

DISABILITY SHOCKS NEAR RETIREMENT AGE AND FINANCIAL WELL-BEING

by Irena Dushi and Kalman Rupp*

Using Health and Retirement Study data, we examine three groups of adults aged 51–56 in 1992 with different disability experiences over 8 years. Our analysis reveals three major findings. First, people who started and stayed nondisabled experienced stable financial security, with improvement in household wealth despite labor force withdrawal. Second, the newly disabled—people who started as nondisabled but suffered a disability shock—experienced increased poverty rates and decreased median incomes. Average earnings loss was the greatest for them, with public and private benefits replacing less than half of the loss, whereas increased public health insurance coverage alleviated reduced private health insurance coverage. The newly disabled experienced improvement in household wealth, although at a lower rate compared with those who stayed nondisabled. Third, people who started and stayed disabled were behind at the baseline and have fallen further behind on most measures, except for improvement in health insurance coverage.

Introduction

The increased incidence of disablement near retirement age is of policy concern because of potentially nontrivial negative consequences on financial security and overall well-being. This is reflected in an increasing body of literature addressing various aspects of disability shocks (Smith 1999, 2005, 2007; Ward-Batts 2001; Coile 2004; Johnson, Mermin, and Murphy 2007; Johnson, Mermin, and Uccello 2005; Johnson, Favreault, and Mommaerts 2010; McGarry and Skinner 2009). More specifically, those previous studies have looked at the effect of health and disability shocks on various indicators such as wealth, income, and consumption. Their findings suggest that reductions in labor income and increased medical out-of-pocket (MOOP) expenditures following health and disability shocks are the major sources of mean reductions in financial well-being in the near retirement-age population.

The goal of this article is to analyze the differential effects of health and disability shocks on financial well-being prior to retirement age. We focus on a

representative sample of people in their early fifties (aged 51–56 in 1992) and follow them as they approach the Social Security full retirement age (FRA). Our motivation is rooted in the interaction of two factors: (1) the dramatically increasing incidence of disability among people in their fifties and early sixties, and (2) gaps in safety nets near retirement age. In contrast to previous studies, we classify our sample into three separate groups by different patterns of disability experiences over an 8-year follow-up period. The first group consists of people who were nondisabled in 1992 and stayed nondisabled by 2000. They exhibit a relatively simple pattern of stable financial security despite labor

Selected Abbreviations

FRA	full retirement age
HRS	Health and Retirement Study
MOOP	medical out-of-pocket [expenditures]
SES	socioeconomic status
SSI	Supplemental Security Income

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Longitudinal Pattern Groups

D→D	disabled
D→ND	recovered
ND→D	newly disabled
ND→ND	nondisabled

force withdrawal. The second group—comprising people with no disabilities at the baseline who experience at least one disability shock between the baseline and the followup 8 years later—exhibits increasing economic vulnerability by income measures, but a slight reduction in the proportion of people without any health insurance. The third group—consisting of people who were already disabled at the baseline and stayed disabled 8 years later—exhibits a high degree of economic vulnerability at the baseline, has fallen further behind on income measures, but displays a substantial reduction in the proportion of people without any health insurance. The contrast between the second and third groups is attributable to the fact that public health insurance coverage is conditioned on disablement.¹

There are several distinct features of our study.

1. We follow up people at an age well before the early Social Security retirement age at the baseline (aged 51–56 in 1992) who do not reach age 65 at the followup (at the year-2000 wave). Thus, we focus on a segment of the life cycle when the risk of disablement dramatically rises, yet people are subject to much weaker safety nets than would be available past age 65. At age 65 Supplemental Security Income (SSI), Medicaid, and Medicare become available without a tight disability screen and without any waiting period (relevant for Medicare). Under Social Security, age 65 is the applicable FRA for the oldest members of our 1936–1941 birth cohorts (those born in 1936 or 1937). For people born in 1938–1941, the FRA increases by 2 months per year and reaches 65 years and 8 months for the 1941 birth cohort.
2. We compare people who experienced a disability shock with two, rather than one, comparison groups. Nondisabled individuals who did not experience a disability shock are commonly used as a counterfactual group, but in this study, we also include a second comparison group of people who were disabled at the baseline and stayed disabled over the observation period. Chronically disabled people comprise

a somewhat neglected group in longitudinal studies because the focus in those analyses is often on the effect of disability shocks, which needs a comparison group consisting of nondisabled people who did not experience a disability shock. However, the group of people who started as disabled and remained disabled provides a useful comparison basis consisting of individuals who experienced chronic disablement, in some cases going back to youth or even childhood.

3. We use a complex array of outcome measures including poverty status, various household income measures, several measures of wealth, household liabilities, public and private health insurance coverage, and reported MOOP expenditures.
4. We construct our measure of “disability shock” by combining three separate survey measures of disability—instead of one of them commonly used in the literature—to indicate whether a person experienced a disability shock.

In sum, we focus on three major groups of people defined by their disability experiences over time and describe what changes occur between 1992 and 2000 in their financial well-being. The three groups differ in their baseline characteristics. We think that describing the experience of these groups of people is of substantial policy interest in its own right. Adjusting for differences in characteristics would also be a worthwhile exercise, but at the expense of shifting the focus from assessing the real-life experiences of actual groups of people to variables explaining those differences. In this article, we do make some descriptive subgroup comparisons, but defer causal analyses for future studies. In the following section, we discuss the data and methodology used in this analysis. The next section presents the empirical results, and then we conclude.

Data and Methodology

The data for this study come from the Health and Retirement Study (HRS), a longitudinal, nationally representative survey of Americans over the age of 50 and their spouses of any age. The sample for this analysis is comprised of respondents aged 51–56 at the first wave of interviews conducted in 1992. We follow up those working-aged adults until 2000 (8 years later) when they are aged 59–64, just before they reach the Social Security FRA. We focus on this segment of the life cycle when the risk of disablement dramatically rises, yet people are subject to much weaker safety nets than would be available to them past age 65. At age 65, SSI, Medicaid, and Medicare become available

without any disability screen and without any waiting period (relevant for Medicare). Most of our analysis is based on comparisons between the 1992 and 2000 waves of the HRS. Nevertheless, we also conduct supplementary analyses using more detailed information from the 1994, 1996, and 1998 waves. The analysis is limited to a subsample of the 1992 cross section of people who survived until the 2000 interview. Thus, an important caveat is that people who died in the interim are excluded from the analysis. The excluded members of the 1992 sample are likely to have relatively low socioeconomic status (SES) at the baseline; be disproportionately disabled at the baseline; experience a disability shock prior to death; be eligible for Disability Insurance (DI), SSI, Medicaid, or Medicare prior to death; and perhaps to experience financial distress sometime between disability onset and death. (These estimates are not shown, but are available upon request from the authors.) The financial well-being of working-age people who die prior to reaching the FRA under Social Security is of obvious interest in its own right and would be a fruitful subject for future study.

We use a combination of three HRS variables to identify the disability status and a disability shock. Those variables include a doctor-diagnosed major health condition as defined by Smith (1999), self-reported work-limiting health condition, and self-reported health status as “poor” or “fair.” More specifically, in this analysis a respondent is defined as being disabled if at least one of the three conditions is satisfied: the respondent reported a doctor-diagnosed major health condition, self-reported having a work-limiting health condition, or self-reported being in poor or fair health. Thus, our definition of disability status is a broader definition than the Social Security Administration’s (SSA’s) programmatic definition of categorical disability. We use all three variables to identify disability status because they represent different aspects of disablement with different strengths and weaknesses. Of the three measures, having a doctor-diagnosed major health condition is the most objective one.² However, it is less helpful for identifying disabilities among people without access to health insurance coverage, and in some cases, it reflects a curable health condition that does not lead to disablement. Self-reported work-limiting disabilities are relevant in that they are directly related to the capacity to work, but have been often criticized as being subject to reporting bias based on labor force status. Self-reported poor or fair health is admittedly subjective, but it is based on the interview subject’s knowledge of his or her own

health limitations and has substantial long-term predictive strength (Rupp and Davies 2004). This is the only measure that is truly meaningful for people who have limited access to health care and have been out of the labor force for most of their lives, often because of severe disablement.

We distinguish three groups of people: (1) those who were not disabled both at the baseline and followup (ND→ND); (2) those who were nondisabled at the baseline, but were disabled at the followup (ND→D); and (3) those who were disabled both at the baseline and the followup (D→D). The ND→ND group is defined as nondisabled on all three measures at both the baseline and followup. That is a strong counterfactual compared with alternative definitions based on a single measure. The ND→D group is defined by a transition from nondisabled status on all three measures at the baseline to disabled status on at least one of the three measures at the followup. In this article, we refer to this transition from a nondisabled to a disabled status as a disability shock. The D→D group is defined based on the presence of a disability in at least one of the three indicators (not necessarily the same indicator) both at the baseline and at the followup. Thus, the D→D group includes not only people who were severely disabled at the baseline, but also others with self-reported disabilities that may have been less severe. Therefore, this group is broader in scope than the group of disability beneficiaries that satisfies SSA’s stringent categorically disabled definition. For simplicity, in the rest of this article we will refer to the three groups as “nondisabled” (ND→ND), “newly disabled” (ND→D), and “disabled” (D→D).

In some of the analysis, we also use a measure based on how many of the three disability status variables are met. Meeting a single variable forms the weakest disability indicator, and meeting all three conditions forms the strongest indication of a disability. The bulk of the analysis uses a simplification of defining membership in one of the three groups exclusively based on status in the beginning of our study period (1992) and the end (2000). That approach misses some nuances arising from transitions that may involve the 1994, 1996, and 1998 waves of the HRS. Thus, we also use all five waves in auxiliary analyses (and even those might miss some details because of possible unobserved transitions between the five waves). In addition, we also conduct a supplementary analysis by type of disability measure for respondents reporting a single disability defined by only one of our three disability indicator measures. Finally, most of our analysis ignores the important pattern of the “recovered” group

(D→ND) because of the small sample size, but we do report some key results for this group as well within the limits allowed by the sample size.

Measures of financial well-being include poverty status, household income, various indicators of household wealth, household liabilities, private and public health insurance coverage, and MOOP expenditures. We also derive variables to characterize important aspects of financial well-being. First we create a household annuitized nonhousing wealth variable based on a simple 4 percent withdrawal rule.³ That allows comparisons of household wealth and household income (with or without MOOP expenditures on an equal footing). Then we create a wealth-adjusted income indicator, which adds annuitized nonhousing wealth to our income measure, designed to identify three broad categories of people by overall financial well-being. The three mutually exclusive groups include people who are potentially eligible for SSI disability, others with low wealth-adjusted income, and a residual group of people with high wealth-adjusted income.⁴ As previously noted, all of our analysis is descriptive; no causal interpretation

is intended. Categorical variables are characterized by percent distributions and numeric variables by means, medians, percentiles, and percent measures. Estimated standard errors account for complex survey design.

Results

Sample characteristics by longitudinal patterns of disability are provided in Table 1. Nondisabled people (ND→ND) generally exhibit characteristics that are associated with favorable indicators of financial well-being. Only 5 percent are poor, about half have at least some college education, and about half are in the middle or upper tercile by income and household wealth. Over 80 percent are married, and a similar proportion of nondisabled people are non-Hispanic white. In contrast, disabled people (D→D) are generally the most disadvantaged, with a poverty rate around 19 percent and pluralities in the lowest income and asset levels; about 30 percent of them are high school dropouts. Newly disabled people (ND→D) are generally in-between those who are nondisabled and those who are disabled and are clearly worse off than

Table 1.
Sample characteristics at the 1992 baseline, by longitudinal pattern of disability

Characteristic	Longitudinal pattern groups ^a			Total
	ND→ND	ND→D	D→D	
Median age (years)	53	54	54	54
Female (%)	53.6	49.3	55.2	53.2
Race/ethnicity (% distribution)				
Non-Hispanic white	85.3	81.4	76.2	81.7
Non-Hispanic black	7.3	9.6	13.4	9.7
Non-Hispanic other	2.4	1.7	1.8	2.1
Hispanic	5.0	7.3	8.5	6.5
Marital status (% distribution)				
Married	82.1	77.7	71.8	78.0
Widowed/separated/divorced	14.5	18.3	24.7	18.4
Single	3.4	4.0	3.5	3.6
Education (% distribution)				
High school dropout	13.2	20.9	31.6	20.5
High school graduate	36.9	37.9	40.1	37.1
Some college	22.4	21.7	17.4	20.7
College graduate or more	27.4	19.5	10.9	20.7
Total household income (mean, 1992 \$)	65,300	52,184	39,020	54,517
	(3,147)	(2,471)	(1,722)	(2,041)
Total household income^b (% distribution)				
Lowest third	18.6	25.8	41.7	27.2
Middle third	32.6	34.6	33.1	33.1
Highest third	48.9	39.6	25.2	39.7
Poverty rate^c (%)	5.1	7.4	18.9	9.8

Continued

Table 1.
Sample characteristics at the 1992 baseline, by longitudinal pattern of disability—Continued

Characteristic	Longitudinal pattern groups ^a			Total
	ND→ND	ND→D	D→D	
Total net household wealth^d (mean, 1992 \$)	314,550 (21,849)	184,786 (12,395)	152,277 (12,660)	237,461 (11,164)
Household net nonhousing wealth^e (mean, 1992 \$)	229,651 (19,116)	123,990 (11,914)	103,359 (10,561)	168,649 (9,856)
Household net housing wealth (mean, 1992 \$)	84,899 (4,057)	60,796 (6,882)	48,918 (5,324)	68,812 (3,838)
Total net household wealth (% distribution)				
Lowest third	17.8	29.2	43.2	27.0
Middle third	35.0	35.5	31.8	34.1
Highest third	47.2	35.2	24.0	37.9
Wealth-adjusted income indicator^f (% distribution)				
Potentially eligible for SSI disability	13.1	19.7	27.9	19.0
Others with low income/annuitized wealth	30.8	35.6	42.8	35.5
Others with high income/annuitized wealth	56.1	44.6	29.3	45.5
Number of observations	1,766	833	1,221	3,820

SOURCE: Data are from the Health and Retirement Study.

NOTES: The sample consists of individuals aged 51–56 at the baseline in 1992 (wave 1) and aged 59–64 at the followup in 2000 (wave 5). Monetary values are in 1992 dollars. Household income is expressed in per annum terms. Reported figures are weighted using survey sampling weights. Standard error estimates (in parentheses) are derived using Taylor linearization to account for complex sample design. Percent values may not sum to 100 because of rounding.

- a. Disability status in the 1992 and 2000 waves is defined based on three indicators: (1) respondent reported doctor-diagnosed major condition (heart disease, cancer, stroke, and lung disease); (2) respondent self-reported poor or fair health; and (3) respondent self-reported work-limiting condition. People satisfying any one of these three conditions are classified as disabled at the given wave (in 1992 or in 2000). The groupings are based on the combination of disabled or nondisabled status at the two observation waves. Thus, the ND→ND group is comprised of respondents who were nondisabled at the baseline (in 1992) and at the followup (in 2000); the ND→D group is comprised of respondents who were nondisabled at the baseline, but disabled at the followup; and the D→D group is comprised of respondents who were disabled both at the baseline and followup. Persons who died between the two waves (392 observations) are excluded from the sample. Persons falling into the recovery D→ND pattern (227 observations) are also excluded from the sample because of small sample size.
- b. Household income is the sum of incomes from different sources, including wage and salary earnings, bonuses, overtime pay, commissions, and tips; household capital income; income from employer pensions or annuities; disability benefits covered under Social Security; Supplemental Security Income; Social Security retirement benefits (own, spouse, or widow(er)); other public benefits; income from unemployment and workers' compensation; income from other government transfers (veterans' benefits, welfare, and food stamps); and other household income. Incomes from both spouses apply to married households.
- c. In determining poverty status, we follow the procedure described in the RAND-HRS documentation (version G) to the extent feasible. Status as poor is determined using poverty threshold levels from the Census Bureau. Using the RAND-HRS data file, family composition is determined by the number of people living in the household. We are unable to identify the number of family members younger than age 18 and to precisely identify the number of household members unrelated to the respondent or spouse, and therefore our poverty measure is somewhat imprecise.
- d. Net household wealth includes the net value of housing, financial wealth, business(es) and vehicle(s). It also includes individual retirement account (IRA) balances.
- e. Household net nonhousing wealth is the total net household wealth minus the net value of housing.
- f. Of the total sample, we first define the subgroup that is potentially eligible for SSI disability. This subgroup is defined based on assets and income limits used under the SSI means test, except that in establishing countable income, the earned income of the respondent is capped at the substantial gainful activity (SGA) level. The SGA screen is used in determining categorical eligibility as disabled. This indicator is derived separately for couples and single people and is wave specific; that is, the program limits are in nominal terms for each wave year. The remaining part of the sample that is not potentially eligible for SSI disability is divided into two subgroups based on the sum of their annual household income and annuitized nonhousing wealth. Annuitized nonhousing wealth is calculated using a 4 percent withdrawal rule and implicitly assumes liquidity. The annuitized wealth is then added to annual household income. Using this combined measure, we derive the second and third subgroups as those whose wealth-adjusted income is below the median and those whose wealth-adjusted income is above the median, respectively.

those who stay nondisabled with respect to some of their socioeconomic characteristics. This is consistent with the fact that they have baseline socioeconomic characteristics associated with less favorable outcomes regardless of the disability shock they have yet to experience.

Overall Outcomes by Longitudinal Pattern of Disability

Information on poverty status and household income is provided in Table 2. Compared with the other two groups, the nondisabled (ND→ND) group showed the smallest change, with its poverty rate almost unchanged (0.2 percentage points), and some decline in household income at the median (-11 percent), but an increase at the mean (6 percent), suggesting relatively favorable outcomes at the higher end of the income distribution. The second column shows that the newly disabled (ND→D) group experienced a substantial increase in poverty rate (76 percent) and a sharp decline in median household income (-25 percent), although a much smaller decline at the mean, most likely affected by those individuals at the higher end of the income distribution. The disabled (D→D) group experienced about the same decline in median and mean income as the group that became newly disabled, but with a much smaller increase in poverty in relative terms.

Table 3 shows how various components of household income contribute to the financial well-being, separately for each of the three groups, at the baseline and followup, and it highlights their changes. The sources include own earnings; public benefits; own pensions; and other sources, which are largely spousal earnings.⁵ One of the main conclusions from this table is that, on average, own earnings substantially decreased for all three groups. Butrica, Toder, and Toohey (2008) highlight the potentially powerful role of delaying retirement (that is, labor force withdrawal) on financial security. However, the causes and consequences of early labor force withdrawal are profoundly different by disability status. Most importantly, delaying retirement is less of an option for those who experience a disability shock (the ND→D group). For the nondisabled (ND→ND) group, labor force withdrawal is obviously unrelated to major adverse health or disability shocks. For that group, “other sources” almost completely replace loss of own earnings. Thus, it is not surprising that despite the low rate at which

own pensions and public benefits replace the average lost earnings (44 percent; authors’ calculation), mean household income increases for this group mainly because of the increase in other sources of income.

Disability shocks are associated with a greater decline in average earnings. The rate of replacement of lost own earnings by own public benefits and private pensions is somewhat lower for the newly disabled (ND→D) group (41 percent; authors’ calculation) than for the nondisabled (ND→ND) group. The main reason for declining average household income for the former group is that the increase in other sources of income replaces a much lower share of lost earnings compared with the nondisabled group. Note that private pensions are more important than public benefits in buffering the effects of income loss associated with disability shocks in our sample. Previous studies have amply demonstrated the secular decline in overall defined benefit pension coverage in the last two decades and the increasing prevalence and importance of defined contribution (DC) plans.⁶ Although this shift may lead to changes in the role of public and private pension income for future cohorts, it is less likely to have had a substantial impact for the cohort in our sample because DC plans were less prevalent for this cohort.⁷ Finally, for the disabled (D→D) group, the most salient fact is that the increase in other sources of income when compared with the decrease in own earnings plays a relatively smaller role than for the other two groups (17 percent versus 96 percent for the ND→ND group and 34 percent for the ND→D group; authors’ calculations). Appendix Table A-1 provides more distributional detail. It shows that the percentage of respondents with own earnings declined, while the percentage with public benefits and pensions combined increased between the baseline and followup across the board. Detailed distributional statistics on changes in income from various sources show more complex patterns.

Table 4 shows that marital status (measured at the baseline) is indeed an important factor affecting poverty outcomes associated with disablement.⁸ The poverty rate among the nondisabled (ND→ND) group, compared with the other two groups, is relatively lower at both the baseline and followup, and there is little percentage point change in poverty rates between the baseline and followup. While the rate of poverty for people in the nonmarried category actually

Table 2.
Poverty status and household income in 1992 and 2000, by longitudinal pattern of disability

Variable statistic at the 1992 baseline and 2000 followup and the change between 1992 and 2000	Longitudinal pattern groups ^a			Total
	ND→ND	ND→D	D→D	
Percent poor ^b				
At baseline	5.1 (0.6)	7.5 (0.8)	18.9 (1.4)	9.8 (0.7)
At followup	5.3 (0.6)	13.2 (1.3)	23.6 (1.5)	12.6 (0.9)
Change (percentage point)	0.2 (0.8)	5.7 (0.9)	4.7 (1.2)	2.8 (0.6)
Change (%)	3.9	76.0	24.9	28.6
Median household income ^c				
At baseline (\$)	50,240	42,000	29,400	42,237
At followup (\$)	44,647	31,486	23,001	35,154
Change (\$)	-5,593	-10,514	-6,399	-7,083
Change (%)	-11.1	-25.0	-21.8	-16.8
Mean total household income				
At baseline (\$)	65,300 (3,147)	52,184 (2,471)	39,020 (1,722)	54,517 (2,041)
At followup (\$)	68,944 (5,005)	48,360 (4,701)	36,593 (2,389)	54,714 (3,084)
Change (\$)	3,644 (4,342)	-3,824 (3,915)	-2,428 (1,623)	197 (2,353)
Change (%)	5.6	-7.3	-6.2	0.4
Number of observations	1,766	833	1,221	3,820

SOURCE: Data are from the Health and Retirement Study.

NOTES: The sample consists of individuals aged 51–56 at the baseline in 1992 (wave 1) and aged 59–64 at the followup in 2000 (wave 5). Monetary values are in 1992 dollars. Household income is expressed in per annum terms. Reported figures are weighted using survey sampling weights. Standard error estimates (in parentheses) are derived using Taylor linearization to account for complex sample design.

- Disability status in the 1992 and 2000 waves is defined based on three indicators: (1) respondent reported doctor-diagnosed major condition (heart disease, cancer, stroke, and lung disease); (2) respondent self-reported poor or fair health; and (3) respondent self-reported work-limiting condition. People satisfying any one of these three conditions are classified as disabled at the given wave (in 1992 or in 2000). The groupings are based on the combination of disabled or nondisabled status at the two observation waves. Thus, the ND→ND group is comprised of respondents who were nondisabled at the baseline (in 1992) and at the followup (in 2000); the ND→D group is comprised of respondents who were nondisabled at the baseline, but disabled at the followup; and the D→D group is comprised of respondents who were disabled both at the baseline and followup.
- In determining poverty status, we follow the procedure described in the RAND-HRS documentation (version G) to the extent feasible. Status as poor is determined using poverty threshold levels from the Census Bureau. Using the RAND-HRS data file, family composition is determined by the number of people living in the household. We are unable to identify the number of family members younger than age 18 and to precisely identify the number of household members who were not related to the respondent or spouse, and therefore our poverty measure is somewhat imprecise.
- Household income is the sum of incomes from different sources, including wage and salary earnings, bonuses, overtime pay, commissions, and tips; household capital income; income from employer pensions or annuities; disability benefits covered under Social Security; Supplemental Security Income; Social Security retirement benefits (own, spouse, or widow(er)); other public benefits; income from unemployment and workers' compensation; income from other government transfers (veterans' benefits, welfare, and food stamps); and other household income. Incomes from both spouses apply to married households.

Table 3.
Household income ^a from various sources, by longitudinal pattern of disability

Longitudinal pattern group ^b and income source ^c	Overall mean value (\$)		Difference between 1992 and 2000 (\$)	Percent distribution		Percentage point difference between 1992 and 2000	Number of observations
	1992	2000		1992	2000		
ND→ND							1,766
Own earnings	30,393	21,164	-9,229	47	31	-16	
Own public benefits	411	1,582	1,171	1	2	2	
Own pensions	504	3,382	2,878	1	5	4	
Other sources	33,992	42,816	8,824	52	62	10	
Total	65,300	68,944	3,644	100	100	...	
ND→D							833
Own earnings	25,543	11,930	-13,613	49	25	-24	
Own public benefits	390	2,399	2,009	1	5	4	
Own pensions	573	4,148	3,575	1	9	8	
Other sources	25,677	30,296	4,619	49	63	13	
Total	52,184	48,360	-3,824	100	100	...	
D→D							1,221
Own earnings	15,763	8,805	-6,958	40	24	-16	
Own public benefits	1,520	3,197	1,677	4	9	5	
Own pensions	761	2,436	1,675	2	7	5	
Other sources	20,976	22,155	1,179	54	61	7	
Total	39,020	36,593	-2,427	100	100	...	

SOURCE: Data are from the Health and Retirement Study.

NOTES: The sample consists of individuals aged 51–56 at the baseline in 1992 (wave 1) and aged 59–64 at the followup in 2000 (wave 5). Monetary values are in 1992 dollars. The mean values are unconditional on having income from that source and are expressed in per annum terms. Percent values may not sum to 100 because of rounding. Reported figures are weighted using survey sampling weights. Estimated standard errors are available upon request from the authors.

... = not applicable.

- Household income is the sum of incomes from different sources, including wage and salary earnings, bonuses, overtime pay, commissions, and tips; household capital income; income from employer pensions or annuities; disability benefits covered under Social Security; Supplemental Security Income; Social Security retirement benefits (own, spouse, or widow(er)); other public benefits; income from unemployment and workers' compensation; income from other government transfers (veterans' benefits, welfare, and food stamps); and other household income. Incomes from both spouses apply to married households.
- Disability status in the 1992 and 2000 waves is defined based on three indicators: (1) respondent reported doctor-diagnosed major condition (heart disease, cancer, stroke, and lung disease); (2) respondent self-reported poor or fair health; and (3) respondent self-reported work-limiting condition. People satisfying any one of these three conditions are classified as disabled at the given wave (in 1992 or in 2000). The groupings are based on the combination of disabled or nondisabled status at the two observation waves. Thus, the ND→ND group is comprised of respondents who were nondisabled at the baseline (in 1992) and at the followup (in 2000); the ND→D group is comprised of respondents who were nondisabled at the baseline, but disabled at the followup; and the D→D group is comprised of respondents who were disabled both at the baseline and followup.
- "Own earnings" is the sum of the respondent's wage and salary income, bonuses and overtime pay, commissions, and tips. "Own public benefits" is the sum of the respondent's income from disability benefits covered under Social Security and SSI, and income from Social Security retirement, spouse, and widow(er) benefits. "Own pensions" is the sum of the respondent's income from all pensions and annuities. "Other sources" of income is the total household income minus the sum of the respondent's own earnings, public benefits, and pensions, as described above. Thus, it includes the spouse's earnings, public benefits, and pensions, as well as household capital income; income from unemployment, workers' compensation, and government transfers for both spouses; and other household sources of income (such as alimony, lump sums from insurance, pensions, and inheritances).

Table 4.
Poverty rates in 1992 and 2000, by marital status at the 1992 baseline and longitudinal pattern of disability

Variable statistic at the 1992 baseline and 2000 followup and the change between 1992 and 2000	Married at the baseline: Longitudinal pattern groups ^a			Not married at the baseline: Longitudinal pattern groups ^a			Total
	ND→ND	ND→D	D→D	ND→ND	ND→D	D→D	
Percent poor ^b							
At baseline	3.4 (0.6)	5.1 (1.0)	12.6 (2.0)	13.0 (2.0)	15.5 (3.0)	34.8 (3.0)	9.8 (0.7)
At followup	4.1 (0.6)	9.6 (1.0)	15.0 (2.0)	11.0 (2.0)	25.5 (3.0)	45.4 (3.0)	12.6 (0.8)
Change (percentage point)	0.7 (0.7)	4.5 (1.0)	2.4 (1.4)	-2.0 (2.4)	10.0 (2.9)	10.6 (3.2)	2.8 (0.6)
Change (%)	20.6	88.2	19.0	-15.4	64.5	30.5	28.6
Number of observations	1,452	649	870	314	184	351	3,820

SOURCE: Data are from the Health and Retirement Study.

NOTES: The sample consists of individuals aged 51–56 at the baseline in 1992 (wave 1) and aged 59–64 at the followup in 2000 (wave 5). Reported figures are weighted using survey sampling weights. Standard error estimates (in parentheses) are derived using Taylor linearization to account for complex sample design.

- a. Disability status in the 1992 and 2000 waves is defined based on three indicators: (1) respondent reported doctor-diagnosed major condition (heart disease, cancer, stroke, and lung disease); (2) respondent self-reported poor or fair health; and (3) respondent self-reported work-limiting condition. People satisfying any one of these three conditions are classified as disabled at the given wave (in 1992 or in 2000). The groupings are based on the combination of disabled or nondisabled status at the two observation waves. Thus, the ND→ND group is comprised of respondents who were nondisabled at the baseline (in 1992) and at the followup (in 2000); the ND→D group is comprised of respondents who were nondisabled at the baseline, but disabled at the followup; and the D→D group is comprised of respondents who were disabled both at the baseline and followup.
- b. In determining poverty status, we follow the procedure described in the RAND-HRS documentation (version G) to the extent feasible. Status as poor is determined using poverty threshold levels from the Census Bureau. Using the RAND-HRS data file, family composition is determined by the number of people living in the household. We are unable to identify the number of family members younger than age 18 and to precisely identify the number of household members who were not related to the respondent or spouse, and therefore our poverty measure is somewhat imprecise.

decreases at the followup, those in that category continue to experience much higher poverty rates than their married peers.

For both newly disabled people and those who start and stay disabled, the differences in poverty rate by marital status are large at the baseline. While the poverty rate increases for both married and nonmarried respondents, the percentage point increase is much larger for those in the nonmarried group than for their married peers. The poverty rate increase for the people in the nonmarried category relative to those who are married is 5.5 percentage points higher among the newly disabled (ND→D) group and 8.2 percentage points higher for those in the disabled (D→D) group (authors' calculations). Being married clearly provides an important buffer against impoverishment associated with a disability shock or continued disability. Importantly, nonmarried people already disabled at the baseline are not only the most likely to be poor

both at the baseline and followup, but their poverty rate increases from essentially one-third to almost half between the baseline and followup. Thus, the combination of being single and having a continued disability is associated with substantial economic vulnerability.

Table 5 shows indicators of net household wealth and liabilities. Baseline differences in wealth measures among the three groups are substantial, in the expected direction: Both the percent with any positive amount from a given source and mean/median 1992 levels are highest among nondisabled people and lowest among those who start and stay disabled. Between 1992 and 2000 there were increases in all measures of wealth for all three disability status groups, but the magnitudes of change substantially differed by wealth measure and group; the medians clearly suggest a negative effect of disability shocks.⁹ To give some perspective on these findings, we make two observations.

First, this was a period of substantial rise in the stock market (the S&P 500 index increased by 258 percent), low inflation (23 percent increase), and appreciation in the housing market (37 percent increase in Case-Schiller index) that outpaced inflation.¹⁰ Second, household annuitized nonhousing wealth (Table 5) is small compared with household income (Table 2) for all three groups.

Median net household financial wealth (Table 5) at the baseline ranged from a high of \$15,000 for nondisabled respondents to a low of \$2,000 for those already disabled. The percent increase between the baseline and followup showed a similar pattern for the three groups; it stayed essentially flat for those already disabled at the baseline.¹¹ Because median net household financial wealth was only 17 percent of median household annual

Table 5.
Net household wealth and liabilities, by longitudinal pattern of disability

Variable statistic at the 1992 baseline and change between 1992 and 2000	Longitudinal pattern groups ^a			Total
	ND→ND	ND→D	D→D	
Total net household wealth ^b				
Presence of positive amount at baseline (%)	97.7	93.9	87.3	93.7
Percentage point change	0.0	0.7	0.6	0.4
Median at baseline (\$)	141,500	97,000	61,000	105,900
Change (\$)	57,517	15,185	13,520	22,890
Change (%)	40.6	15.7	22.2	21.6
Mean at baseline ^c (\$)	314,550	184,786	152,277	237,461
	(21,849)	(12,395)	(12,660)	(11,164)
Change (\$)	187,033	92,160	48,708	124,710
	(68,409)	(27,439)	(16,545)	(33,442)
Change (%)	59.5	49.9	32.0	52.5
Household net nonhousing wealth ^d				
Presence of positive amount at baseline (%)	95.7	92.0	83.5	91.2
Percentage point change	-0.2	-2.0	-0.2	-0.6
Median at baseline (\$)	64,100	40,200	17,400	43,158
Change (\$)	41,200	9,210	4,470	15,162
Change (%)	64.3	22.9	25.7	35.1
Mean at baseline ^c (\$)	229,651	123,990	103,359	168,649
	(19,116)	(11,914)	(10,561)	(9,856)
Change (\$)	142,406	82,311	38,612	98,031
	(50,568)	(24,143)	(14,113)	(25,041)
Change (%)	62.0	66.4	37.4	58.1
Household net financial wealth ^e				
Presence of positive amount at baseline (%)	81.4	74.3	62.6	74.2
Percentage point change	2.0	1.7	4.4	2.2
Median at baseline (\$)	15,000	7,000	2,000	8,500
Change (\$)	6,060	1,910	25	2,192
Change (%)	40.4	27.3	1.3	25.8
Mean at baseline ^c (\$)	68,518	34,774	33,372	50,607
	(6,464)	(4,284)	(4,244)	(3,537)
Change (\$)	72,750	52,340	17,480	51,617
	(23,172)	(15,692)	(5,915)	(13,449)
Change (%)	106.2	150.5	52.4	102.0
Household annuitized nonhousing wealth				
Mean at baseline ^c (\$)	9,186	4,960	4,134	6,746
	(765)	(477)	(422)	(394)
Change (\$)	5,696	3,292	1,544	3,921
	(2,023)	(966)	(565)	(1,002)
Change (%)	62.0	66.4	37.3	58.1

Continued

Table 5.
Net household wealth and liabilities, by longitudinal pattern of disability—Continued

Variable statistic at the 1992 baseline and change between 1992 and 2000	Longitudinal pattern groups ^a			Total
	ND→ND	ND→D	D→D	
Household liabilities				
Presence of any liability at baseline (%)	74.4	71.4	66.9	71.5
Percentage point change	-11.9	-10.7	-9.7	-11.0
Median at baseline (\$)	15,000	10,400	5,000	10,400
Change (\$)	-8,520	-6,350	-3,785	-6,350
Change (%)	-56.8	-61.1	-75.7	-61.1
Number of observations	1,766	833	1,221	3,820

SOURCE: Data are from the Health and Retirement Study.

NOTES: The sample consists of individuals aged 51–56 at the baseline in 1992 (wave 1) and aged 59–64 at the followup in 2000 (wave 5). Monetary values are in 1992 dollars. Reported figures are weighted using survey sampling weights. Selected standard error estimates (in parentheses) are derived using Taylor linearization to account for complex sample design.

- Disability status in the 1992 and 2000 waves is defined based on three indicators: (1) respondent reported doctor-diagnosed major condition (heart disease, cancer, stroke, and lung disease); (2) respondent self-reported poor or fair health; and (3) respondent self-reported work-limiting condition. People satisfying any one of these three conditions are classified as disabled at the given wave (in 1992 or in 2000). The groupings are based on the combination of disabled or nondisabled status at the two observation waves. Thus, the ND→ND group is comprised of respondents who were nondisabled at the baseline (in 1992) and at the followup (in 2000); the ND→D group is comprised of respondents who were nondisabled at the baseline, but disabled at the followup; and the D→D group is comprised of respondents who were disabled both at the baseline and followup.
- Net household wealth includes the net value of housing, financial wealth, business(es), and vehicle(s). It also includes individual retirement account (IRA) balances.
- The mean values are estimated for all respondents in each group whether the variable value is zero or positive.
- Household net nonhousing wealth is the total net household wealth minus the net value of housing.
- Financial wealth includes money held in checking and savings bank accounts, stocks, bonds, T-bills, mutual funds, and other savings net of debt. It does not include IRAs or the net value of business(es).

income at the baseline for the newly disabled (ND→D) group and only 7 percent for the already disabled at the baseline (the D→D group) (authors' calculations using figures in Tables 2 and 5), financial wealth hardly provided any cushion against the income loss associated with a disability shock among respondents newly disabled; and, there was a continued high rate of poverty among those already disabled.

The percent with household liabilities was slightly higher for the nondisabled (ND→ND) group than for the other two groups, but the median of household liabilities was only roughly 10 percent of the median net household wealth for both the nondisabled and the newly disabled (ND→D) groups, and even less so for the disabled (D→D) group. Respondents who stayed disabled had the lowest level of median household liabilities at the baseline. While median household liabilities substantially declined for all three groups, overall, liabilities do not seem to have played a major role in differences in financial well-being among the three longitudinal pattern groups.

Next, we turn to health insurance coverage and MOOP expenditures (Table 6). These are important aspects of financial well-being in the context of disablement because disabilities tend to be associated with high medical expenditures. During the period under study, there was no mechanism of universal access to health insurance among the working-age population in the United States, and access to affordable private insurance among people with preexisting conditions has been limited. Overall, the percent of our sample universe with health insurance coverage at the baseline was lowest among people who were disabled (D→D) and highest among those who were nondisabled (ND→ND). However, that pattern reversed between the baseline and followup because of the increase in public health insurance coverage among the two groups of people with disability experience. Still, given the fact that disabled respondents may be in greater need for health insurance protection, at our followup, over 15 percent of respondents in both disability groups were without any health insurance coverage.

These overall patterns reflect opposite dynamics with respect to private and public health insurance coverage. At the baseline, access to private health insurance was the highest among nondisabled (ND→ND) respondents, and it changed very little. In contrast, access to public health insurance was the lowest for respondents in that group, and increased only slightly. Thus, it is not surprising that the nondisabled group experienced little overall change in health insurance coverage.

Regarding access to private health insurance, there is no statistically significant difference at the baseline between the nondisabled (ND→ND) group and the newly disabled (ND→D) group, but private coverage is significantly lower among the continuously disabled

(D→D) group. Over the period, the two groups with disability involvement (ND→D and D→D) experienced a greater decline in private coverage than did the nondisabled (ND→ND) group. This is not surprising given the fact that the private insurance market over the observed period (1992 to 2000) did not address the needs of people with increasing medical needs and decreasing earnings potential associated with disabilities. More specifically, it was possible for private health insurance companies during that time to deny coverage to high utilizers or people with preexisting conditions, whereas employer-provided insurance often was not available to part-time workers, and COBRA coverage for those who lost their jobs was relatively expensive. In contrast, public health insurance—primarily

Table 6.
Health insurance coverage and MOOP expenditures, by longitudinal pattern of disability

Variable statistic at the 1992 baseline and 2000 followup and the change between 1992 and 2000	Longitudinal pattern groups ^a			Total
	ND→ND	ND→D	D→D	
With health insurance from any source^b (%)				
At baseline	82.9	81.1	77.4	80.9
	(1.1)	(1.7)	(1.2)	(0.8)
At followup	82.5	84.0	84.7	83.5
	(1.0)	(1.7)	(1.3)	(0.8)
Change (percentage point)	-0.5	2.9	7.3	2.6
	(1.0)	(1.9)	(1.6)	(0.9)
Change (%)	-0.6	3.6	9.4	3.2
With private health insurance (%)				
At baseline	81.3	79.0	62.9	75.3
	(1.1)	(1.7)	(1.5)	(1.0)
At followup	80.5	72.1	57.7	71.8
	(1.0)	(1.9)	(1.6)	(1.0)
Change (percentage point)	-0.8	-6.9	-5.2	-3.5
	(1.2)	(1.7)	(1.5)	(0.9)
Change (%)	-1.0	-8.7	-8.3	-4.6
With public health insurance (%)				
At baseline	4.4	5.4	20.0	9.4
	(0.9)	(0.9)	(1.2)	(0.7)
At followup	5.2	18.5	36.7	17.6
	(0.8)	(1.6)	(1.7)	(0.9)
Change (percentage point)	0.7	13.1	16.7	8.2
	(0.5)	(1.4)	(1.2)	(0.6)
Change (%)	16.4	242.6	83.5	87.2
With MOOP expenditures (%)				
At baseline	83.7	83.5	82.6	83.3
	(0.8)	(1.4)	(1.0)	(0.6)
At followup	90.4	89.6	85.3	88.7
	(1.0)	(1.3)	(1.0)	(0.7)
Change (percentage point)	6.7	6.0	2.7	5.4
	(1.3)	(2.2)	(1.3)	(0.8)

Continued

Table 6.
Health insurance coverage and MOOP expenditures, by longitudinal pattern of disability—Continued

Variable statistic at the 1992 baseline and 2000 followup and the change between 1992 and 2000	Longitudinal pattern groups ^a			Total
	ND→ND	ND→D	D→D	
MOOP expenditures (\$)				
Mean at baseline ^c	528 (40)	729 (84)	807 (63)	656 (29)
Mean at followup ^c	568 (31)	976 (66)	978 (47)	780 (29)
Median at baseline	207	224	248	220
Median at followup	258	446	458	356
90th percentile at baseline	1,246	1,573	1,739	1,405
90th percentile at followup	1,354	2,414	2,462	1,863
Number of observations	1,766	833	1,221	3,820

SOURCE: Data are from the Health and Retirement Study.

NOTES: The sample consists of individuals aged 51–56 at the baseline in 1992 (wave 1) and aged 59–64 at the followup in 2000 (wave 5). Monetary values are in 1992 dollars. Reported figures are weighted using survey sampling weights. Standard error estimates (in parentheses) are derived using Taylor linearization to account for complex sample design.

- Disability status in the 1992 and 2000 waves is defined based on three indicators: (1) respondent reported doctor-diagnosed major condition (heart disease, cancer, stroke, and lung disease); (2) respondent self-reported poor or fair health; and (3) respondent self-reported work-limiting condition. People satisfying any one of these three conditions are classified as disabled at the given wave (in 1992 or in 2000). The groupings are based on the combination of disabled or nondisabled status at the two observation waves. Thus, the ND→ND group is comprised of respondents who were nondisabled at the baseline (in 1992) and at the followup (in 2000); the ND→D group is comprised of respondents who were nondisabled at the baseline, but disabled at the followup; and the D→D group is comprised of respondents who were disabled both at the baseline and followup.
- Health insurance coverage either through private employer plans (self or spouse) or through public programs (Medicaid/Medicare).
- The mean values are estimated for all respondents in each group whether the variable value is zero or positive.

Medicaid and Medicare—increased substantially for the two groups with disability involvement, more than compensating for the loss of private health insurance on the average. This is expected, given the heavy conditioning of access to public health insurance among the working-age population in the United States on the presence of severe disabilities, largely in combination with poverty. Nevertheless, only 18.5 percent of newly disabled (ND→D) respondents and only slightly more than a third (36.7 percent) of those who were already disabled (D→D) at the baseline had public insurance coverage at the followup. The 15–16 percent of disabled people without any health insurance at the followup may reflect either limited access to private coverage among those who were severely disabled and may not have been eligible for Medicaid or Medicare for a variety of reasons¹² or others whose disabilities were not sufficiently severe to qualify for public health insurance coverage, but were still limiting in a variety of ways. The vast majority of all three groups reported

some MOOP expenditures at the baseline. We observe some increase in the proportion with any MOOP expenditures for all three groups between the baseline and follow-up period; the percentage point increase is largest for the nondisabled (ND→ND) group and lowest for the disabled (D→D) group. The mean of MOOP expenditures (including those with zero values) at the baseline and the followup is higher for the two groups with disability involvement than for the nondisabled (ND→ND) group. The differences are larger when compared with mean household income. Nevertheless, the largest percentage of MOOP expenditures relative to household income (2.7 percent at followup for those who stayed disabled) is still a small fraction (authors' calculation using figures from Tables 2 and 6). Based on the median MOOP expenditures at the followup, our qualitative conclusion is that while MOOP expenditures were clearly higher for disabled people compared with those nondisabled, those costs do not appear to have been a big issue for at least half

of the respondents (below the median) who were either already disabled or newly disabled. Nevertheless, for some people, disabilities are associated with relatively large MOOP expenditures, as the 90th percentile MOOP expenditure figures indicate, especially at the followup.

Variation of Outcomes by Pattern of Disability Indicators

In the analyses above, we focused on overall comparisons among three groups of people defined by longitudinal patterns of disability based on a measure composed of three indicators of disability. Here, our analysis of detailed patterns is motivated by a desire

to characterize the nature, intensity, and persistence of disablement in ways that are similar to the approach followed by Meyer and Mok (2006), although the operational measures we use here are different. Table 7 adds some detail on poverty outcomes for the newly disabled (ND→D) group in addition to providing data on a fourth group that has not been previously used or discussed in our analysis: the D→ND group, comprised of people who *recovered* between the baseline and followup. In order to provide a full picture, we also report the poverty outcome information for the other two groups: (1) the nondisabled (ND→ND) group, and (2) the disabled (D→D) group. Several interesting findings emerge from this analysis.

Table 7.
Poverty rates in 1992 and 2000 and their change between 1992 and 2000, by the reported nature and intensity of the disability

Detailed disability pattern ^a	Percent poor ^b		Percentage point difference	Number of observations
	1992	2000		
ND→ND	5.1	5.3	0.2	1,766
ND→D subgroup	7.5	13.2	5.7	828
One indicator of disability: ^c				
Doctor-diagnosed major health condition	1.5	4.1	2.6	255
Self-reported poor or fair health	19.5	12.4	-7.1	124
Self-reported work-limiting condition	8.2	16.8	8.6	179
Two indicators of disability ^c	9.3	17.1	7.8	180
Three indicators of disability ^c	7.2	27.4	20.2	90
D→D	18.9	23.6	4.7	1,221
D→ND	10.4	6.0	-4.4	227

SOURCE: Data are from the Health and Retirement Study.

NOTES: The sample consists of individuals aged 51–56 at the baseline in 1992 (wave 1) and aged 59–64 at the followup in 2000 (wave 5). Reported figures are weighted using survey sampling weights. Estimated standard errors are available upon request from the authors.

- Disability status in the 1992 and 2000 waves is defined based on three indicators: (1) respondent reported doctor-diagnosed major condition (heart disease, cancer, stroke, and lung disease); (2) respondent self-reported poor or fair health; and (3) respondent self-reported work-limiting condition. People satisfying any one of these three conditions are classified as disabled at the given wave (in 1992 or in 2000). The groupings are based on the combination of disabled or nondisabled status at the two observation waves. Thus, the ND→ND group is comprised of respondents who were nondisabled at the baseline (in 1992) and at the followup (in 2000); the ND→D group is comprised of respondents who were nondisabled at the baseline, but disabled at the followup; and the D→D group is comprised of respondents who were disabled both at the baseline and followup; and the D→ND group is comprised of respondents who were disabled at the baseline, but recovered by the followup.
- In determining poverty status, we follow the procedure described in the RAND-HRS documentation (version G) to the extent feasible. Status as poor is determined using poverty threshold levels from the Census Bureau. Using the RAND-HRS data file, family composition is determined by the number of people living in the household. We are unable to identify the number of family members younger than age 18 and to precisely identify the number of household members who were not related to the respondent or spouse, and therefore our poverty measure is somewhat imprecise.
- The *one indicator of disability* group is comprised of respondents who reported a disability on a single indicator alone; the *two indicators of disability* group consists of those who reported a disability on any two of the disability indicators; and the *three indicators of disability* group consists of those who reported a disability on all the three indicators.

First, we look at the “intensity” of disablement by creating three subgroups within the newly disabled (ND→D) group: a subgroup consisting of respondents who experienced a disability shock on a single indicator alone, a second subgroup of those who experienced a disability shock on any two indicators, and a third subgroup consisting of those who experienced a disability shock on all three of our indicators. Using those subgroups together with the nondisabled (ND→ND) group that in effect transitioned from a *zero* disability indicator at the baseline to a *zero* disability indicator at the followup, we have a scale of the severity of the disability shock ranging from zero to three. Consistent with the results of Meyer and Mok (2006), we find that the severity of the shock is strongly related to increased economic vulnerability as measured by the percentage point change in the proportion poor, ranging from 0.2 percentage point among those with no disability shock to 20.2 percentage points among those who experienced a disability shock on all three indicators (Table 7).

Second, we provide additional analysis by type of disability indicator. Because of sample size constraints, we analyze this level of detail only for those people who experienced a disability shock on only one of the following three indicators: (1) doctor-diagnosed major health condition, (2) self-reported poor or fair health, and (3) self-reported work-limiting condition. We find substantial heterogeneity in financial vulnerability between the three measures at the baseline and in the magnitude and pattern of change. Consistent with the overall results, there is a clear increase in percentage poor for both the *doctor-diagnosed major health condition* and *self-reported work-limiting condition* indicators. The results for *self-reported poor or fair health* are dramatically different: There is a relatively high poverty rate at the baseline and a decline in poverty between the baseline and followup.

To improve our understanding of differences among respondents reporting a disability shock on a single indicator only, we analyze detailed characteristics of the three disability indicator subgroups defined by the type of indicator and observe some salient patterns (data not shown). In general, respondents reporting only *doctor-diagnosed major health conditions* are consistently better off at the baseline compared with members of the other two subgroups on a number of SES indicators. The fact that the mean household income of those in the group reporting a *doctor-diagnosed major health condition* actually increases

between the baseline and followup is consistent with the lowest poverty rate increase for that group. The main distinguishing characteristics of the respondents in the group that *self-reported poor or fair health* are the vast overrepresentation of high school dropouts and minorities (Hispanic and non-Hispanic blacks) among them. The differences between respondents in this group and those in the group self-reporting only *work-limiting conditions* are complex. Compared with those in the group self-reporting only *work-limiting conditions*, those self-reporting only *poor or fair health* have comparable average earnings and lower mean household income at the baseline, but experience more muted declines in average earnings and household income (estimates are available from the authors upon request).

The decrease in poverty rate among those in the group that *self-reported poor or fair health* runs counter to the expectation that disability shocks should lead to increased financial vulnerability. However, a more careful analysis considering the SES characteristics of this group explains the seeming anomaly. Heterogeneity is clearly very important here. First, the poverty rate decreases, even though the average household income decreases by 16 percent between the baseline and followup. Second, a closer look at what happens at the lower tail of the income distribution provides an explanation for the decrease in the poverty rate. In general, the loss of earnings is the major mechanism creating a relationship between disability shocks and deterioration in financial well-being. However, the loss of earnings is less relevant than changes in other income items as determinants of poverty status for this group. For respondents who did not work at the baseline, the poverty rate is essentially bound to decrease because the loss of earnings cannot contribute to increased poverty, while increased public benefits and pensions and positive earnings for some at the followup, however small, pushes household income above the poverty line in some cases. More importantly, among respondents *self-reporting poor or fair health* who worked at the baseline—in contrast to those in the other two subgroups—the poverty rate goes down, particularly among the working poor. Earnings loss among the working poor cannot result in poverty because those people are already poor, whereas the increase in both the proportion of those receiving income and the average amount received (while small) from public benefits and pensions pushes household income above the poverty line. Although

the sample size is small, data tabulations (available upon request from the authors) indicate that the sample of respondents classified as working poor at the baseline who *self-reported poor or fair health* are much more likely to be Hispanic and without a high school degree. While this discussion highlighted some of the factors explaining the poverty-related differences among the three disability indicator subgroups, much remains for future analyses. In particular, the results from Table 7 provide clear motivation for follow-up studies focusing on differences by SES indicators.

Finally, Table 7 shows that *recovery* (D→ND) is associated with a reduction in the poverty rate, producing an improvement on this indicator of economic vulnerability (4.4 percentage point reduction in the poverty rate) that is roughly comparable to the absolute magnitude of increase in poverty (5.7 percentage point increase) associated with disability shocks among the newly disabled (ND→D).

So far, in our analysis, we have looked at changes in disability status between two points in time. This of course provides a simplified picture because people may move in and out of a disability state. Hence, in

Table 8, we focus on another dimension of the longitudinal pattern of disability: the “persistence” of disablement as measured by the number of waves with at least one reported disability indicator from 1992 to 2000. As expected, the poverty rate is generally positively associated with disability persistence, as revealed by the increase in poverty rate (both in 1992 and in 2000) and the number of waves with reported disability. Furthermore, the percentage point change in poverty rate between the baseline and followup increases among respondents with reported disability in two or more waves, although the pattern shows a nonlinear relationship.

Our overall conclusion from this brief analysis of variation on two dimensions of the pattern of disablement is that both *severity* and *persistence* are important determinants of the economic vulnerability associated with disability shocks. These results are generally in agreement with earlier findings by Meyer and Mok (2006). In addition, we conclude that the overall findings reported in the main body of this study, while instructive, may mask some heterogeneity by SES, and therefore more disaggregated analyses

Table 8.
Poverty rates, by the number of waves between 1992 and 2000 with at least one reported disability indicator

Number of waves with at least one reported disability indicator	Percent poor ^a		Percentage point difference	Number of observations
	1992	2000		
None	4.1 (0.5)	4.7 (0.6)	0.6 (0.7)	1,479
One	7.2 (1.1)	6.9 (1.5)	-0.3 (1.6)	461
Two	5.7 (1.4)	11.6 (1.8)	5.9 (1.6)	301
Three	12.6 (1.7)	22.5 (2.8)	9.9 (2.3)	314
Four	13.0 (2.0)	16.6 (2.0)	3.6 (1.6)	410
All five waves	21.1 (1.6)	25.6 (1.6)	4.5 (1.4)	855
Total	9.8 (0.7)	12.6 (0.9)	2.8 (0.6)	3,820

SOURCE: Data are from the Health and Retirement Study.

NOTES: The sample consists of individuals aged 51–56 at the baseline in 1992 (wave 1) and aged 59–64 at the followup in 2000 (wave 5). Reported figures are weighted using survey sampling weights. Estimated standard errors are in parentheses.

- a. In determining poverty status, we follow the procedure described in the RAND-HRS documentation (version G) to the extent feasible. Status as poor is determined using poverty threshold levels from the Census Bureau. Using the RAND-HRS data file, family composition is determined by the number of people living in the household. We are unable to identify the number of family members younger than age 18 and to precisely identify the number of household members who were not related to the respondent or spouse, and therefore our poverty measure is somewhat imprecise.

focusing on the interactions between SES and disablement in the future could provide additional insights on the role of social safety nets in affecting the financial security of people experiencing disability shocks near the retirement age. Another direction for future research involves looking at the temporal patterns of disability before and after the full retirement age, as well as differential effects of disability on financial well-being across cohorts.

Conclusion

In this article, we followed three groups of adults aged 51–56 in 1992 with different disability experiences during an 8-year period and found distinct patterns of changes in financial security. First, people who started as nondisabled (in 1992) and were also nondisabled 8 years later (in 2000) have experienced little change in their income and poverty status despite substantial loss of earnings associated with labor force withdrawal; they started with private health insurance that was largely retained over time; and they experienced substantial increases in wealth. Second, newly disabled people (those who started nondisabled and experienced a disability shock later) experienced substantial increases in poverty and sharp declines in median income. The average earnings loss was greatest for people in this group, and on average, public benefits and private pensions replaced less than half of their lost earnings. The net increase in poverty was somewhat muted because of spousal income among the married, while the poverty increase was substantially larger among the nonmarried. Among newly disabled people, median household wealth increased, but at a much lower rate than among those who started and stayed nondisabled. While the private health insurance coverage of those newly disabled declined, this was more than compensated for by the increase in public health insurance. Third, people who were already disabled at the

baseline and stayed disabled at the followup experienced a decline in their income security, but public cash benefits muted the drop. While those people started out with the lowest level of household wealth, they experienced growth in median net household wealth. Nevertheless, their liquid resources—financial wealth—remained meager. Importantly, their overall health insurance status improved because of a substantial increase in public health insurance coverage. Finally, greater severity of disability results in a greater increase in poverty for the affected disability group. Based on limited data, we observed some improvement in the poverty status of a small group that shifted from disabled to nondisabled between the baseline and followup.

Much remains for future research. Most importantly, a major source of heterogeneity is due to the conditional nature of the social safety net system in the United States (based on age, low-income levels, and severe disability) with defined benefit and defined contribution pensions (Dushi, Iams, and Tamborini 2011) and health insurance playing a more prominent role at higher SES levels; public cash benefits and health insurance programs play a larger role at the low end of the SES spectrum. However, among the working-age population, public health benefits are also heavily conditioned on severe disabilities. Thus, safety nets dampen the effect of disability shocks in ways that may interact with SES. Of particular interest to policymakers is how subgroups defined by educational attainment fare in the event of a disability shock near retirement age. This issue calls for a study of the relationship between disability shocks and financial well-being at a more disaggregated level. Finally, more analytically oriented studies focusing on the effect of disability shocks net of other factors are also needed for a better understanding of financial security as people move closer to the Social Security FRA.

Appendix

Table A-1. Own earnings, public benefits, and pensions, by longitudinal pattern of disability

Longitudinal pattern group ^a and variable	1992 baseline			2000 followup			Difference between 1992 and 2000				Number of observations		
	Own earnings	Public benefits	Pensions	Public benefits + pensions	Own earnings	Public benefits	Pensions	Public benefits + pensions	Own earnings	Public benefits		Pensions	Public benefits + pensions
ND→ND													
Percent receiving any income from source	83.6	0.2	4.3	4.8	61.8	0.1	22.6	32.9	-21.8	-0.1	18.3	28.1	1,766
Mean conditional on receipt ^b (\$)	36,339	3,606	11,789	10,946	34,273	2,276	14,985	13,586	-2,066	-1,330	3,196	2,640	
Median conditional on receipt ^b (\$)	27,716	5,000	12,000	8,064	22,680	486	9,720	8,748	-5,036	-4,514	-2,280	684	
Overall (unconditional) mean ^c (\$)	30,393	411	504	916	21,164	1,582	3,382	4,964	-9,228	1,171	2,878	4,048	
Overall (unconditional) median ^c (\$)	(1,782)	(115)	(69)	(153)	(1,595)	(184)	(443)	(515)	(2,156)	(100)	(456)	(494)	
	22,000	0	0	0	8,910	0	0	0	-13,090	0	0	0	
ND→D													
Percent receiving any income from source	84.0	0.5	4.6	5.4	48.6	7.5	27.4	47.7	-35.4	7.0	22.8	42.3	833
Mean conditional on receipt ^b (\$)	30,404	9,754	12,584	11,845	24,565	5,637	15,129	12,848	-5,839	-4,117	2,545	1,003	
Median conditional on receipt ^b (\$)	26,000	11,280	10,000	10,000	19,440	4,860	10,692	8,651	-6,560	-6,420	692	-1,349	
Overall (unconditional) mean ^c (\$)	25,543	390	573	964	11,930	2,399	4,148	6,548	-13,614	2,009	3,575	5,584	
Overall (unconditional) median ^c (\$)	(1,402)	(95)	(134)	(193)	(768)	(195)	(511)	(582)	(1,168)	(167)	(506)	(552)	
	21,000	0	0	0	0	0	0	243	-20,757	0	0	0	
D→D													
Percent receiving any income from source	63.6	14.0	5.8	19.6	34.7	20.0	21.4	55.5	-28.9	6.0	15.6	35.9	1,221
Mean conditional on receipt ^b (\$)	24,793	6,431	13,067	8,770	25,341	6,019	11,410	9,473	548	-412	-1,657	703	
Median conditional on receipt ^b (\$)	20,000	6,000	8,000	6,400	18,630	5,249	7,076	6,209	-1,370	-751	-924	-191	
Overall (unconditional) mean ^c (\$)	15,763	1,520	761	2,281	8,805	3,197	2,436	5,634	-6,958	1,678	1,675	3,354	
Overall (unconditional) median ^c (\$)	(967)	(115)	(142)	(165)	(623)	(128)	(262)	(344)	(726)	(130)	(283)	(327)	
	8,000	0	0	0	0	311	0	2,430	-7,689	0	0	0	

SOURCE: Data are from the Health and Retirement Study.

NOTES: The sample consists of individuals aged 51–56 at the baseline in 1992 (wave 1) and aged 59–64 at the followup in 2000 (wave 5). Monetary values are in 1992 dollars. Reported figures are weighted using survey sampling weights. Selected standard error estimates (in parentheses) are derived using Taylor linearization to account for complex sample design.

- Disability status in the 1992 and 2000 waves is defined based on three indicators: (1) respondent reported doctor-diagnosed major condition (heart disease, cancer, stroke, and lung disease); (2) respondent self-reported poor or fair health; and (3) respondent self-reported work-limiting condition. People satisfying any one of these three conditions are classified as disabled at the given wave (in 1992 or in 2000). The groupings are based on the combination of disabled or nondisabled status at the two observation waves. Thus, the ND→ND group is comprised of respondents who were nondisabled at the baseline (in 1992) and at the followup (in 2000); the ND→D group is comprised of respondents who were nondisabled at the baseline, but disabled at the followup; and the D→D group is comprised of respondents who were disabled both at the baseline and followup.
- The mean/median values are estimated among respondents in each group with positive values in each specific income source.
- The mean/median values are estimated for all respondents in each group whether the variable value of each income source is zero or positive.

Notes

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¹ A fourth important group consists of people who started as disabled at the baseline in 1992 and transitioned to nondisabled status at the followup, by 2000. We call this group “recovered” disabled. Because of the small sample size, we do not include this group in our main analysis, but present some information in our subgroup analysis near the end of the article.

² There is some evidence, however, that people under-report disabling conditions relative to their medical records (Landrum, Stewart, and Cutler 2007).

³ The choice of 4 percent is arbitrary. This is a rough measure for many reasons including differential incentives to annuitize depending on disability status. Annuitization of defined contribution accounts and other liquid assets is extremely rare among nondisabled working-age people, and as Dushi and Webb (2004) suggest, delaying annuitization until ages 73–82 may be optimal for couples. However, most people never annuitize. The 4 percent rate is clearly high for nondisabled individuals. However, people with severe disabilities might decide to use a much higher rate of liquid assets for current consumption either because of high mortality risk or current consumption needs that cannot be met with current income, particularly after an unanticipated disability shock.

⁴ Of the total sample, we first define the subgroup that is “covered” by SSI in the sense of potential financial eligibility for SSI disability payments in the event of a hypothetical severe disability shock. This subgroup is defined based on having sufficiently low income and assets for potentially qualifying members as SSI financially eligible in the event of a potential disability shock. We follow the approach outlined by Rupp, Davies, and Strand (2008) in establishing countable income not based on observed countable income, but under the assumption that the earned income of the respondent is capped at the substantial gainful activity (SGA) level under the hypothetical disabled state. This makes sense given that the SGA screen is used in the determination of categorical eligibility as disabled. Earning above the SGA is regarded as prima facie evidence of no categorical eligibility in the initial disability determination process. Within certain restrictions, awardees may earn above the SGA level, but as a practical matter, they rarely exceed that level while in disability benefit status in the vast majority of cases. Our indicator of potential eligibility for SSI disability payments is derived separately for couples and single people and is wave specific; that is, the program parameters and income are in nominal terms for each wave year. The remaining part of the sample that is not potentially eligible for SSI disability is divided into two subgroups based on their annual household income and annuitized nonhousing wealth. We assume a 4 percent

withdrawal rule. The annuitized wealth measure is then added to annual household income. Using this combined measure, we derive the second and third subgroups as those whose wealth-adjusted income is below and above the median, respectively.

⁵ “Own earnings” is the sum of the respondent’s wage and salary income, bonuses, overtime payments, commissions, and tips. “Own public benefits” is the sum of the respondent’s income from disability benefits covered under Social Security, Supplemental Security Income, and income from Social Security retirement, spouse, or widow(er) benefits. “Own pensions” is the sum of the respondent’s income from all pensions and annuities. “Other sources of income” is total household income minus the sum of the respondent’s own earnings, public benefits, and pensions, as previously described. Thus, it includes spouse’s earnings, public benefits, and pensions, as well as household capital income, income from unemployment and workers’ compensation, and income from government transfers for both spouses and other household sources of income (such as alimony, lump-sum payments from insurance, pensions, and inheritances).

⁶ See Turner and Beller (1989); Gustman and Steinmeier (1992); Employee Benefit Research Institute (1993); Kruse (1995); Rajnes (2002); Costo (2006); Buessing and Soto (2006); Gustman, Steinmeier, and Tabatabai (2009); Purcell (2005, 2009); Copeland (2005, 2009); Bureau of Labor Statistics (2010); Dushi and Iams (2008); Dushi and Honig (2007); and Iams and others (2008).

⁷ Using HRS survey reports, we find that 38 percent of wage and salary workers aged 51–56 in the original HRS cohort reported being included in a defined contribution (DC) plan in the 1992 wave, whereas 50 percent of wage and salary workers aged 51–56 in the Early Baby Boom (EBB) cohort reported being included in a DC plan in 2004. Buessing and Soto (2006, Table E4), using Form 5500 data from the Department of Labor, reported that among all private-sector workers, participation rates in DC plans were 34 percent in 1992 and 45 percent in 2003.

⁸ Johnson, Mermin, and Uccello (2005) also find an association between marital status and disability incidence.

⁹ Johnson, Mermin, and Murphy (2007) suggest that financial holdings are more sensitive to the effects of disability shocks than future Social Security benefits.

¹⁰ Sources: (1) S&P 500 Stock Price Index, <http://research.stlouisfed.org/fred2/series/SP500/downloaddata?cid=32255>, June 1, 1992 (408.27) to June 1, 2000 (1,461.96); (2) Case-Shiller US National Home Price Index, <http://www.spindices.com/indices/real-estate/sp-case-shiller-us-national-home-price-index>, June 1992 (75.48) to June 2000 (103.77); (3) Consumer Price Index (CPI), http://www.bls.gov/data/inflation_calculator.htm, 1992 (\$100.00) to 2000 (\$122.74). The rounded value of 123 percent represents the average CPI for the calendar year 2000 compared

with the average CPI for 1992. All data were extracted on November 28, 2012. The data cited in the text represent the authors' calculations.

¹¹ In our discussion, we focus mainly on median statistics because they are not affected by the outliers.

¹² Obviously, there were some people in this group who may not have been insured for DI and also may not have been eligible for SSI and Medicaid because of the means test. Others may be in the 2-year DI waiting period for Medicare, and some may be disabled but either did not apply for benefits or were denied benefits. It is possible that some may have been disabled by our disability measures, but not by SSA standards.

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