimes SSI) applicants (Bound 1989; Bound, Burkhauser, and Nichols 2001; McGarry and Skinner 2009; von Wachter, Song, and Manchester 2008). The rationale is that rejected applicants can serve as a sort of control group (albeit a relatively healthier one) which could help to provide an upper bound for employment potential among persons awarded disability benefits. However, other important differences may exist between accepted and rejected applicants, and the application process itself may "scar" applicants (Parsons 1991).

Longitudinal data offer substantial advantages for disability research, and most key studies use them. They provide information on the timing of important events, for example, and whether health declines are temporary or permanent. However, even long-running longitudinal surveys like the Panel Study of Income Dynamics (PSID) have several limitations. Measurement error surrounding reports of earnings and program participation is often significant, especially given respondents' well-known difficulty distinguishing disability programs with similar-sounding names. Attrition bias and difficulties representing new immigrants to the United States also beset the PSID. Immigration and attrition are less problematic for shorter panels such as the Survey of Income and Program Participation (SIPP). When matched to administrative records on earnings and benefit receipt, SIPP overcomes many of the measurement problems associated with self-reports. The Health and Retirement Study (HRS) can also be linked to administrative earnings and benefit records. HRS is a longer panel than SIPP (though shorter than PSID), with interviews every other year, compared to three times a year in SIPP. However, low match rates (especially in the HRS) and variation in match rates across population subgroups limit the value

of administrative data (Cristia and Schwabish 2007; Czajka, Mabli, and Cody 2007; Haider and Solon 2000; Kapteyn et al. 2006).[8]

Despite these many data limitations, research on the disability safety net's adequacy and effects on economic well-being have reached a number of important conclusions. We identify three key points.

First, disability is more prevalent among adults with low socioeconomic status before they became disabled than among those with higher status, and disability onset is closely associated with health declines, elevated mortality, income losses (though many leave work gradually), and increases in poverty (Burkhauser and Daly 1996; Bound, Burkhauser, and Nichols 2001).[9] However, both disability transfer program participation and increased spousal employment (among married people) mitigate disability's effects on family income (Burkhauser and Daly 1996; Bound, Burkhauser, and Nichols 2001; Daly 1998; Johnson and Favreault 2001; Meyer and Mok 2008).[10] Comparisons of accepted and rejected DI applicants find that rejected applicants typically look much more like accepted applicants than similar nonapplicants in terms of health, mortality, and income, even many years after the disability decision. Although rejected applicants work a bit more than accepted applicants, they do not work or earn nearly as much as nonapplicants. Differences in post-application employment appear to be larger among younger adults than older adults (von Wachter, Song, and Manchester 2008).

[8] For example, nonworkers and nonwhites are less likely than others to offer their Social Security numbers (Haider and Solon 2000; Kapteyn et al 2006).

[9] A separate literature looks specifically at the effects of work limitations on earnings (for example, Charles 2003; Mok et al. 2008).

[10] This literature highlights the complexity of understanding economic well-being in a family context, especially to the degree that disability may itself induce family status change, though evidence suggests that disability may not affect likelihood of divorce (for example, Charles and Stephens 2004).

Second, program participation patterns vary substantially by program, with many participants pursuing different paths and with many participating in multiple programs. Disability program participation models are diverse, but generally reveal strong differences by socioeconomic status (Benítez-Silva et al. 1999; Favreault 2002; Lahari, Vaughan, and Wixon 1995; Mitchell and Phillips 2001; Rupp and Davies 2004).[11] Those with less education and lower lifetime earnings are far more likely than others, all else equal, to receive benefits. Eligibility for and receipt of benefits from *multiple* disability programs and in a variety of sequences is common (Bound, Burkhauser, and Nichols 2001; Honeycutt 2004; Rupp, Davies, and Strand 2008).

Finally, disabilities' effects on individuals' and families' economic outcomes are quite heterogeneous (Bound, Burkhauser, and Nichols 2001), mainly because of differences in disability severity (Meyer and Mok 2008). The fact that poverty increases after disability onset at the same time that average family incomes are relatively stable suggests that average outcomes mask variability in economic effects among individuals with work limitations. Relatively modest changes in mean outcomes pre- and post-disability among the whole population that has experienced a disability arise because some people eventually experience improvements in economic well-being, others experience minimal or relatively small changes, and some experience very large reductions. Meyer and Mok (2008) differentiate workers' disabilities by their level of severity, and find that changes in outcomes after disability onset are much more

[11] Some models consolidate the many stages of becoming impaired, applying for, and receiving benefits into relatively simple models (Favreault 2002; Rupp and Davies 2004). Others look at these processes in detail, and try to show how participation determinants may vary at different points in the process. For example, predictors may be different for impairment's onset, initial application for DI given an impairment, and for filing and receiving an appeal after an initial rejection (Benítez-Silva et al. 1999; Lahari, Vaughan, and Wixon 1995; Mitchell and Phillips 2001).

significant for those with chronic and severe disabilities than for the average person who reports a disability.

Building on this literature, the current study examines the economic consequences of disability in the years leading up to retirement. Our analysis uses a multidimensional measure that combines information from a series of health and functional limitation indicators to define disability and gauge disability severity. We examine disability benefit receipt, including the source of disability payments, for adults age 51 to 64 using a combination of self-reports and administrative data. This study also compares income levels and poverty status before and after disability onset and benefit receipt.

Data and Methods

Data for our study come from the University of Michigan's Health and Retirement Study (HRS), a longitudinal survey of Americans age 51 and older. The survey began in 1992 when 9,814 respondents born between 1931 and 1941 were interviewed, along with their spouses. Respondents were reinterviewed every other year. The most recent data available when we began our study were collected in 2006, when respondents were age 64 to 75.[12] The HRS oversamples African Americans, Hispanics, and Florida residents. The survey asks detailed questions about health status, employment, earnings, income, wealth, demographics, and program participation. Income data collected each wave refer to amounts received during the previous calendar year. Whenever possible, we use a cleaned version of the HRS prepared by RAND (version I).[13]

[12] The HRS also collects information on other cohorts of older Americans. The survey began interviewing adults born before 1924 (known as the AHEAD cohort) in 1993, those born between 1924 and 1930 (the Children of the Depression cohort) in 1998, those born between 1942 and 1947 (the War Babies) in 1998, and those born between 1948 and 1953 (the Early Boomers) in 2004. Except as noted below, we restrict our analysis to respondents in the original HRS cohort.

[13] The RAND dataset includes only a small share of the HRS variables.

We use the HRS to examine disability incidence, program participation, and effects on economic status. Our sample is restricted to 4,661 noninstitutionalized respondents age 51 to 55 in 1992, who we follow until they reach age 64, just before qualifying for full Social Security retirement benefits.[14] It includes 1,820 respondents who are disabled at some point between age 51 and 64. We measure financial amounts in constant 2004 dollars, adjusted by the change in the consumer price index. We account for differences in household size by dividing income received by married adults by 1.62, the midpoint of the range recommended by a National Academy of Sciences expert panel (Citro and Michael 1995). Our measure of household wealth includes the value of financial and real assets (including the value of any businesses but excluding housing wealth). The value of the stream of future benefits from Social Security or employer-provided defined benefit pension plans is not included.

Defining Disability

As discussed in the previous section, disability is a multidimensional concept that is difficult to quantify. We aim to create an objective measure of disability by creating a work disability index that combines multiple indicators of health status, functional impairments, and work ability. We estimate a probit model of labor force participation as a function of age, race and ethnicity, education, presence of children, wealth, marital status, spouse's employment and earnings, and various health measures. The model is estimated for a sample of 49,904 observations of HRS respondents age 51 to 61, pooled over the eight interview waves between 1992 and 2006.[15] The estimated model parameters, reported in appendix table 1, show the

[14] The full Social Security retirement age is 65 for Americans born before 1938. Beginning with those born in 1938, the retirement age increases by two months every year, until it reaches age 66 for those born in 1943. It will gradually increase to age 67, beginning with those born in 1955. For respondents in our sample, who were born between 1937 and 1941, the full retirement age ranges from 65 and 0 months to 65 and 8 months.

[15] The sample includes respondents from the HRS, War Baby, and Early Boomer cohorts.

marginal impact of each health and nonhealth measure on the likelihood of participating in the labor force. We multiply the marginal effect for each health variable by the value of the measure and sum all the health measures in the model to generate a work disability index score for each respondent. This score reflects the likelihood that adults in their fifties with a given set of health measures would participate in the labor force, with lower scores indicating lower chances of working (or more severe disabilities).

The health measures in our model include self-assessed work disability, overall health status, limitations with activities of daily living (ADLs), functional impairments, and depression. The work disability measure indicates whether respondents have "any impairment or health problem that limits the kind or amount of paid work" they can do, and the overall health status measure indicates whether respondents describe their health as fair or poor (instead of excellent, very good, or good). A series of indicators identify respondents with ADL limitations involving walking across a room, dressing, bathing, eating (including cutting food), and getting in or out of bed. The model also includes dummy variables indicating whether respondents have any difficulty with the following activities: walking one block; walking several blocks; sitting for two hours; getting up from a chair; climbing a single flight of stairs; climbing several flights of stairs; stooping, kneeling or crouching; lifting 10 pounds; extending their arms above their heads; pushing or pulling large objects; and picking up a dime. The final health measure is a depression score index, based on the Center for Epidemiologic Studies Depression (CESD) scale. The score sums six negative indicators (whether all or almost all the time respondents felt depressed, sad, or alone, felt that everything was an effort, experienced restless sleep, or could not get going) and subtracts two positive indicators (whether all or almost all the time respondents felt happy or enjoyed life). A higher score indicates more severe depression.

Nearly all of the health problem measures significantly reduce the probability of participating in the labor force. The work disability variable has the strongest effect, reducing labor force participation rates by 39 percentage points. Because the overall probability of working in the sample is 70 percent, this parameter estimate implies that adults age 51 to 61 who report work disabilities are 60 percent less likely to work than otherwise identical adults who do not report work disabilities. By comparison, 61-year-old adults are about 23 percentage points less likely to work (or 33 percent less likely in relative terms) than their 51-year-old counterparts. Other health measures that substantially reduce labor force participation include problems eating, bathing, and walking across the room, and fair or poor health. Functional impairments, such as difficulty climbing a flight of stairs or lifting 10 pounds, generally have smaller (but significant) negative effects.

We classify respondents as disabled if their disability score places them within the bottom 20 percent of the distribution of our pooled sample of adults age 51 to 61 between 1992 and 2006. Some respondents' scores increase from one wave to the next, because they report fewer health problems in one wave than in the previous wave, causing their disability score to improve. Health does sometimes improve at older ages, but some of these differences may simply reflect reporting differences or errors, not true gains in underlying health status. To limit the impact of small changes in health status on disability rates, we do not reclassify disabled respondents as not being disabled until their score reaches the 33rd percentile of the distribution.[16]

[16] A few disabled respondents move above and then back below the disability threshold. Because their recovery spells are always very short and may reflect misreporting, we treat their disability as a single spell and classify them as disabled during the brief recovery period.

We plot survival functions to show the cumulative probability of becoming disabled by age 64, just before full Social Security retirement benefits begin for respondents in our sample. The survival function at time t, $S(t)$, is defined as

$$S(t) = S(t\text{-}1) * [1-\lambda(t)],$$

where $\lambda(t)$ is the hazard function at time t. The hazard function indicates the probability of experiencing the event (disability in our case), conditional on not having already experienced it. A key advantage of survival analysis is its ability to handle censored observations, which in our case occur when respondents drop out of the survey (or die) before they become disabled. Alternatively, we could have restricted the sample to those who remain in the survey for every wave or we could have classified those who drop out of the survey before becoming disabled as never becoming disabled by age 64, but both approaches would understate the true disability rate. Disability rates are lower for the subsample of respondents who remain in the survey every wave than for the overall sample because respondents who never attrit tend to have higher socioeconomic status than attriters, and people with high socioeconomic status are relatively unlikely to become disabled. Some respondents who drop out of the survey eventually become disabled. Instead, we implicitly assume that those who drop out of the survey before becoming disabled face the same disability risk as those who remain in the survey. We compute the cumulative disability probabilities at age 64 for men and women by race and ethnicity, education, and 1991 income.[17]

[17] We treat observations on respondents who die before they become disabled as censored, even though they face no disability risk in subsequent waves, because it is likely that they became disabled after their last interview and before they died. This assumption does not affect our results much. When we instead estimate our survival function treating these respondents as never being disabled through age 64, our cumulative disability probabilities decrease by less than 1 percentage point.

Measuring Program Participation

We examine benefit receipt from DI, SSI, workers' compensation, and veterans' benefits. At each wave, the HRS asks respondents whether they or their spouses received benefits from each of these programs in the previous year. Recipients also report the amount received and whether payments went to the respondent or the spouse.[18] Whenever possible, we supplement the self-reports of benefit receipt with information from administrative data, which are available for about 41 percent of respondents in our sample.[19] Social Security's Master Beneficiary Records provide the amount and type of Social Security benefit received each year. For those respondents with administrative data links, we use these records to indicate DI receipt and payment amounts instead of the self-reports, because respondents often underreport program participation (Meyer, Mok, and Sullivan 2009). However, we do not exclude from our analysis respondents without links to administrative records because respondents with links represent a select subgroup, with higher levels of income and education than the overall sample (Haider and Solon 2000; Kapteyn et al. 2006).

We compute the percentage of adults with disabilities who participate in each program at some point between age 51 and 64, and show how participation rates vary by disability severity, sex, race, education, and 1991 income (collected at the baseline 1992 interview). The share who participate in multiple programs is also computed. We consider only participation that occurs during a disability spell. Disability severity is measured by the respondent's disability index

[18] In 1992 and 1994, the HRS included separate questions about VA benefits in military pensions. Beginning in 1996, however, the HRS collected information only about the two programs combined. Because we do not want to include military pensions in the analysis, we assume that respondents received VA benefits in these later years only if they received VA benefits in earlier waves or if the annual benefit was less than $10,000. This cutoff was determined by examining the distinct VA benefit and military pension amounts in 1992 and 1994.

[19] The other respondents denied HRS access to their Social Security records (or in some cases HRS was unable to link the records because of inaccurate or missing Social Security numbers). Access to administrative earnings and benefits records is restricted to researchers who obtain special permission from HRS.

score, with those in the top quintile of the distribution being among the 20 percent of disabled respondents with the most severe disabilities.

Additionally, we estimate multivariate models of program participation to isolate the impact of key predictors holding other variables constant. We first estimate logit models of the log odds of participating in any program and in each program, as functions of sex, age of disability onset, race and ethnicity, education, 1991 income and assets, disability severity (measured at its worst point), medical conditions, whether the respondent was ever married during the disability spell, and whether the respondent ever worked 10 or more years when we first observe the disability spell. We include the employment history measure because people in their fifties are not eligible for DI unless they have spent at least 10 years in Social Security-covered employment. The medical condition measures are binary variables that indicate whether respondents report having ever been diagnosed with high blood pressure, diabetes, cancer, lung problems, heart problems, stroke, psychological problems, or arthritis. The sample is restricted to adults who are disabled at some point between age 51 and 64.

We then estimate discrete-time hazard models of the log odds of receiving any disability benefit and each type of benefit. The advantage of these models is that they can accommodate time-varying predictors, enabling us to measure the impact of disability duration and age on program participation and to better measure the impact of such predictors as income, wealth, marital status, and disability severity. We estimate the hazard models on a sample that includes a separate observation for each year a respondent is disabled until they begin receiving benefits from the program under consideration, their disability spell ends, they drop out of the survey (perhaps because of death), or they reach age 64. For each interview that respondents remain at risk of beginning participation in the program (i.e., they are disabled and not yet participating),

we observe a dichotomous outcome—they begin receiving benefits or they do not. We estimate logit model to regress these outcomes on the predictors, many of which vary over time. Because the data are arranged in person-year format, the results can be interpreted as discrete-time hazard models (Allison 1984). Predictors include sex, age, education, race, marital status interacted with spouse's employment status, log of income in the previous wave, log of household wealth, medical conditions, disability severity, disability duration, and whether the respondent worked 10 or more years. To enable us to measure disability duration, we estimate the hazard models on a sample of 1,065 respondents with disabilities who were not disabled at the baseline 1992 interview.

Measuring Economic Impacts of Disability

Our final set of analyses examines the relationship between disability, program participation, and economic status. We compare income and poverty status reported in the wave before disability onset and the wave after disability onset. We compute mean and median household income and own income (excluding spouse's income), with and without transfer income (disability, unemployment, and other government-provided benefits except Social Security retirement benefits). Transfers are sometimes excluded so we can observe how income would change after disability onset in the absence of government benefits (although we recognize that people might work more or rely more on family help if social insurance and public assistance were not available). The measure of own income, which shows how economic status changes when the potentially protective effects of spouse income are excluded, also includes half of asset income received by married couples and some other types of household income not attributed to a particular spouse (such as inheritances and lump sum payments from insurance policies). We measure poverty status before and after disability onset by computing the share

with incomes below the federal poverty level and the share with incomes below 125 percent. These estimates are restricted to 767 adults age 51 to 64 who are not disabled at the 1992 baseline interview, become disabled before age 64, and are observed the wave after disability onset. We also compare economic status for subsamples restricted to single adults, married adults, and to the 40 percent of respondents with the most severe disability (as measured by the disability index score).

Finally, we compare income and poverty measures before disability onset and after benefit receipt. We compare outcomes for those who receive any benefit, DI, and SSI. We also compute outcomes before and after disability onset for those who do not receive any benefits.

Results

This section begins with a description of how disability rates change as people approach age 64 and the characteristics of those age 51 to 64 with disabilities. It then describes our findings on disability benefit receipt and changes in income and poverty status following disability onset and benefit receipt.

Disability Prevalence at Age 51 to 64

Figure 1 shows that the cumulative probability of being disabled grows steadily from age 55 to 64, increasing from 21 to 43 percent. Because we define disability somewhat arbitrarily as those whose health score ranks them in the bottom 20 percent of the distribution for adults age 51 to 61, the actual disability rate is not particularly meaningful. What is noteworthy, however, is that the rate more than doubles as the cohort ages nine years, and increases 7 percentage points (or about 18 percent) as the cohort ages from 62 to 64. Disability rates are also significantly

higher for women than men, and grow with age. By age 64, for example, women are 13 percent more likely to have been disabled than men (45 percent vs. 40 percent).[20]

The likelihood of becoming disabled by age 64 varies by race, education, and income (table 1). African Americans and Hispanics are much more likely to become disabled than non-Hispanic whites. Disability rates also decline as educational attainment and income rise. Adults age 64 who did not complete high school are nearly three times as likely to have been disabled than their counterparts with at least a bachelor's degree, and those who completed high school but never attended college are about twice as likely. Disability differences by education are even more pronounced for women. Similarly, those in the bottom fifth of the income distribution when they were age 51 to 55 are about three times as likely to have been disabled by age 64 than those who were in the top fifth of the distribution in their early fifties.

Not surprisingly, adults with disabilities in our sample are much more likely to report chronic health conditions than those who were never disabled (table 2). For example, more than one-third of disabled adults report heart problems and psychological problems, and more than one-quarter report lung problems and diabetes. By contrast, the share of those who are never disabled between age 51 and 64 ever reporting these conditions ranges from 1 in 7 to 1 in 15. The disabled population is also disproportionately nonwhite and tends to have limited education. Nearly one-third (31.5 percent) of adults with disabilities at some point between age 51 and 64 did not complete high school, compared with 15.8 percent of those who were never disabled between age 51 and 64.

Most people who become disabled in their fifties and early sixties experience a sharp drop in health status, not a gradual decline. Figure 2 shows the average health index score before

[20] The share of men and women with disabilities at age 64 is somewhat lower, however, because some people recover.

and after disability onset for people who are disabled at some point between age 51 and 64. From the wave immediately before disability onset to disability onset, the average health index score drops 46 points, with the average person falling from the 29th percentile of the distribution to the 9th percentile. In earlier waves, the health index score declines only slightly. Health index scores rebound somewhat after disability onset, with the average person rising to the 18th percentile of the health index distribution, and then remains fairly constant in subsequent waves.

We observe slightly more than half of the respondents in our sample with disabilities at least four times while they are disabled (table 3). About one-fifth (21.4 percent) are observed just once. About one-quarter are observed six or more times. Women with disabilities tend to be observed longer than their male counterparts. For example, we observe 46 percent of women with disabilities in our sample for five or more waves, compared with only 35 percent of men. Those who are not disabled at the baseline interview but become disabled by age 64 are generally observed less frequently while disabled than those with baseline disabilities. Nearly half of respondents who become disabled after the first wave, for instance, remain in the sample for no more than two waves while disabled.

Table 4 shows why disability spells end. Death is by far the most common reason, accounting for about 58 percent of disability terminations in the full sample. About 18 percent of disabled respondents reach age 64, the next most common reason. Only about 13 percent recover from their disabilities, 9 percent drop out of the survey, and 2 percent reach the 2006 wave, the end of our panel. Deaths account for a greater share of spell terminations as spell length increases, while recoveries account for a smaller share. For example, 85 percent of spells lasting six waves ended with the death of the respondent, while only about 2 percent ended because the

respondent recovered. The reasons for spell terminations were distributed in similar proportions for spells that began after the first wave of the survey.

Receipt of Disability Benefits

Slightly fewer than half (46.7 percent) of adults who meet our disability criteria receive public disability benefits at some point between age 51 and 64 (table 5). DI is the most common benefit, with 30.3 percent receiving payments. About one-sixth (16.4 percent) receive SSI. Only 9.1 percent receive workers' compensation and 5.2 percent receive veterans' benefits.

Benefit receipt increases steadily as disabilities worsen. Among the fifth of disabled adults with the most serious disabilities, nearly three-quarters (74 percent) receive benefits from some public disability program. By contrast, only about one-sixth receive benefits among the fifth of disabled adults with the least serious disabilities. DI, SSI, and worker's compensation benefits are all significantly more common for people with the most severe disabilities. However, none of these programs covers even half of the most severely disabled adults. Among the 20 percent of adults with the most serious disabilities, only about 48 percent receive DI benefits at some point between age 51 and 64, 34 percent receive SSI, and 12 percent receive workers' compensation. Interestingly, veterans' benefits receipt does not vary significantly with disability severity.

Disability benefit receipt varies significantly by sex, race, education, and income. Disabled women are less likely to receive any benefits than disabled men. They are also less likely than men to receive DI, workers' compensation, and veterans' benefits, although they are more likely to receive SSI. Disabled African Americans are more likely than their non-Hispanic white counterparts to receive any benefits, including DI and especially SSI. Hispanics are also more likely than non-Hispanic whites to receive SSI. Disability benefit receipt declines as

educational attainment and baseline income increases. This pattern holds for DI, SSI, and all programs combined. Disabled adults who do not complete high school, for example, are nearly eight times as likely as college graduates to receive SSI, about 70 percent more likely to receive DI, and nearly twice as likely to receive any type of disability benefit.

African Americans, those with limited education, and those with limited income may be more likely than others to receive disability benefits partly because they tend to be the most seriously disabled. Many of the observed differences in benefit receipt narrow when we consider only the fifth of disabled adults with the most severe disabilities. Among the most severely disabled, for example, African Americans are not significantly more likely than non-Hispanic whites to receive some benefit, but they remain much more likely to receive SSI (and are much less likely to receive workers' compensation). High school graduates with the most severe disabilities are not significantly less likely to receive DI than their counterparts who did not complete high school (although they remain much less likely to receive means-tested SSI benefits). Men with the most severe disabilities are still much more likely than women with the most severe disabilities to receive workers' compensation and veterans' benefits, but both groups are about equally likely to receive some type of benefit. The multivariate models that we describe below attempt to sort out the influence of these various factors on disability receipt.

Most disabled adults receive disability benefits from only a single program. Only about 26 percent of those receiving benefits collect payments from exactly two sources between age 51 and 64, and only about 2 percent collect from more than two sources (table 6). About 14 percent of disability benefit recipients collect payments from both DI and SSI at some point in their fifties and early sixties, the most common combination among those receiving benefits from two programs. Receiving payments from more than one source increases as disability worsens.

Among the fifth of disabled adults with the most severe disabilities, for example, about 35 percent receive benefits from more than one program, compared with only about 10 percent among the fifth with the least severe disabilities.

Table 7 reports results from a logistic regression of disability benefit receipt from any program and from DI, SSI, workers' compensation, and the VA separately. The table reports odds ratios. Values greater than one indicate that the predictor is associated with higher odds of ever receiving disability benefits between age 51 and 64; values less than one indicate that the predictor is associated with lower odds.

Disability severity is an important predictor of benefit receipt. Disabled adults become increasingly likely to receive benefits as their disability worsens, suggesting that benefits are targeted to those who are least able to work. The effects are strongest for DI and weakest for veterans' benefits. When disability severity and other factors are controlled for, adults who have been diagnosed with a stroke are significantly more likely than others to receive benefits, primarily because they are much more likely to receive SSI. Cancer and heart problems are positively related to DI receipt but not to other types of benefits or benefit receipt overall. Other medical conditions—high blood pressure, diabetes, lung programs, psychological problems, and arthritis—do not significantly influence disability benefit receipt when disability severity is controlled for.

Socioeconomic status is related to benefit receipt. Household wealth in 1992 (the baseline interview) decreases the odds of receiving disability benefits. The effect is greatest for the SSI program (not surprising given its means test), and is also marginally significant for DI. However, higher wealth levels *increase* the odds of receiving workers' compensation, perhaps because of higher compensation levels for jobs in which one is more likely to be injured. Baseline income

does not significantly affect overall benefit receipt or DI receipt, but it decreases the likelihood of receiving SSI. Income is positively associated with workers' compensation and veterans' benefits receipt. College graduates are significantly less likely than high school graduates who never attended college to receive benefits from any program, except the VA, and those who did not complete high school are generally more likely to collect. Those who worked at least 10 years are significantly more likely to receive benefits from the employment-based DI and workers' compensation programs than those with shorter employment histories. To qualify for DI benefits, people in their fifties must have worked at least 10 years in Social Security-covered employment.

Several demographic factors also play roles in disability benefit receipt. Women and people who were ever married are less likely to receive any benefits than men and those who were never married. Women are also less likely than men to receive DI, workers' compensation, and veterans' benefits. Married adults are much less likely than singles to receive SSI. Those who become disabled by age 55 are more likely to receive benefits than those who became disabled later. African Americans are more likely than non-Hispanic whites to receive any benefits, although there are no significant differences in benefit receipt within individual programs.

The majority of disabled respondents in our sample who receive disability benefits report collecting payments at the first wave that we classify them as having disabilities. Among those who are not disabled at baseline but develop disabilities by age 64, about 62 percent are receiving benefits when they are first classified as having disabilities (table 8). (Some of these respondents, of course, could have waited two years for their benefits, because the interviews are conducted only every other year.) Another 25 percent receive benefits by the next wave. Only 13

percent of beneficiaries wait two or more waves to collect. SSI recipients, however, tend to wait longer. Only about 45 percent of SSI recipients collect SSI at the first disability wave and only 68 percent receive benefits within the first two waves, so nearly one-third went two or more waves without benefits. Although waiting times for DI benefits have been growing recently, during our 1992-2006 observation period slightly more than half (53.5 percent) of DI beneficiaries collected payments at the wave of disability onset. About 31 percent received payments at the next wave.

To further examine waiting times for disability benefits, table 9 reports results from a discrete-time hazard model of disability receipt from any program and from DI, SSI, workers' compensation, and the VA separately. As in table 7, odds ratios are displayed. The results show that adults age 51 to 64 with disabilities are significantly more likely to receive any benefits in the wave immediately following disability onset than in the wave when the disability begins.[21] If adults do not receive benefits within those first two waves, their chances decline sharply, but then do not change significantly in subsequent waves. This pattern is particularly evident for DI benefit receipt. Disabled adults age 59 to 61 are more likely to receive benefits, especially DI benefits, than those age 51 to 55. Initial DI benefit receipt is also more likely at age 62 to 64 than in the early fifties, although less likely than at age 59 to 61.[22] However, initial workers' compensation benefits are less likely after age 58 than at age 51 to 55.

Many results from the hazard models confirm the table 7 findings from a simple logit model of disability benefit receipts. Adults with the most severe disabilities are more likely than

[21] Disability duration before benefit receipt enters the regression as a spline, with each wave indicator showing the incremental impact of each elapsed wave on the likelihood of benefit receipt.

[22] At first blush these results seem to contradict the age-related results reported in table 7, but the two tables use different measures of age. Table 7 shows that adults who develop disabilities before age 56 (including those who become disabled at very young ages) are more likely to ever receive benefits between age 51 and 64 than those who develop disabilities later, whereas table 9 shows how age of initial benefit receipt varies for those who become disabled between age 51 and 64.

those with less severe disabilities to receive benefits. Disabled women are less likely to receive benefits than disabled men, and married adults (especially those with working spouses) are less likely to collect than single adults. Those who worked at least 10 years are more likely to receive DI and workers' compensation benefits, but less likely to receive SSI, than those with shorter employment histories. As also seen in table 7, a cancer diagnosis is associated with DI benefit receipt. However, education, race, and wealth, which are significant in table 7, are not significant in table 9 (although table 9 indicates that wealth reduces the chances of receiving SSI).

Impact of Disability on Economic Status

Table 10 reports mean and median annual income (in constant 2004 dollars) before and after disability onset for adults who develop disabilities between age 51 and 64. Mean annual household income falls by about $4,200 after disability onset, a 10 percent drop from pre-disability levels. Median household income falls by about $6,400, a much larger 21 percent drop (because median income is substantially lower than mean income due to outliers' influence on the mean). Government transfers provide some income support overall, but not a tremendous amount. When we exclude government transfers from the calculations, mean and median income fall by about 14 percent and 26 percent, respectively.

Spouses also provide income support in the event of disability. Mean own income (excluding spouse income) declines about 12 percent after disability onset, and 18 percent when government transfers are excluded. Median own income falls much more rapidly, dropping 31 percent overall and a stunning 47 percent when transfers are excluded. Among single disabled adults (those who were not married in the waves before and after disability onset), median annual

household income drops 36 percent, to a meager $14,269. When we exclude transfers, median household income falls 53 percent following disability onset.

Income falls more sharply for those who are more disabled. Among the two-fifths of disabled adults with the most severe disabilities according to their health index score, median household income falls about 34 percent following disability onset. Median own income drops 52 percent, while median own income excluding transfers falls by more than two-thirds. Those who develop the most severe disabilities also tend to have relatively low incomes before they become disabled. For the two-fifths of disabled adults with the most serious disabilities, median annual household income in the wave before disability onset is 20 percent below the level for all disabled adults age 51 to 64.

Poverty rates more than double following disability onset (table 11). For adults who become disabled between age 51 and 64, the share with income below the federal poverty level increases from 7.4 percent in the wave before disability onset to 15.5 percent in the wave after disability onset. Post-disability poverty rates reach nearly 31 percent for single adults and 21 percent for the two-fifths of disabled adults with the most severe disabilities. When we exclude government transfers from income, poverty rates after disability onset increase to about 25 percent for all disabled adults and to 45 percent for single disabled adults. Even greater percentages of disabled adults are poor or near poor, with income below 125 percent of the federal poverty level. The share of disabled adults with income below this threshold after disability onset reaches 21 percent for all adults with disabilities, 43 percent for single adults, and 31 percent of the two-fifths of disabled adults with the most severe disabilities.

Incomes fall more rapidly for disabled adults who receive disability benefits than those who do not receive benefits. Table 12 compares mean and median income before disability onset

and after benefit receipt. Focusing on median outcomes, we see that annual household income falls 41 percent after benefit receipt for those receiving any type of disability benefit, 51 percent for those receiving DI, and 24 percent for those receiving SSI. By contrast, median household income declined only 11 percent from the wave before disability onset to the wave after onset for those who do not receive any benefits, partly because those who collect benefits tend to have more serious disabilities. Own income generally falls more sharply than household income for those who receive benefits, and those who receive benefits have little other income. For example, when we exclude government transfers, median household income falls 75 percent from the wave before disability onset to the wave after benefit receipt for adults with disabilities receiving benefits.

Poverty rates also increase more sharply for disabled adults age 51 to 64 who receive disability benefits than for those who do not receive any benefits. For example, poverty rates almost triple from the wave before disability onset to the wave after benefit receipt for those receiving any type of benefit, increasing from 7.9 to 22.2 percent (table 13). About 31 percent of those collecting benefits receive annual household income that falls below 125 percent of the federal poverty level. If government transfer payments were eliminated, nearly half (48.6 percent) of disabled adults age 51 to 64 receiving disability benefits would be impoverished (again, assuming no other changes). For those receiving DI, the poverty rate is five times as high after benefit receipt than before disability onset. For those receiving SSI, the poverty rate reaches 45.6 percent in the wave after benefits begin. However, for those receiving no benefits, poverty rates increase only about 4 percentage points, to 10.5 percent, after disability onset.

Conclusions

Disability poses a significant risk to economic security for adults approaching traditional retirement ages. The likelihood of being disabled roughly doubles from age 55 to 64. These risks are not distributed evenly across the population. Women, African Americans, Hispanics, and those with limited education face much greater risks than other people. The financial consequences of disability are frightening. Poverty rates approximately double after disability onset for those who become unable to work in their fifties and early sixties. Among the two-fifths of those with the most serious disabilities, poverty rates reach 21 percent. Nearly one-third of single adults age 51 to 64 with disabilities are impoverished.

The patchwork of programs that make up the social insurance safety net for people with disabilities provides only limited protection. One shortcoming of the safety net is that fewer than half of adults age 51 to 64 who meet our disability criteria receive any benefits from DI, SSI, workers' compensation, or veterans' benefits, the four largest public disability programs. The largest, DI, pays benefits to only 30 percent of those with disabilities in their fifties and early sixties. Another 17 percent receive benefits from one of the other programs, indicating the importance of considering the full range of available programs when evaluating the social insurance safety net. It is encouraging that benefit receipt rates are much higher among those with the most serious disabilities, suggesting that benefits go predominantly to those with the greatest need. Among the fifth of disabled adults with the most serious disabilities, for example, nearly three-quarters receive disability benefits. Nonetheless, none of the four largest disability programs pays benefits to as many as half of these severely disabled adults.

Access to disability benefits appears to be a particular problem for women with disabilities. Even after disability severity, education, income, and wealth are controlled for,

women are significantly less likely than men to receive any disability benefits or to receive benefits from DI, SSI, or workers' compensation. Additional research is needed to understand fully this gender gap in disability benefit receipt. One likely partial explanation is that some women with intermittent employment histories have not worked long enough to qualify for DI (Mitchell and Phillips 2001). Also, women may be less likely than men to become disabled by workplace injuries, limiting their access to workers' compensation.

We also find some evidence that DI favors disabled workers with certain definable medical diagnoses at the expense of those with the same limited work ability but without these clear-cut conditions. For example, disabled adults who have been diagnosed with cancer are consistently more likely than those without a cancer diagnosis to receive DI benefits, even after we control for disability severity. In some of our model specifications (but not all), adults diagnosed with heart problems are also significantly more likely than those without heart problems to receive DI. DI's eligibility criteria, which rely on a list of specific qualifying medical conditions, may make it difficult for people with work limitations who lack certain serious diagnoses to obtain benefits. For example, one applicant with multiple less-serious medical conditions may be less likely to qualify for benefits than another with one serious condition, even if both applicants have the same work ability. While SSA has procedures to take multiple conditions into account, there may be ways to better integrate functional abilities into these decisions (Stobo, McGeary, and Barnes 2007). Although our results suggest that this issue may limit benefits for some people, additional research is needed.

A significant shortcoming of the disability safety net is that many people with disabilities who collect benefits do not receive enough help to make them financially secure. For adults age 51 to 64 who collect disability benefits, median household income declines by about 40 percent

from the period before disability onset to the period after initial benefit receipt, and poverty rates nearly triple, to 22 percent. Nearly one-third of those collecting benefits receive annual household income that falls below 125 percent of the federal poverty level. The financial struggles of adults with disabilities in their fifties and early sixties clearly do not end once they obtain benefits.

Financial challenges for disabled Americans approaching old age will likely intensify in coming years as the eligibility age for full Social Security retirement benefits increases. The financial penalty for taking early retirement benefits is higher for adults now turning 62 than it was for those who turned 62 before 2000, and it will begin increasing again in the next decade when the full retirement age begins rising from 66 to 67. Social Security's financial problems have led some analysts to recommend further increases in the early and full retirement ages. Although these changes may be necessary, policymakers should consider the impact on adults in their fifties and sixties with disabilities.

An obvious way to improve the economic status of adults with disabilities would be to loosen eligibility criteria and increase benefits. Such changes, however, run the risk of undercutting other policy objectives. For example, generous benefits may undermine work incentives, an undesirable result because work promotes the long-run economic and psychological well-being of persons with disabilities and their families. Society also benefits when adults with disabilities contribute their talents to the workplace. Strict eligibility screening can help ensure that program participants need or deserve benefits. However, they may also lead beneficiaries to cling tightly to their status once accepted, making them less willing to try to return to work if their disabling conditions improve for fear that they may not be able get back on

the program—or that it could take years to return—if things do not work out.[23] Quick intervention after disability onset has been shown to promote returns to work. But letting people enter the disability rolls quickly enough to provide early intervention may mean providing income support for conditions that are less serious and from which people would have quickly recovered anyway. Balancing the goal of alleviating need among those with disabilities who cannot support themselves with the goal of maintaining work incentives is thus exceedingly difficult.

Nonetheless, updating SSI seems long overdue. The asset limit for program eligibility has not changed in 20 years, while prices and real wealth have increased substantially. SSI benefit levels are too low to lift most beneficiaries out of poverty. Raising asset limits would likely increase benefit receipt among people with intermittent work histories who do not quality for DI, and increasing benefit payments would improve their economic well-being.

[23] The loss of subsidized health benefits also deters disability beneficiaries from returning to work.

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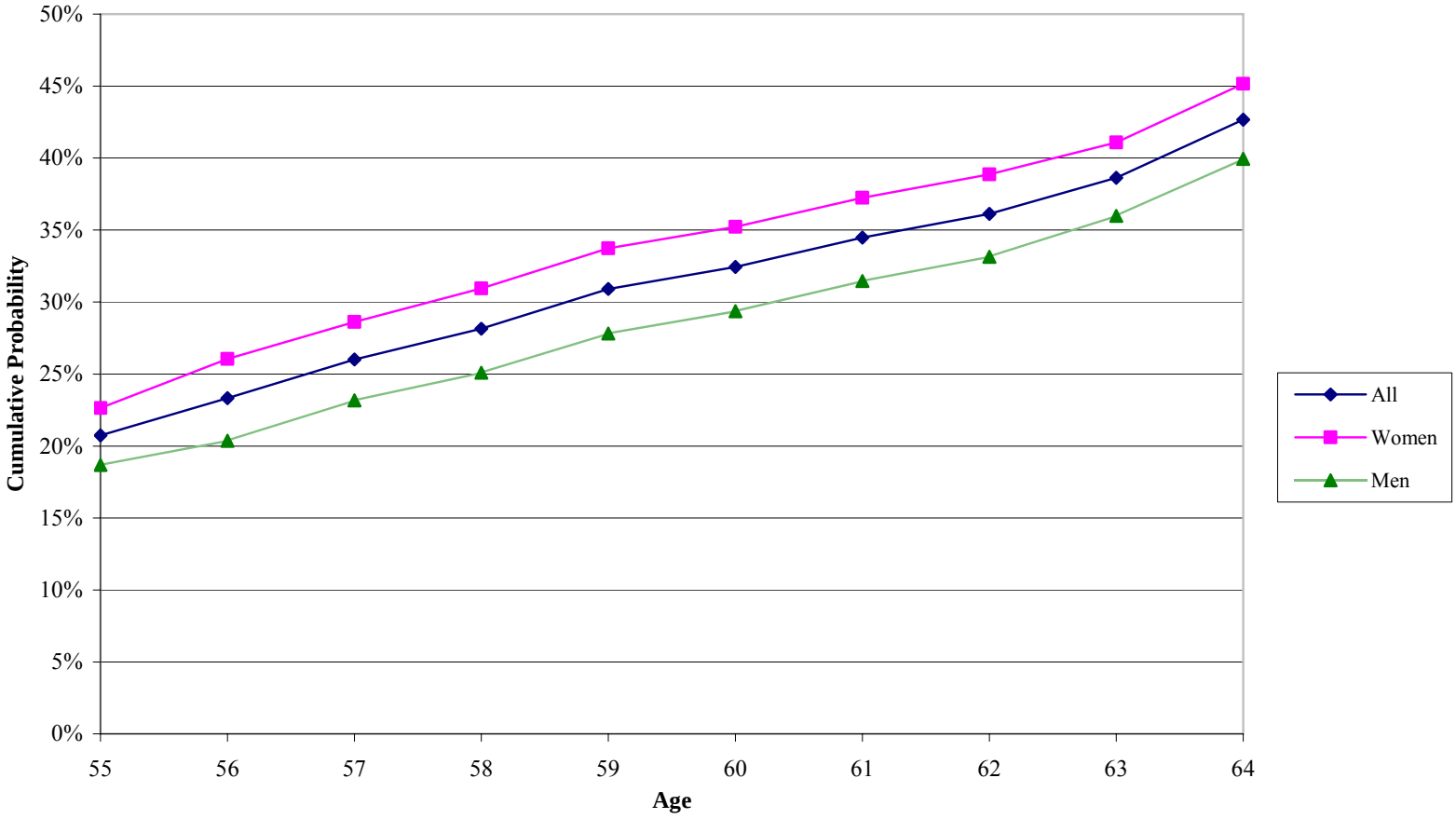
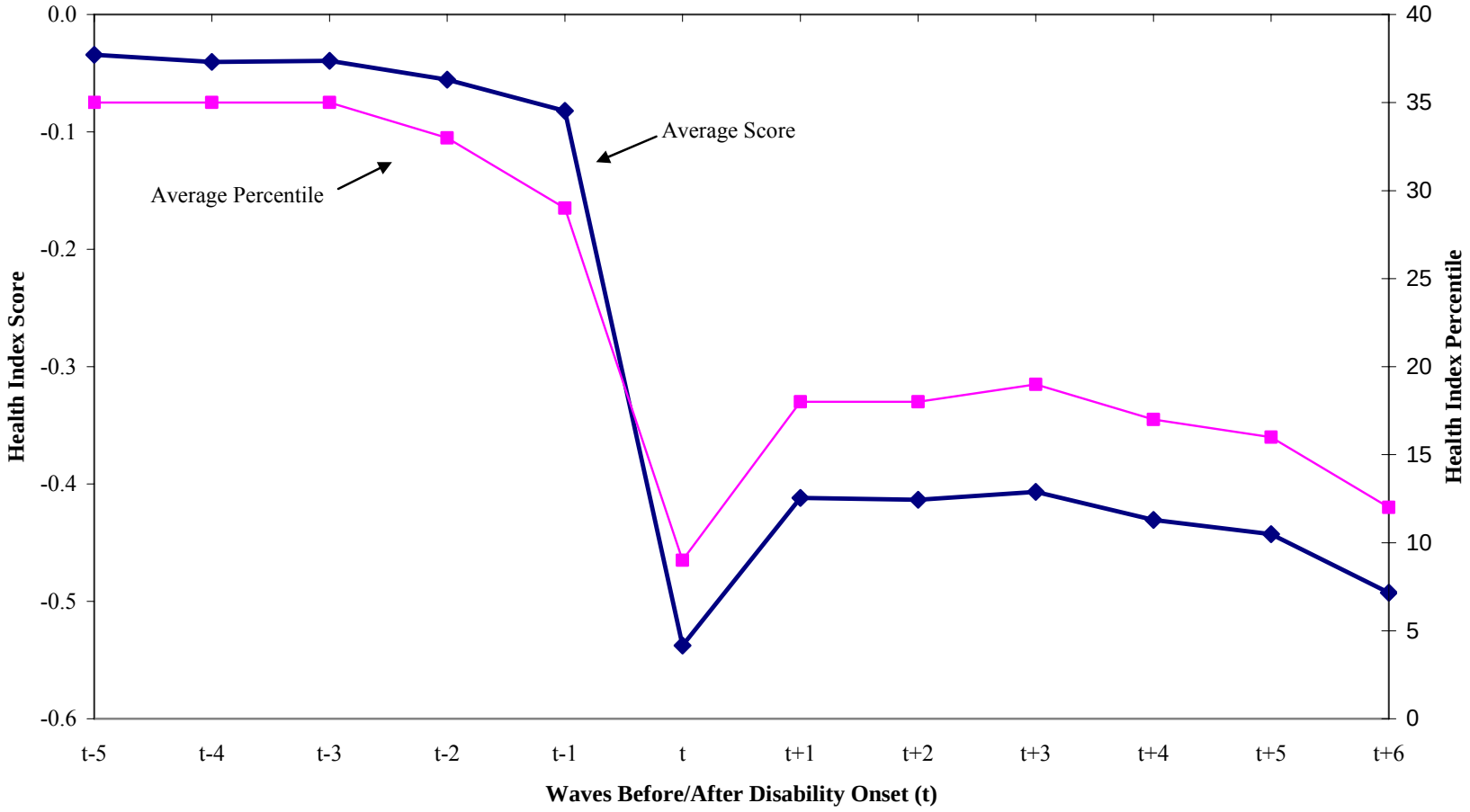
Figure 1. Cumulative Probability of Being Disabled, Age 55 to 64



Source: Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).
Note: Estimates are based on a sample of 4,661 noninstitutionalized adults age 51 to 55 in 1992. See text for disability definition.

Figure 2. Average Health Index Score and Percentile Before and After Disability Onset, Among Adults Age 51 to 64 with Disabilities



Source: Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).
Note: Estimates are based on a sample of 1,820 noninstitutionalized adults age 51 to 55 in 1992 who are disabled at some point between age 51 to 64. See text for disability definition.

Table 1. Percentage of Adults Who Become Disabled by Age 64

	All	Men	Women
All	42.7	40.0	45.2
Race			
Non-Hispanic White	39.9	37.1	42.6
African American	58.0	58.6	57.6
Hispanic	53.1	49.9	56.5
Education			
Not High School Graduate	61.3	56.3	65.3
High School Graduate	45.1	43.5	46.4
Some College, Less than 4 Years	38.0	37.5	38.5
Bachelor's Degree or More	21.4	31.9	20.7
Baseline (1991) Income Quintiles			
1 (lowest)	67.7	64.5	69.6
2	46.5	43.3	48.9
3	41.7	37.9	45.6
4	35.5	42.4	28.4
5 (highest)	22.1	20.4	24.3

Source: Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).

Note: Estimates are based on a sample of 4,661 noninstitutionalized adults age 51 to 55 in 1992. Adults of other races (i.e., Asians) are not included in the race breakdown. Income quintiles are adjusted for household size. See text for disability definition.

Table 2. Characteristics of Adults Ages 51 to 64, by Disability Status

	Ever Disabled Between Age 51 and 64		Never Disabled Between Age 51 and 64
Medical Conditions (ever) (%)			
High Blood Pressure	66.8	*	49.4
Diabetes	27.1	*	12.6
Cancer	17.2	*	8.9
Lung Problems	26.1	*	6.8
Heart Problems	38.2	*	13.8
Stroke	12.4	*	1.9
Psychological Problems	38.4	*	10.3
Arthritis	77.7	*	47.4
Any Condition	97.3	*	79.4
Education (%)			
Not High School Graduate	31.5	*	15.8
High School Graduate	40.2		37.3
Some College, Less than 4 Years	18.4	*	22.3
Bachelor's Degree or More	9.8	*	24.5
Race (%)			
Non-Hispanic White	75.2	*	83.8
African American	13.7	*	7.7
Hispanic	9.1	*	6.1
Other	2.1		2.5
Median Baseline (1991) Income ($)	28,756	*	44,873
N	1,820		2,841

Source : Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).

Note: Estimates are based on a sample of 4,661 noninstitutionalized adults age 51 to 55 in 1992. Income is adjusted for household size and is expressed in 2004 constant dollars. See text for disability definition

* Significantly different ($p < .05$) from never disabled adults.

Table 3. Percent Distribution of Disability Spell Length, by Sex

Number of Waves Disabled	All	Men	Women
Full Sample			
1	21.4	23.9	19.4
2	13.9	16.5	11.9
3	13.0	13.3	12.9
4	10.6	11.1	10.3
5	16.5	13.7	18.8
6	14.1	12.9	15.1
7	9.8	8.1	11.2
8	0.5	0.6	0.5
Not Disabled Wave 1 (1992)			
1	28.6	30.6	26.9
2	18.8	21.9	16.2
3	17.1	17.7	16.6
4	13.1	12.3	13.7
5	14.8	9.7	19.0
6	7.5	7.7	7.4
7	0.2	0.1	0.2

Source: Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).

Note: Estimates are based on a full sample of 1,820 noninstitutionalized adults age 51 to 55 in 1992 who are disabled at some point between age 51 to 64, including 1,059 adults who are not disabled in wave 1. Columns do not always sum to 100 percent because of rounding. See text for disability definition.

Table 4. Reasons for End of Disability Spell, by Spell Length

	All	Length of Disability Spell						
		1	2	3	4	5	6	7
Full Sample (%)								
Recover	12.5	22.4	18.4	17.6	14.1	5.8	2.4	0.7
Die	58.1	33.2	41.5	48.2	53.4	74.1	85.0	91.7
Reach Age 64	17.6	25.8	21.6	19.4	23.8	13.1	8.8	6.4
Drop Out of Survey	9.4	17.8	14.2	13.4	6.4	5.2	2.2	0.3
Reach Wave 8 (2006)	2.3	0.8	4.3	1.5	2.3	1.8	1.5	0.9
N	1820	384	251	239	200	305	259	172
Not Disabled Wave 1 (1992) (%)								
Recover	14.5	22.4	18.9	15.6	8.9	2.6	4.5	—
Die	61.2	42.1	52.2	62.1	73.5	86.4	84.1	—
Reach Age 64	13.8	22.8	15.0	12.0	9.8	4.7	6.6	—
Drop Out of Survey	7.5	11.8	8.7	8.4	4.7	3.0	0.0	—
Reach Wave 8 (2006)	3.1	1.1	5.3	1.9	3.2	3.3	4.9	—
N	1059	297	198	184	144	157	76	3

Source: Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).

Note: Estimates are based on a full sample of 1,820 noninstitutionalized adults age 51 to 55 in 1992 who are disabled at some point between age 51 to 64, including 1,059 adults who are not disabled in wave 1. Columns do not always sum to 100 percent because of rounding. See text for disability definition.

Table 5. Percentage of Disabled Adults Age 51 to 64 Who Ever Receive Benefits

	N	Any	DI	SSI	WC	VA
All	1,820	46.7	30.3	16.4	9.1	5.2
Disability Quintile						
1 (least disabled)	330	16.3	6.8	2.3	4.5	4.4
2	358	34.0 *	21.1 *	6.7 *	8.9 *	5.3
3	370	48.9 *	34.0 *	14.8 *	9.7 *	5.5
4	374	60.3 *	41.7 *	24.4 *	10.6 *	3.1
5 (most disabled)	388	74.0 *	48.1 *	33.6 *	11.9 *	7.7
Sex						
Male	800	52.4	35.6	14.3	12.1	7.2
Female	1,020	42.2 *	26.1 *	18.0 *	6.8 *	3.5 *
Race						
Non-Hispanic White	1,174	43.2	29.0	12.5	9.6	5.3
African American	389	62.9 *	38.3 *	30.4 *	7.5	6.8
Hispanic	222	50.7	28.1	26.7 *	8.8	2.6
Education						
Not High School Graduate	636	58.6	36.5	29.1	10.4	2.3
High School Graduate	711	43.3 *	30.0 *	13.3 *	8.5	5.2 *
Some College, Less than 4 Years	313	42.2 *	25.2 *	8.1 *	11.2	7.6 *
Bachelor's Degree or More	160	31.1 *	21.4 *	3.8 *	3.9 *	9.6 *
Baseline (1991) Income Quintile						
1 (lowest)	660	62.6	37.1	36.8	7.2	3.8
2	420	41.7 *	31.4	9.7 *	9.9	2.9
3	319	37.2 *	26.5 *	7.1 *	7.1	5.2
4	266	38.1 *	24.5 *	3.0 *	13.4 *	8.6 *
5 (highest)	155	38.0 *	22.8 *	3.1 *	10.8	9.0 *
Most Severe Disability Quintile						
Male	151	75.4	49.0	29.5	18.7	11.8
Female	237	73.1	47.5	36.3	7.3 *	5.0 *
Non-Hispanic White	204	70.0	48.5	26.9	13.3	7.0
African American	116	79.6	47.1	43.2 *	4.9 *	10.7
Hispanic	59	84.6 *	46.5	53.0 *	17.9	4.7
Not High School Graduate	177	80.8	49.0	43.0	14.1	3.7
At Least High School Graduate	211	69.1 *	47.7	26.6 *	10.2	10.7 *

Source : Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).

Note: Estimates are based on a sample of 1,820 noninstitutionalized adults age 51 to 55 in 1992 who are disabled at some point between age 51 to 64. Adults of other races (i.e., Asians) are not included in the race breakdown. Income quintiles are adjusted for household size. DI = Social Security Disability Insurance, SSI = Supplemental Security Income, WC = Workers' Compensation, VA = Veterans' Benefits. See text for disability definition.

* Significantly different ($p < .05$) from the first row in each subgroup.

Table 6. Multiple Benefit Receipt by Disabled Adults Age 51 to 64 Receiving Benefits (%)

		Disability Severity (Quintiles)				
	All	**1**	**2**	**3**	**4**	**5**
Only One Program	71.9	89.9	78.8	72.2	69.2	66.4
DI	39.7	37.2	43.3	44.1	40.9	34.7
SSI	16.8	9.0	8.7	12.4	19.2	23.0
WC	8.8	20.4	16.4	9.2	6.7	4.1
VA	6.6	23.3	10.4	6.5	2.4	4.6
Two Programs	26.0	10.0	19.2	25.6	29.3	30.2
DI and SSI	14.1	2.6	7.7	13.3	17.7	17.2
DI and WC	7.1	1.8	7.4	7.7	8.3	6.8
Other combination	4.8	5.6	4.1	4.6	3.3	6.2
More than Two Programs	2.1	0.1	2.0	2.2	1.5	3.4

Source : Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).

Note: Estimates are based on a sample of 880 noninstitutionalized adults age 51 to 55 in 1992 who are disabled and receiving benefits at some point between age 51 to 64. The fifth disability quintile is the most severe. DI = Social Security Disability Insurance, SSI = Supplemental Security Income, WC = Workers' Compensation, VA = Veterans' Benefits. See text for disability definition.

Table 7. Logit Estimates of the Odds of Receiving Disability Benefits, by Program

	Any	DI	SSI	WC	VA
Most Severe Disability Quintile					
[Reference: 1 (least disabled)]	—	—	—	—	—
2	1.983**	2.950**	1.763	1.802*	1.418
	(0.380)	(0.739)	(0.764)	(0.608)	(0.521)
3	3.628**	5.660**	3.625**	2.003**	1.721
	(0.687)	(1.373)	(1.468)	(0.664)	(0.636)
4	5.080**	7.390**	5.018**	2.125**	1.260
	(0.996)	(1.820)	(2.016)	(0.722)	(0.517)
5 (most disabled)	8.595**	9.273**	6.170**	2.844**	2.334**
	(1.805)	(2.347)	(2.497)	(0.981)	(0.910)
Female	0.464**	0.600**	0.808	0.500**	0.353**
	(0.055)	(0.071)	(0.130)	(0.093)	(0.085)
Age of Onset					
[Reference: Younger than 56]	—	—	—	—	—
56 to 58	0.719**	0.646**	1.047	0.473**	1.141
	(0.104)	(0.101)	(0.210)	(0.126)	(0.330)
59 to 61	0.695**	0.821	0.660	0.413**	0.686
	(0.115)	(0.144)	(0.179)	(0.122)	(0.255)
62 to 64	0.501**	0.555**	0.255**	0.258**	1.178
	(0.093)	(0.114)	(0.107)	(0.101)	(0.413)
Ever Married	0.662**	1.022	0.394**	0.635**	0.664
	(0.091)	(0.142)	(0.065)	(0.142)	(0.174)
Worked 10+ Years at Onset	1.215	2.221**	0.391**	3.038**	0.696
	(0.186)	(0.358)	(0.067)	(1.063)	(0.233)
Log Baseline Income	1.027	1.031	0.912**	1.474**	1.250*
	(0.035)	(0.036)	(0.036)	(0.178)	(0.157)
Log Baseline Wealth	0.950**	0.973*	0.918**	1.050*	0.988
	(0.014)	(0.014)	(0.016)	(0.028)	(0.030)
Education					
Not High School Graduate	1.295*	1.074	1.473**	1.404	0.471**
	(0.171)	(0.142)	(0.245)	(0.300)	(0.155)
[Reference: High School Graduate]	—	—	—	—	—
Some College, Less Than 4 Years	0.854	0.679**	0.537**	1.060	1.757**
	(0.133)	(0.113)	(0.140)	(0.260)	(0.484)
Bachelor's Degree or More	0.655**	0.622**	0.396**	0.267**	2.090**
	(0.136)	(0.140)	(0.171)	(0.122)	(0.686)
Race					
African American	1.306*	1.158	1.228	0.798	1.420
	(0.189)	(0.167)	(0.222)	(0.198)	(0.394)
Hispanic	0.837	0.765	1.169	1.037	0.462
	(0.148)	(0.141)	(0.260)	(0.307)	(0.250)
[Reference: Non-Hisp White, Other]	—	—	—	—	—

(continued)

Table 7. (Continued)

	Any	DI	SSI	WC	VA
Medical Conditions (Ever)					
High Blood Pressure	1.004	1.047	1.085	0.979	1.054
	(0.128)	(0.141)	(0.204)	(0.203)	(0.272)
Diabetes	1.000	0.968	1.161	0.907	0.869
	(0.117)	(0.116)	(0.178)	(0.176)	(0.211)
Cancer	1.169	1.419**	0.995	1.098	0.935
	(0.158)	(0.193)	(0.184)	(0.238)	(0.261)
Lung Problems	1.121	0.986	1.295	1.003	1.300
	(0.141)	(0.125)	(0.210)	(0.203)	(0.326)
Heart Problems	1.172	1.278**	0.991	1.006	0.839
	(0.133)	(0.148)	(0.152)	(0.188)	(0.194)
Stroke	1.324*	1.093	1.521**	0.561**	0.785
	(0.209)	(0.164)	(0.288)	(0.159)	(0.251)
Psychological Problems	1.162	1.199	1.058	1.106	1.041
	(0.135)	(0.143)	(0.163)	(0.211)	(0.251)
Arthritis	1.016	0.834	1.180	1.337	1.226
	(0.142)	(0.120)	(0.243)	(0.326)	(0.348)
N	1830	1830	1830	1830	1830
Chi-squared (25)	450.7	305.8	476.1	107.8	67.3
Pseudo R-squared	0.178	0.134	0.279	0.102	0.090

Source : Authors' estimates from 1992-2006 waves of the Health and Retirement Study (HRS).

Notes: The table reports odds ratios estimated from logistic regressions in which the dependent variable equals one if the respondent ever receives benefits from a particular program while disabled between 1992 and the interview wave in which they are age 64 (zero otherwise). Standard errors are shown in parentheses. The sample is restricted to 1,830 noninstitutionalized adults age 51 to 55 in 1992 who become disabled by age 64. See text for disability definition. DI = Social Security Disability Insurance, SSI = Supplemental Security Income, WC = Workers' Compensation, VA = Veterans' Benefits.

* $0.05<p<0.1$

** $p<0.05$

Table 8. Number of Waves With Disability Before Receiving Benefits

Number of Waves	Any	SSDI	SSI	WC	VA
Full Sample (%)					
0	65.9	58.6	47.9	66.9	63.0
1	18.7	22.0	19.5	19.0	17.9
2	7.0	9.5	14.7	6.0	11.2
3	4.7	5.5	9.1	5.8	0.9
4	2.4	1.8	4.5	1.5	5.6
5	1.4	1.9	3.7	0.8	1.4
6	—	0.6	0.5	—	—
7	—	—	0.2	—	—
N	885	578	324	154	95
Not Disabled Wave 1 (%)					
0	62.1	53.5	44.6	75.0	62.0
1	25.1	30.5	23.3	19.5	28.4
2	5.4	8.0	17.6	3.7	5.2
3	5.4	5.4	9.3	1.9	4.4
4	1.5	1.6	3.7	—	—
5	0.6	1.0	1.5	—	—
N	416	263	121	71	53

Source : Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).

Note: Estimates are based on a sample of 1,820 noninstitutionalized adults age 51 to 55 in 1992 who are disabled at some point between age 51 to 64. DI = Social Security Disability Insurance, SSI = Supplemental Security Income, WC = Workers' Compensation, VA = Veterans' Benefits. See text for disability definition.

Table 9. Discrete-Time Hazard Models of the Odds of Receiving Disability Benefits

	Any	DI	SSI	WC	VA
Disability Quintile					
[Reference: 1 (least disabled)]	—	—	—	—	—
2	3.318**	3.844**	1.070	7.379*	0.532
	(1.086)	(1.735)	(0.648)	(7.888)	(0.347)
3	3.283**	5.990**	2.525*	6.298*	0.231*
	(1.067)	(2.596)	(1.225)	(6.812)	(0.184)
4	6.619**	9.456**	4.689**	15.46**	0.948
	(2.040)	(3.973)	(2.093)	(16.402)	(0.592)
5 (most disabled)	10.95**	14.42**	6.792**	19.92**	0.872
	(3.319)	(5.975)	(2.951)	(21.148)	(0.578)
Female	0.507**	0.589**	0.666*	0.287**	0.813
	(0.074)	(0.101)	(0.157)	(0.083)	(0.325)
Age					
51 to 55	—	—	—	—	—
56 to 58	0.941	1.139	1.241	0.653	0.921
	(0.213)	(0.366)	(0.447)	(0.225)	(0.672)
59 to 61	1.442*	2.497**	1.191	0.447**	1.756
	(0.318)	(0.751)	(0.440)	(0.167)	(1.214)
62 to 64	0.926	1.690*	0.686	0.293**	2.381
	(0.217)	(0.532)	(0.278)	(0.127)	(1.668)
Education					
Not High School Graduate	1.223	1.292	1.008	1.220	0.629
	(0.196)	(0.242)	(0.244)	(0.381)	(0.336)
[Reference: High School Graduate]	—	—	—	—	—
Some College, Less Than 4 Years	0.786	0.747	0.586	0.517*	1.175
	(0.160)	(0.184)	(0.217)	(0.196)	(0.607)
Bachelor's Degree or More	0.893	0.952	0.406	0.139**	2.298
	(0.223)	(0.278)	(0.251)	(0.105)	(1.192)
Race					
African American	1.090	0.990	1.318	0.793	1.406
	(0.197)	(0.208)	(0.352)	(0.308)	(0.718)
Hispanic	1.096	0.695	1.648*	1.076	0.317
	(0.242)	(0.199)	(0.497)	(0.471)	(0.339)
[Reference: Non-Hisp White, Other]	—	—	—	—	—
Worked 10+ Years	1.007	1.881**	0.287**	4.471**	0.505
	(0.220)	(0.554)	(0.073)	(3.323)	(0.302)
Marital Status					
Spouse Works	0.528**	0.744	0.551**	0.392**	0.563
	(0.096)	(0.166)	(0.163)	(0.130)	(0.313)
Spouse Does Not Work	0.724*	1.044	0.736	0.343**	1.219
	(0.124)	(0.210)	(0.190)	(0.123)	(0.557)
[Reference: Not Married]	—	—	—	—	—
Log Income of Previous Wave	0.963	0.972	0.930	1.461**	0.945
	(0.035)	(0.046)	(0.042)	(0.235)	(0.105)
Log Wealth	0.975	0.976	0.924**	1.062	1.058
	(0.017)	(0.021)	(0.024)	(0.043)	(0.063)

(continued)

Table 9. (Continued)

	Any	DI	SSI	WC	VA
Number of Waves Elapsed Since Disability Onset					
One or More Waves	1.576**	2.111**	1.191	0.845	0.566
	(0.254)	(0.389)	(0.332)	(0.278)	(0.280)
Two or More Waves	0.306**	0.342**	1.200	0.211**	0.392
	(0.080)	(0.090)	(0.375)	(0.162)	(0.266)
Three or More Waves	1.489	0.799	0.900	0.574	0.475
	(0.461)	(0.268)	(0.314)	(0.711)	(0.443)
Medical Conditions					
High Blood Pressure	0.928	1.089	1.011	0.745	0.792
	(0.130)	(0.182)	(0.227)	(0.202)	(0.310)
Diabetes	1.060	1.046	1.027	1.440	1.233
	(0.173)	(0.201)	(0.245)	(0.458)	(0.563)
Cancer	1.073	1.618**	0.965	0.275**	0.631
	(0.210)	(0.343)	(0.339)	(0.168)	(0.397)
Lung Problems	1.040	1.201	1.156	0.640	0.587
	(0.183)	(0.238)	(0.308)	(0.259)	(0.367)
Heart Problems	0.839	1.123	0.816	0.652	1.194
	(0.130)	(0.194)	(0.199)	(0.220)	(0.510)
Stroke	1.211	1.072	1.661	0.263*	—
	(0.284)	(0.282)	(0.544)	(0.198)	
Psychological Problems	0.717**	0.794	0.675	0.751	0.530
	(0.118)	(0.152)	(0.165)	(0.250)	(0.296)
Arthritis	0.939	1.030	1.104	1.037	0.612
	(0.137)	(0.181)	(0.266)	(0.301)	(0.241)
N (Person-Year Observations)	2167	2484	2853	2873	2691
Chi-squared (29)	232.4	192.2	159.4	146.6	37.5
Pseudo R-squared	0.131	0.138	0.171	0.228	0.111

Source : Authors' estimates from 1992-2006 waves of the Health and Retirement Study (HRS).

Notes : The table reports odds ratios estimated from discrete-time hazard models, in which the dependent variable equals one if the respondent begins to receive benefits from a particular program while disabled (zero otherwise). Standard errors are shown in parentheses. The sample is restricted to noninstitutionalized disabled adults age 51 to 55 in 1992 who are not disabled in wave 1 who become disabled by age 64. See text for disability definition. DI = Social Security Disability Insurance, SSI = Supplemental Security Income, WC = Workers' Compensation, VA = Veterans' Benefits.
* $0.05<p<0.1$
** $p<0.05$

Table 10. Income before and after Disability for Adults Who Become Disabled between Age 51 and 64, by Disability Severity and Marital Status

	Mean				Median			
	Household Income		Own Income		Household Income		Own Income	
	Total	Exc. Transfers	Total	Exc. Transfers	Total	Exc. Transfers	Total	Exc. Transfers
All								
Before Disability ($)	41,511	40,087	34,602	33,516	30,597	29,670	24,267	23,384
After Disability ($)	37,350	34,624	30,569	27,543	24,196	21,903	16,651	12,502
Income Decline								
Level (%)	4,161	5,463	4,033	5,973	6,401	7,767	7,616	10,882
Percent	10.0	13.6	11.7	17.8	20.9	26.2	31.4	46.5
40% with Most Severe Disability								
Before Disability ($)	33,282	30,825	27,623	26,534	24,327	23,384	19,366	18,187
After Disability ($)	29,405	25,494	21,881	17,917	16,116	12,724	9,348	5,877
Income Decline								
Level (%)	3,877	5,331	5,742	8,617	8,211	10,660	10,018	12,310
Percent	11.6	17.3	20.8	32.5	33.8	45.6	51.7	67.7
Single Adults								
Before Disability ($)	32,381	30,399	32,381	30,399	22,231	20,613	22,231	20,613
After Disability ($)	23,913	20,771	23,913	20,771	14,269	9,674	14,269	9,674
Income Decline								
Level (%)	8,468	9,628	8,468	9,628	7,962	10,939	7,962	10,939
Percent	26.2	31.7	26.2	31.7	35.8	53.1	35.8	53.1
Married Adults								
Before Disability ($)	45,398	44,216	22,458	21,952	35,627	34,260	16,038	15,890
After Disability ($)	43,377	40,931	20,587	18,841	29,828	27,475	11,704	9,123
Income Decline								
Level (%)	2,021	3,285	1,871	3,111	5,799	6,786	4,335	6,766
Percent	4.5	7.4	8.3	14.2	16.3	19.8	27.0	42.6

Source : Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).

Note: Estimates are based on a sample of 767 noninstitutionalized adults age 51 to 55 in 1992 who are not disabled in 1992 but become disabled at some point between age 51 to 64 and are observed the wave after disability onset. Income is measured in constant 2004 dollars in the wave before disability onset and the wave after disability onset and adjusted for household size. Estimates for single and married adults exclude those who change marital status in the waves before and after disability onset. See text for disability definition.

Table 11. Poverty and Near-Poverty Rates before and after Disability for Adults Who Become Disabled between Age 51 and 64, by Disability Severity and Marital Status

	Income below the Federal Poverty Level		Income below 125% of the Federal Poverty Level	
	Total	**Exc. Transfers**	**Total**	**Exc. Transfers**
All				
Before Disability (%)	7.4	11.7	9.8	14.0
After Disability (%)	15.5	24.8	21.4	28.6
Percentage Point Change	8.1	13.1	11.6	14.6
40% with Most Severe Disability				
Before Disability (%)	9.7	15.3	13.1	19.2
After Disability (%)	20.6	36.7	31.3	40.6
Percentage Point Change	10.9	21.4	18.2	21.4
Single Adults				
Before Disability (%)	17.0	23.8	19.7	26.4
After Disability (%)	30.5	45.3	42.9	53.8
Percentage Point Change	13.5	21.5	23.2	27.4
Married Adults				
Before Disability (%)	4.2	6.7	5.7	8.0
After Disability (%)	8.4	14.3	10.7	16.2
Percentage Point Change	4.2	7.6	5.0	8.2

Source : Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).

Note: Estimates are based on a sample of 767 noninstitutionalized adults age 51 to 55 in 1992 who are not disabled in 1992 but become disabled at some point between age 51 to 64 and are observed the wave after disability onset. Income is measured in the wave before disability onset and the wave after disability onset. Estimates for single and married adults exclude those who change marital status in the waves before and after disability onset. See text for disability definition.

Table 12. Income before Disability Onset and after Benefit Receipt for Adults Who Become Disabled between Age 51 and 64, by Program

	Mean				Median			
	Household Income		Own Income		Household Income		Own Income	
	Total	Exc. Transfers	Total	Exc. Transfers	Total	Exc. Transfers	Total	Exc. Transfers
Any Program								
Before Disability ($)	36,181	34,742	33,300	32,589	27,281	27,165	24,571	24,520
After Benefit Receipt ($)	26,523	20,397	21,573	14,191	15,987	8,242	12,415	6,124
Income Decline								
Level ($)	9,658	14,345	11,727	18,398	11,294	18,923	12,156	18,396
Percent	26.7	41.3	35.2	56.5	41.4	69.7	49.5	75.0
DI								
Before Disability ($)	37,339	35,731	34,044	33,028	28,923	28,176	24,782	24,766
After Benefit Receipt ($)	22,255	16,550	16,927	10,174	14,061	7,139	11,839	3,326
Income Decline								
Level ($)	15,084	19,181	17,117	22,854	14,862	21,037	12,943	21,440
Percent	40.4	53.7	50.3	69.2	51.4	74.7	52.2	86.6
SSI								
Before Disability ($)	21,885	19,237	18,715	16,637	10,476	7,795	9,344	7,180
After Benefit Receipt ($)	12,347	7,349	10,624	5,539	7,978	4,804	7,486	1,287
Income Decline								
Level ($)	9,538	11,888	8,091	11,098	2,498	2,991	1,858	5,893
Percent	43.6	61.8	43.2	66.7	23.8	38.4	19.9	82.1
No Benefits								
Before Disability ($)	47,213	46,528	36,564	36,224	35,023	34,864	25,741	25,273
After Disability ($)	46,822	46,160	37,928	37,596	31,038	30,537	21,872	21,872
Income Decline								
Level ($)	391	368	-1,364	-1,372	3,985	4,327	3,869	3,401
Percent	0.8	0.8	-3.7	-3.8	11.4	12.4	15.0	13.5

Source: Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).

Note: Estimates are based on a sample of 205 (135 for DI and 64 for SSI) noninstitutionalized adults age 51 to 55 in 1992 who are not disabled in 1992 but become disabled and receive benefits at some point between age 51 to 64 and are observed the wave after initial benefit receipt and a sample of 399 noninstitutionalized adults age 51 to 55 in 1992 who are not disabled in 1992 but become disabled at some point between age 51 to 64, are observed the wave after disability onset, and are not observed receiving benefits at any point between age 51 to 64. Income is adjusted for household size and measured in constant 2004 dollars in the wave before disability onset and the wave after initial benefit receipt. DI = Social Security Disability Insurance and SSI = Supplemental Security Income. See text for disability definition.

Table 13. Poverty and Near-Poverty Rates before Disability Onset and after Benefit Receipt for Adults Who Become Disabled between Age 51 and 64, by Disability Severity and Marital Status

	Income below the Federal Poverty Level		Income below 125% of the Federal Poverty Level	
	Total	**Exc. Transfers**	**Total**	**Exc. Transfers**
Any Program				
Before Disability (%)	7.9	15.5	12.3	19.3
After Benefit Receipt (%)	22.2	48.6	31.1	51.7
Percentage Point Change	14.3	33.1	18.8	32.4
DI				
Before Disability (%)	3.9	11.0	7.0	14.8
After Benefit Receipt (%)	19.8	51.3	29.9	55.0
Percentage Point Change	15.9	40.3	22.9	40.2
SSI				
Before Disability (%)	22.5	37.6	36.8	52.5
After Benefit Receipt (%)	45.6	75.6	64.3	80.5
Percentage Point Change	23.1	38.0	27.5	28.0
No Benefits				
Before Disability (%)	6.2	7.0	7.6	8.9
After Disability (%)	10.5	11.5	13.1	13.1
Percentage Point Change	4.3	4.5	5.5	4.2

Source : Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).

Note: Estimates are based on a sample of 205 (135 for DI and 64 for SSI) noninstitutionalized adults age 51 to 55 in 1992 who are not disabled in 1992 but become disabled and receive benefits at some point between age 51 to 64 and are observed the wave after initial benefit receipt and a sample of 399 noninstitutionalized adults age 51 to 55 in 1992 who are not disabled in 1992 but become disabled at some point between age 51 to 64, are observed the wave after disability onset, and are not observed receiving benefits at any point between age 51 to 64. Income is adjusted for household size and measured in constant 2004 dollars in the wave before disability onset and the wave after initial benefit receipt. DI = Social Security Disability Insurance and SSI = Supplemental Security Income. See text for disability definition.

Appendix Table 1. Marginal Impact of Personal Characteristics on the Probability of Labor Force Participation, Age 51 to 61

Personal Characteristics	Marginal Effect	Standard Error
Work Disability	-0.392**	0.007
Fair or Poor Health	-0.079**	0.007
Limitation with Activity of Daily Living (ADL)		
Walking across the Room	-0.083**	0.017
Dressing	-0.012	0.012
Bathing	-0.097**	0.017
Eating	-0.127**	0.029
Getting in/out of Bed	-0.016	0.012
Functional Impairments		
Walk Several Blocks	-0.020**	0.008
Walk 1 Block	-0.060**	0.012
Sit for 2 hours	-0.017**	0.006
Get up from Chair	0.034**	0.006
Climb Several Flights of Stairs	0.009	0.006
Climb 1 Flight of Stairs	-0.032**	0.009
Stoop	0.013**	0.006
Lift 10 Pounds	-0.043**	0.007
Pick up a Dime	-0.034**	0.011
Extend Arms over Head	-0.012	0.008
Push/Pull Large Objects	-0.022**	0.007
Depression Score	-0.002*	0.001
Age		
[Ref: 51]	—	—
52	-0.012	0.014
53	-0.003	0.013
54	-0.028**	0.013
55	-0.043**	0.013
56	-0.069**	0.013
57	-0.084**	0.013
58	-0.114**	0.014
59	-0.134**	0.014
60	-0.178**	0.014
61	-0.227**	0.014
Race/Ethnicity		
Black	-0.005	0.007
Hispanic	-0.027**	0.009
[Ref: Non-Hispanic White/Other]		
Education		
Not High School Graduate	-0.093**	0.006
[Ref: High School Graduate]	—	—
At Least Some College	0.054**	0.006
Male	-0.017*	0.010
Married	0.073**	0.010
Married, Female	-0.230**	0.011
Female, Has Children	-0.034**	0.008
Has Children	0.019**	0.006
Spouse in Labor Force	0.113**	0.005
Log of Financial Wealth	-0.006**	0.001
Log of Spouse Income	-0.007**	0.001

Source: Authors' estimates from the 1992-2006 waves of the Health and Retirement Study (HRS).
Note: Estimates are from a probit model of labor force participation, estimated on a sample of 49,904 observations on noninstitutionalized respondents age 51 to 61, pooled from 1992 to 2006.
* $.05 \leq p < .10$; ** $p < 0.05$

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