Disability, Early, and Normal Retirement

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1. Introduction

It has been suggested that raising the age of earliest eligibility for Social Security benefits from age 62 to age 65 might help the solvency of the nation's old-age retirement system. But doing so could possibly induce some to shift from seeking early retirement benefits to the Social Security Disability Insurance (SSDI) benefit program. In this project uses we use data from the Health and Retirement Study (HRS) to examine whether raising the early retirement age under the Social Security old-age program might induce additional workers to move to SSDI. In the present overview, we summarize findings on the sociodemographic and economic characteristics of people who took alternative retirement pathways. Follow-on work is also discussed briefly.

2. Previous Research

Little is known about how large the spillover might be to the DI rolls if there were an increase in the early retirement age.[1]   Nevertheless there have been many analyses of the economics of the DI program (cf. Bound and Burkhauser 1999). Most of these explore econometric issues surrounding retirement patterns, but they typically take no account of employer-provided retirement benefits that might make early retirement more or less attractive (eg. Benitez et al., 2000). Such benefits include early and normal retirement private pension benefits, privately-provided disability benefits, and company-provided retiree health insurance. Labor economists have evaluated how company-sponsored pension plans influence retirement but have not allowed for potential tradeoffs between regular and disability retirement.[2]

To date, relatively little is known about the how health, wealth, and demographic status might influence people to choose early retirement versus some other retirement path. A prior

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[1] However the U.S. General Accounting Office recently suggested that raising retirement ages could lead to higher SSDI rolls (USGAO, 1999) and in its most recent Annual Report, the Social Security Board of Trustees also concluded that more workers would file for disability insurance as the normal retirement age is raised beyond age 65 (Board of Trustees, 2000).

study examined characteristics of age-62 retirees in the HRS and contended that raising the early

retirement age would not impose undue burdens on the older population (Burkhauser et al.,

1996). However that study omitted people receiving disability benefits, so it is not informative

about the possibility of workers switching from early to DI benefits. In the present study we

provide initial evidence on the characteristics of people taking the alternative paths into

retirement.[3]

3. Methodology and Data Construction

The project uses four waves (1992-1998) of the HRS to study benefit receipt among

retirees, focusing on those taking three main paths to retirement: filing for DI at or before age 62,

taking early retirement (ER) between 62-64, or taking retirement (NR) benefits (at or after age

65).[4] So as to observe completed retirement transition spells, we include in the sample only

persons age 57-61 in 1992; by the fourth HRS wave, this group had attained age 64-67.[5]

Consequently for each respondent, we are able to observe which of the three retirement paths

resulted. We can also compute the value of the wealth and leisure associated with each of these

three paths for each person in the sample. This will permit us to link what people actually did

against the values of the choices available to them, in future work.[6]

3.1 The Budget Constraint

In order to assess the economic opportunities associated with each retirement path, it is

necessary to model the budget constraint faced by each older worker. The HRS is an invaluable

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[2] For a recent review see Lumsdaine and Mitchell (1999).

[3] Similar findings appear in Uccello (1998), CBO (1999), and USGAO (1999).

[4] More detail on data construction and modeling is provided in Mitchell and Phillips (in progress).

[5] We use all four waves of the HRS currently available in public or preliminary release status; special permission to link retirement outcomes with restricted data was obtained as required. This study includes only those with a link to the Earnings and Benefits File (EBF) from Social Security; how this affects this is explored in Mitchell and Phillips (in progress),

resource for this purpose, in that it may be linked to records on respondents' pension and Social Security earnings.[7] This permits us to compute respondents' eligibility status for benefits as well as the likely benefit amounts that worker might receive for selecting the early, normal, or disability path. Of course the program rules must be followed: Social Security *retirement benefits* are payable only to workers who have contributed long enough to be "fully insured" and who have attained at least age 62, when early retirement is current permitted.[8] Alternatively, Social Security *disability benefits* are payable only to those "fully insured for disability purposes"; this requires that the worker must have earned 20 QC's during the last 40 calendar quarters ending in disability.[9] In other words, any given worker might be both fully nor disability insured, he could be neither, or he could be fully but not disability insured.[10] Variations in eligibility over the lifetime are quite interesting in our data.

For a fully insured worker, computing Social Security ER and NR benefits requires determining the Average Indexed Monthly Earnings (AIME), his Primary Insurance Amount (PIA), and his monthly benefit.[11] The monthly benefit amount depends on the worker's retirement age; if he has attained normal retirement age (NR), defined as age 65 for our respondents, his benefit equals his PIA. If retirement occurs before NR, the benefit is reduced by

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[6] Modeling the budget constraint to include DI benefits therefore extends the "peak value" concept popularized by Coile and Gruber (2000) in the Social Security context, and explored by Fields and Mitchell (1984) and Mitchell and Fields (1987) in the pension context.

[7] Because of the confidential nature of the administrative data, researchers may access them only under restricted conditions; see www.umich.edu/~hrswww for details.

[8] To be fully insured for retirement benefit purposes, the worker must have 40 QC's (quarters of coverage) by age 62; QC's are awarded based on having had covered earnings of at least a threshold amount each year. Coverage, eligibility, and benefit rules are available from the Social Security Administration's web page (www.ssa.gov).

[9] Also to be "disability insured" the worker must 1) have at least 6 QC's and 2) have 1 QC for each year from age 22 to the age of disability (assuming he or she is age 31 or older; special rules apply to younger workers).

[10] This last might occur if a worker having at least ten years of work (so he is fully insured) lost his disability insurance status due to periods of illness or unemployment.

[11] The AIME involves indexing a worker's earnings between 22 and 62 after dropping the lowest years. Indexation links actual covered earnings in a given year to average covered earnings in the same year, and these are then brought forward to the point when the worker is age 60 (earnings after age 60 are entered in nominal rather than indexed form). The PIA formula then applies a 3-tier replacement rate formula to the indexed earnings; the first

5/9 of a percent per month below that age. Hence someone leaving at 62 (the ER) would receive 80% of the full PIA for the remainder of his life. The DI benefit equals to an eligible worker's PIA; that is, the DI and the NR benefits are equal, though the DI benefit is payable at a younger age. [12] Hence retiring at age 62 on DI would provide a Social Security benefit 20% larger than the ER benefit. However applying for DI takes time and effort, and benefits are not always granted.[13]

3.2. Estimation Methodology to be Adopted

A given retirement path j (j=DI, ER, NR) is modelled as having an income stream specified in expected present value form (YRET$_j$), and leisure associated with that choice (L$_j$). For a single individual comparing retirement paths, the wealth associated with a given path is the sum of his nonlabor wealth (W$_a$), potential earnings (E) up to age R, and retirement benefits from company pensions and social security from age R on (P and SS):

$$\text{YRET}_j (R) = W_a + \Sigma_{a,R}\ E(t,j) * s(t) * [1/(1+r)]^t + \Sigma_{R,D}\ [SS_t(R,j) + P_t(R,j)] * s(t) * [1/(1+r)]^t,$$

where r is a discount factor and s(t) is the probability of surviving an additional year. Benefits are subscripted j since their value depends on whether the worker takes the DI, the ER, or the NR path.[14] Assuming a general utility function with arguments retirement wealth and leisure (retirement years remaining), and a person-specific disturbance term distributed extreme value, the empirical equation takes the form:

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replacement rate is 90%, the second 32% and the third, 15%. Cost-of-living adjustments are applied from the PIA calculation year to the retirement year.

[12] Legally, the OASDI system defines disability as "the inability to engage in any substantial gainful activity by reason of medically determinable physical or mental impairment, which can be expected to result in death or which has lasted and can be expected to last for a continuous period of not less than twelve months" (SSA 1992). There is also a five-month waiting period after the onset of disability until the person can apply for benefits.

[13] In this study we assume that the probability of receiving DI benefits conditional on application is around 49%, consistent with the average benefit receipt rate reported in SSB (1999) over the 1990's.

[14] For married couples the formulation of the budget constraint is somewhat more complex since spouses are entitled to social security and pension benefits, and survivor benefits. The empirical work described in more detail in Mitchell and Phillips (in progress) does incorporate these as well.

Prob (j=J) = exp [(b_j $YRET_j$ + c_j L_j)+ d $\underline{X}_i$]/ Σ_j (exp (•)).

An additional vector of explanatory variables X may be tested in model variants. Parameter estimates of b, c, and d may be obtained with multinomial logit estimation. These parameters can then be used to estimate changes in the probability of selecting each path, given a specified policy change in the values of the retirement benefits associated with any one path.

4. Preliminary Descriptive Findings

Table 1 describes baseline sociodemographic characteristics of the entire HRS sample, and also for people actually selecting each retirement path subsequently. One interesting fact is that respondents who later ended up on DI were initially less well educated, more heavily black and nonmarried, and had more baseline health problems than did those who took either early or normal retirement. Put differently, those who went on to select ER were quite similar at baseline to those later electing NR (consistent with Burhkauser et al, 1996), and both were healthier and better educated than those who ended up on DI.

Ex-ante or anticipated wealth associated with each of the three retirement paths is reported in Table 2 differentiated by source. Only 71% of the entire sample was DI insured in 1992, and 84% were old-age insured. These data change over the sample period, however, as depicted in Figure 1, which shows the time path of respondents' eligibility for DI and OASI. What this reveals is that an additional year of work can play a critical role in enhancing some older peoples' insured status at the margin. The overall present value of wealth anticipated from Social Security along the three paths is similar for ER and NR, on the order of $156,000-$169,000 for the median 10 percent. But lower eligibility levels and the reduced chance of obtaining DI even if eligible (assumed here to be 49%, the population average) reduces expected SSDI benefits to about $73,000 for the entire sample. Interestingly, the levels of Social Security

benefits are quite similar for those who subsequently chose early and normal retirement, but are far lower for the DI recipients.

Table 2 also highlights the powerful role of employee benefits: almost half the sample had health insurance coverage at baseline, 44% had access to disability benefits through their employers, more than two-fifths had company-provided retiree health insurance and long-term disability coverage, and 61% had a company pension (including from prior jobs). These factors do not differ as markedly across those selecting different retirement paths with the exception of the lower fraction of DI takers covered by retiree health insurance. Earnings were lower for DI takers than for the other two groups, and earnings were highest for those that ended up working the longest. Median early and normal retirement pension wealth was relatively low, at $25,000-29,000, due to the overall large number of people lacking coverage or having low benefits; disability pension benefits were higher. It is also worth noting that those eventually taking DI had only half the pension wealth of the other two groups, along with much less housing, other financial, and spousal benefits.

Summing the elements of the budget constraint, the total retirement wealth associated with the DI path was about $483,000, about $540,000 for the ER path, and $617,000 for the NR path.[15] But separating the sample shows that those who eventually took DI had about half this level, while those electing ER and NR both had much more. Also worth noting is the fact that Social Security benefits are only one source of old-age support; retiring early even without Social Security ER benefits is potentially feasible for some who have enough other income, such as from company-provided pensions and own saving.

5. Future Research

Follow-up analysis will examine several issues in more detail. First, we will estimate behavioural parameters using the multinomial logit framework outlined above. Next we will simulate how eliminating Social Security early retirement benefits might influence workers' paths into retirement. We also plan to determine whether adding additional categories for the dependent variable influences results and whether accounting for sample attrition is important. Last, we plan on exploring in more detail the determinants of the application for DI benefits.

6. References

Benitez-Silva, Hugo, Moshe Buchinsky, Hiu Man Chan, Sofia Cheidvasser, and John Rust. "How Large is the Bias in Self-Reported Disability?" NBER Working Paper No. W7526. February 2000.

Bound, John and Richard Burkhauser. "Economic Analysis of Transfer Programs Targeted on People with Disabilities". *Handbook of Labor Economics*. Eds. Orley Ashenfelter and David Card. New York: Elsevier, 1999: 2417-2528.

Burkhauser, Richard V., Kenneth A. Couch, and John W. Phillips. "Who Takes Early Social Security Benefits: The Economic and Health Characteristics of Early Beneficiaries," *The Gerontologist*, 36(6). 1996: 789-799.

Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds (Board of Trustees), *2000 Annual Report*, Social Security Administration, Washington, D.C.: 2000.

Coile, Courtney and Jonathan Gruber. "Social Security and Retirement". NBER Summer Institute Working Paper, July 1999.

Fields, Gary S. and Olivia S. Mitchell. *Retirement, Pensions, and Social Security*. Cambridge, Mass.: MIT Press, 1984.

Gustman, Alan S., Olivia S. Mitchell and Thomas Steinmeier. "The Role of Pensions in the Labor Market." *Industrial and Labor Relations Review* 47 (3) 1994: 417-438.

Lumsdaine, Robin and Olivia S. Mitchell. "New Developments in the Economics of Retirement". In *Handbook of Labor Economics*. Orley Ashenfelter and David Card, eds. Amsterdam: North Holland, 1999: 3261-3308.

Mitchell, Olivia S. and Gary Fields. "Restructuring Social Security: How Will Retirement Ages Respond?" In *The Problem Isn't Age: Work and Older Americans*. Editor Steve Sandell. New York: Praeger, 1987.

Mitchell, Olivia S. and John Phillips. "Substitution between Early Retirement and Disability Retirement Under Social Security". Pension Research Council Working Paper. Wharton School. *In progress.*

Uccello, Cori. "Factors Influencing Retirement: Their Implications for Raising Retirement Age". AARP Public Policy Institute Working Paper #9810, Washington, DC, October 1998.

U.S. Congressional Budget Office (CBO). *Raising the Earliest Eligibility Age for Social Security Benefits*. Congressional Budget Office, Washington, DC, Jaunuary 1999.

U.S. General Accounting Office (GAO). *Social Security Reform: Implications of Raising the Retirement Age*. GAO/HEHS-99-112.Washington, DC: USGAO, August 1999.

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[15] Because all entries in Table 2 are computed for the median 10%, the components will not sum to the totals.

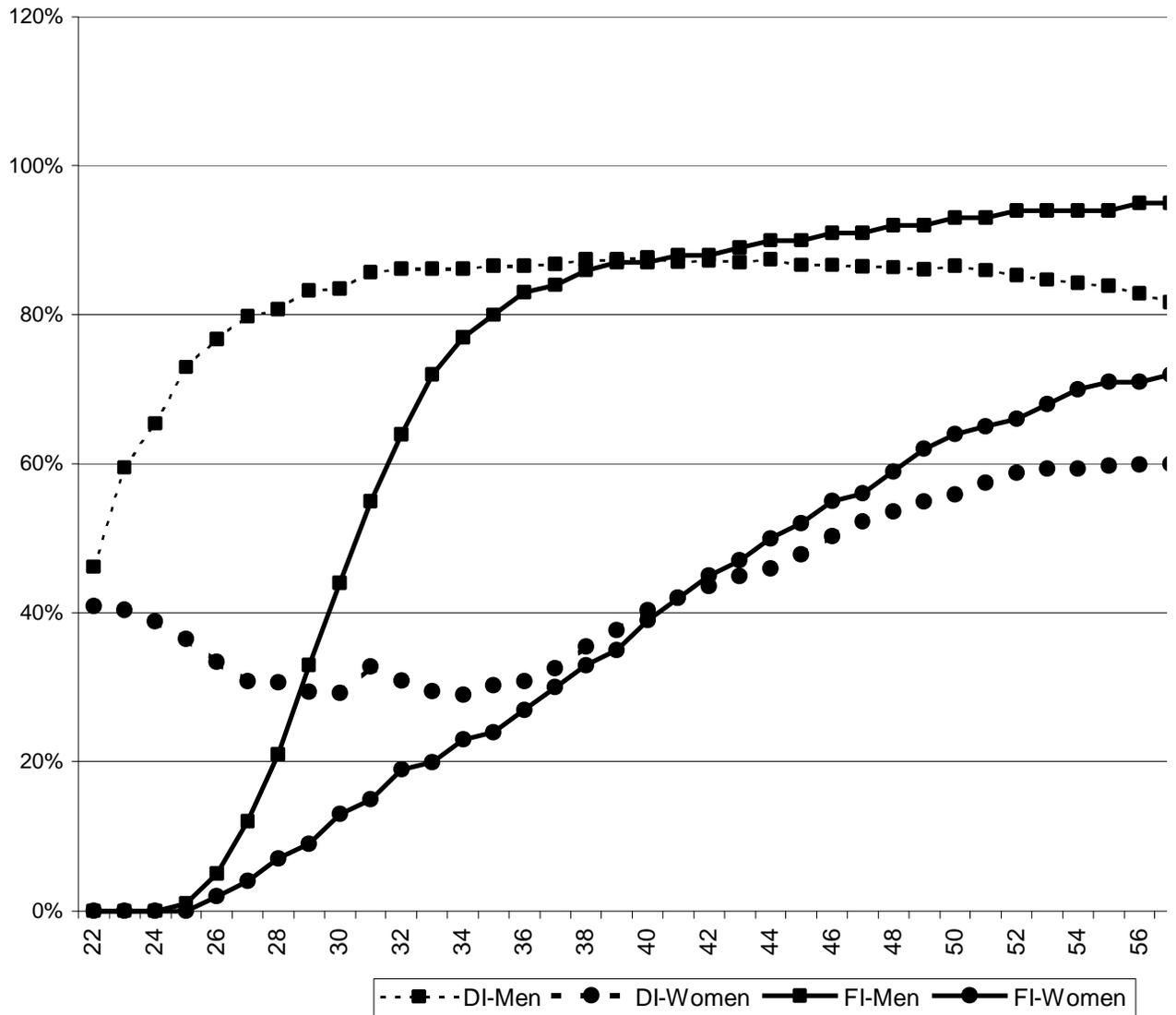**Table 1: Background Characteristics of Analysis Sample (1992)**

Demographic	Total	DI	ER	NR
Age (years)	59.4	59.0	59.5	59.2
Female (%)	53%	58%	56%	49%
Currently Married (%)	77%	60%	79%	76%
Partner (not married) (%)	1%	2%	1%	2%
Ever Divorced (%)	26%	42%	25%	27%
Ever Widowed (%)	10%	18%	10%	9%
Never Married (%)	4%	5%	4%	4%
Black (%)	7%	15%	6%	7%
Education				
< High School (%)	24%	53%	26%	18%
High School (%)	37%	34%	39%	33%
>High School (%)	39%	13%	35%	49%
Health Status				
Work Limiting Disability (%)	16%	51%	15%	12%
Self Report of Health:				
Excellent (%)	24%	3%	23%	27%
Very Good (%)	32%	15%	34%	34%
Good (%)	28%	27%	28%	28%
Fair (%)	12%	30%	12%	9%
Poor (%)	4%	25%	4%	2%
Difficulty with ADL (%)	14%	36%	19%	14%
Doctor-diagnosed Conditions:				
Arthritis (%)	42%	64%	42%	41%
Cancer (%)	6%	6%	7%	6%
Diabetes (%)	11%	28%	10%	10%
Heart Problems (%)	14%	26%	15%	11%
High Blood Pressure (%)	41%	54%	40%	42%
Lung Disease (%)	7%	16%	7%	6%
Mental Problems (%)	9%	13%	9%	9%
Stroke (%)	2%	6%	2%	3%
CES Depression Score	21.5	25.8	21.4	21
Poor Vision (%)	2%	9%	2%	2%
Poor Hearing (%)	2%	1%	3%	2%
Number of observations	1,843	92	1,092	659
%	100%	5%	59%	36%

Source: Authors' computations, EBF sample

Table 2: Median 10% of Wealth, by Source ($1992)

	Total	DI	ER	NR
Social Security:				
DI Insured in 1992	71%	66%	72%	71%
OA Insured in 1992	84%	83%	87%	79%
PV of SSDI Wealth	$73,432	$37,353	$78,009	$70,316
PV of ER Wealth	$155,576	$105,301	$163,294	$148,665
PV of NR Wealth	$168,508	$114,522	$176,157	$162,143
Earnings and Job-based Insurance:				
Employed in 1992	69%	51%	63%	80%
Health Ins. Coverage	49%	49%	45%	53%
Long-Term DI	44%	42%	38%	51%
Retiree Health Ins.	43%	38%	46%	40%
PV Earnings to 62	$19,751	$11,413	$16,743	$28,451
PV Earnings to 65	$48,698	$23,297	$40,360	$70,096
Employer Pension:				
Live Pension	35%	28%	30%	43%
Any Pension	61%	52%	59%	65%
PV Disability Pension	$30,441	$10,345	$22,657	$53,059
PV Early Pension	$24,069	$10,219	$17,207	$45,789
PV Normal Pension	$29,019	$10,697	$19,492	$53,447
Other Wealth:				
Housing	$50,041	$20,524	$54,540	$50,787
Other Financial	$57,427	$6,447	$62,862	$60,382
Spousal Wealth	$22,189	$0	$22,918	$28,493
Total Retirement Wealth:				
PV if take DI	$482,870	$256,351	$471,890	$538,662
PV if take Early Ret	$539,477	$293,782	$536,639	$575,043
PV if take Normal Ret	$616,668	$343,603	$611,989	$658,736

Source: Authors' computations, EBF sample

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