Health and Work Capacity of Older Adults: Estimates and Implications for Social Security Policy

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ABSTRACT

The simultaneous growth in longevity and high debt levels in the U.S. have increased interest in raising the age of eligibility for public retirement benefits. The consequences of this policy depend on the health of the near elderly overall and by demographic group. We simulate the work capacity and likely disability experience of near elderly individuals (62-64 year-olds) based on the health status of the near elderly and the relationship between health and work, disability, and retirement status of slightly younger people. We estimate these separately by sex, race, and education.

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The long-range deficit in Social Security requires reform to bring future benefits and revenues into alignment. Similar concerns surround Medicare, a program for which budget forecasts are even more dire. One common suggestion for reform of both programs is to increase the age of early and normal retirement (Munnell, Meme, Jivan, et al. 2004), a suggestion described in detail by the bipartisan National Commission on Fiscal Responsibility and Reform (Bowles and Simpson 2010). Supporters argue that this is good policy because people are living longer and are healthier at any given age than in the past, thus making employment at older ages more feasible (Munnell, Meme, Jivan and Cahill 2004; Steuerle 1999).

The equity implications of increasing the age of eligibility may be troubling, however. People with poor health will find maintaining or increasing work substantially more difficult than people with better health, both because they cannot work as much, and because they earn less when they do work. Since health varies systematically by socioeconomic group, these differences could be important. In this paper, we examine the potential interactions between policies that would encourage work at older ages and the work capacity of different groups.

The existing literature on retirement age aims to understand what people might do in response to policy changes. However these papers are typically forced to make strong assumptions regarding an individual's ability to borrow against future Social Security benefits, or to restrict empirical populations to narrow groups to overcome the complexity introduced by joint retirement and claiming decisions and by variation in private retiree benefits. Thus, the literature has difficulty answering an important question regarding the potential burden of reforms that raise the age of eligibility for retirement benefits: what are the young retired able to do?[1] We address this question in this paper. In addition, we examine the variation in work

[1] One exception to this is recent evidence on labor force participation across countries comparing

capacity by education.

Work capacity, of course, is different from actual work behavior. The actual impact of a policy designed to change retirement behavior will depend on the desire of employers to hire those workers at the prevailing wage and changes in the wage of older workers. We do not present a general economic model that would allow the projection of actual outcomes. Rather, we restrict our analysis to the question of work capacity, which is one determinant of labor force participation.

Our analysis does not model a specific policy. That said, the scenario we have in mind is a common one: where workers aged 62-64 faced the same incentives to work as workers aged 57-61. In policy terms, such a scenario could correspond to an increase in the early eligibility age (EEA) for Social Security to 65 and a commensurate rise in the age of full eligibility. To the extent that Medicare eligibility at age 65 influences labor supply and disability decisions at ages younger than 65, this might necessitate an increase in the Medicare eligibility age as well – though the literature is not clear on this. Private pension policies would need to adjust as well.

To estimate work capacity of the near elderly, we simulate labor force participation and subjective disability of people aged 62-64, using their own health measures and a model of the relationship between health and work status estimated with people just younger than them (ages 57-61). By comparing predicted labor force and disability rates by age, we can see how health changes over these age groups affect labor force participation. The only assumption we need to

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mortality rates and participation from 1977 to 2007 for men, concluding that men in 2007 would need to work 47 percent more than they did to match the rate of work for men with similar mortality rates in 1977 Milligan Kevin, and Wise David A. 2014. "Health and Work at Older Ages: Using Mortality to Assess Employment Capacity Across Countries." *Journal of Population Ageing*, **Forthcoming**.. Our work complements this by focusing on more recent labor markets, by including women, and by including a richer set of health measures.

make is that the relationship between health and an individual's ability to work is the same among people aged 62 to 64 as it is for people aged 57 to 61.

Our primary empirical finding is that health deteriorates very slowly in the 60s. In particular, the health of people aged 62 to 64 is only marginally worse than the health of people aged 57 to 61. This is true overall and for most demographic groups. It is also true through age 69. As a result, when we simulate the work capacity of people aged 62 to 64 and assume that there were similar job opportunities as for younger individuals and no differential financial consequences to working, we find that labor force participation in these ages would increase by about 15 percentage points, while self-reported disability rates would increase relatively little.

However, among less educated adults aged 62 to 64, the expected earnings of current non-workers predicted to join the labor force when facing the work incentives of 57 to 61 year olds are up to 19 percent lower than the earnings of current workers aged 62 to 64. Further, subjective disability rates would rise more for the less educated than among the better educated. Thus, the equity implications of such a change would be unfavorable.

The paper is structured as follows. Section 1 discusses past research on health and work capacity. Section 2 describes the data we analyze. Section 3 presents descriptive calculations of health for different race, gender, and education groups. Section 4 estimates models of work capacity and simulates labor force status in the wake of alternative incentives for early retirement. Section 5 discusses the implications of these results.

Section 1. Background

There is a large literature on determinants of retirement decisions and the impact of retirement policy on that decision (see (Blau and Goodstein 2010; Gustman and Steinmeier

2005). We focus our attention on the potential impact of proposed policies to raise the early retirement age for Social Security benefits. Although there is controversy regarding the exact role Social Security benefits play in retirement decisions, a few points of consensus emerge. First, most of the literature finds that health shocks are important in retirement decisions, but that trends in health shocks do not explain retirement trends over time. This is partly because few individuals have truly poor health (Burkhauser, Couch and Phillips 1996; McGeary 2009; Mitchell and Phillips 2000). Second, Social Security policies cannot explain large declines in labor force participation through 1990, but changes in rules that make work relatively more favorable may have contributed to rising labor force participation in recent years (Blau and Goodstein 2010; Gustman and Steinmeier 1986; Lumsdaine, Stock and Wise 1996; Lumsdaine, Stock and Wise 1994; Rust and Phelan 1997).

The behavioral response to changes in benefits available to early retirees has been looked at in a number of papers. In studies of the Social Security Amendments of 1983, which gradually raised the Full Retirement Age (FRA) from 65 to 67 (and increased the penalty for claiming retirement benefits at 62), the increase in the FRA was found to delay retirement (Behaghel and Blau 2012) while leading to a small increase in disability program participation (Duggan, Singleton and Song 2007; Li and Maestas 2008). Duggan, Singleton, and Song (2007) find that, in 2005, these changes resulted in an additional 0.6% of men and 0.9% of women aged 45-64 receiving SSDI benefits.

Recent evidence on proposed (rather than actual) policy changes comes from simulations of the impact of several policy changes among singles and married couples without private pension benefits. (van der Klaauw and Wolpin 2008) predict large increases in employment rates among married males aged 62-69 from changing Social Security benefits: 10 percentage points

for raising the EEA to 70 and 15 points for the elimination of all benefits before 70, but only modest changes among married females and single males or females. Gustman and Steinmeier (2005) simulate that if the EEA were raised to 64, the share of 62-63 year olds who would be retired would fall by 5 percentage points. In an analysis of HRS data, Mitchell and Phillips (2000) model the behavioral response to reducing or eliminating early Social Security benefits. They predict that normal retirement would rise much more than disability insurance caseloads would increase (Mitchell and Phillips 2000). Finally, health insurance benefits provided by employers also influence labor force participation, as does Medicare eligibility, but modestly (Blau and Gilleskie 2008; Gustman and Steinmeier 1994; Lumsdaine, Stock and Wise 1996).

Most relevant to our work is the literature focusing on health status and retirement. Several studies of older workers in the Health and Retirement Study (HRS) describe characteristics of Social Security beneficiaries claiming early retirement. In general, early retirees, particularly those that retire at age 62, are in worse health than those who retire before becoming eligible for early Social Security benefits, or those who retire at older ages (Burkhauser, Couch and Phillips 1996; Haaga and Johnson 2012; Li, Hurd and Loughran 2008; Panis, Hurd, Loughran, et al. 2002; Zhivan, Sass, Sapozhnikov, et al. 2008). Those retiring at 62 also tend to have less education and were more likely to work in physically demanding jobs. Though severe health problems are uncommon among early retirees, roughly 20% have a work-limiting health condition that may make continued work after age 62 more difficult (Leonesio, Vaughan and Wixon 2000; Li, Hurd and Loughran 2008). Another study uses the HRS to show that one's perception of health is an important determinant of retirement (McGarry 2004). Related work suggests that, in particular, functional status, rather than a health condition, appears to be an important determinant of retirement decisions (McClellan 1998).

Our work focuses on the work capacity of early retirees, and thus complements existing studies of health and retirement. A benefit of our research is that it does not force us to restrict our study population in order to avoid complicated private pension rules or make assumptions about liquidity constraints, which is a feature of the literature described above. Further, we focus more attention on the distributional impact of such policy changes by describing how these rules may impact sex, race, and education groups differentially.

2. Data to Estimate Health and Work Capacity

To match health limitations and conditions with labor force status, we use data from two complimentary sources: the Medical Expenditure Panel Survey (MEPS) and the Health and Retirement Study (HRS) (Ezzati-Rice, Rohde and Greenblatt 2008; Hauser and Willis 2004). The MEPS is a nationally representative household survey with an overlapping panel design. It has been run since 1996. New panels are drawn each year from the National Health Interview Survey and then followed for two years. We complement estimates from the MEPS with the HRS, a panel study of adults age 51 and older, which began in 1992.

Both surveys ask questions about health insurance, labor force participation, physical and mental health and functioning, demographics, disability status, and household characteristics. Both surveys also include a rich set of demographics (exact age, gender, race, ethnicity, education, geographic information) and information on self-reported health and functional limitations. Still, there are some differences that make each one worthwhile.

MEPS Data

Our MEPS sample comes from the public-use Full-Year Consolidated Data files for

2000-2003. We use those years because the MEPS included a 100-point self-reported health scale at that time. Respondents were shown a thermometer with markings from 0 to 100 and asked to "indicate on this scale how good or bad your own health is today, in your opinion." The fine-grained responses to this question allow tight links between self-perceptions of health and reported labor market behavior.

The MEPS also asks detailed questions on impairments in activities of daily living (ADLs) and instrumental activities of daily living (IADLs), as well as other physical, cognitive, and social limitations.[2] In addition, the MEPS asks whether individuals have ever been diagnosed with certain health conditions such as diabetes, heart conditions, stroke, or high blood pressure. Together with information on mental health, pain, current smoking status and body mass index (BMI), these measures provide a very rich picture of health status.[3]

We restrict attention to those aged 57-74, for which there are 16,222 observations on 10,525 individuals. After dropping observations without data on key variables, our final MEPS

[2] Activities of Daily Living (ADL) indicate a "yes" response to the following question, "Does anyone in the family receive help or supervision with personal care such as bathing, dressing, or getting around the house?" Similarly, instrumental ADLs, or IADLs, are derived from the response to whether anyone in family received help or supervision with IADLs such as using the telephone, paying bills, taking medications, preparing light meals, doing laundry, or going shopping. (The specific individual is identified in a later question.) Physical functional limitations include: difficulty reaching overhead, bending or stooping, standing 20 minutes, walking 3 blocks, using fingers to grasp, or lifting 10 pounds. Impairments were based on questions about whether anyone in family had difficulty seeing (vision), hearing, or if anyone had cognitive limitations regarding confusion, memory loss, trouble with decision-making, or if individuals needed supervision for their safety. Social limitations indicate that respondent is "limited in participating in social, recreational or family activities because of an impairment or a physical or mental health problem."

[3] Mental health is measured using the Mental Component Score of the 12-item Short Form Health Survey (SF-12), which was included in the self-administered questionnaire (SAQ). Pain is assessed using the SAQ and is focuses on moderate or severe pain experienced on the day of the survey.

sample contains 12,829 observations on 8,799 individuals.[4] Our models of work capacity (from which we later predict labor force status) focus on the subset of 4,478 person-years for 3,236 individuals aged 57-61.

Data describing whether individuals are "in the labor force," "retired," or "disabled" come from two questions. First, individuals were asked, "Do you currently have a job for pay or own a business?" If the answer is no, respondents were asked, "What is the main reason you did not work since (START DATE)?" Possible responses include: could not find work; retired; unable to work because ill/disabled; on temporary layoff; maternity/paternity leave; going to school; take care of home or family; wanted some time off; or waiting to start new job. We classify individuals as disabled if they self-report "unable to work because ill/disabled" and term them retired if they self-report being "retired, " if they never worked in their life, say they are "taking care of home or family," or give an unclassified reason for not being employed.[5] All other individuals are coded as "in the labor force."

HRS Data

We complement the MEPS with data from the HRS. The HRS is representative of the entire community-dwelling population aged 50 and older. We again focus on adults aged 57 to 74, those most likely to work. After dropping observations missing data on key variables, the HRS sample includes 55,992 observations on 16,053 individuals. Our models of work capacity

[4] 2,150 observations were dropped because respondents did not complete the form with the self-reported health scale. Survey weights are provided that adjust for this non-response. An additional 1,243 observations were dropped due to missing information for other variables included in the model.

[5] These data represent each individual's *subjective* assessment of disability and retirement status. Given our interest in self-perceived well being, we believe this is more appropriate than defining disability and retirement status based on benefits receipt or some threshold in hours of work.

focus on 18,233 person-year observations for 9,933 adults aged 57-61, whom we observe in 1994-2008.

The HRS has a larger sample of older adults than the MEPS, with richer information on economic and household characteristics and the characteristics of one's spouse. Results are very similar using either age group, so for comparability between the HRS and MEPs, we show results based on 57-61 year olds. The HRS asks about a common measure of depression symptoms, the 8-item Community Epidemiological Scale of Depression, a similar set of questions regarding functional limitations and ADLs or IADLS,[6] and unlike the MEPS, the HRS asks about former smoking status as well as current status. Thus, we can include additional risk factors as a measure of health. The disadvantage of the HRS is that self-reported health is only characterized on a five-point scale: excellent, very good, good, fair, and poor.

To measure labor force status in the HRS, we use the question: "Are you working now, temporarily laid off, unemployed and looking for work, disabled and unable to work, retired, a homemaker, or what?" Individuals who were working, laid off, unemployed, or "partially retired" are coded "in the labor force". Individuals who described themselves as "retired" or "not in the labor force" are coded as "retired". Individuals self-reporting that they were disabled are included as "disabled", in addition to those who reported applying for or receiving Social Security Disability Insurance. Note that defining disability in this way likely yields an upper bound on rates of disability by age since some individuals may rationalize their decisions to exit

[6] Physical functional limitation measures include whether respondent has some difficulty with walking several blocks, sitting 2+ hours, rising from a chair, stopping/kneeling/crouching, carrying weights over 10 pounds, reaching/extending arms above shoulder, or pushing/pulling a large object. ADLs include five questions on whether respondents need help with dressing, walking across the room, bathing, eating, getting into or out of bed. IADLs indicate whether respondent has difficulty with using the telephone, managing money, taking medications.

the labor force by reporting they are disabled.

Data on labor force participation in the two surveys are presented in the first rows of Table 1. The share of individuals who are in the labor force declines rapidly between ages 57-61 and 65-69, falling by about half. In both data sets, the share retired increases commensurately. As expected, few people report that they are disabled past age 64, in large part because individuals eligible for full retirement benefits are no longer eligible for federal disability benefits. Officially, such individuals would be transferred onto retirement benefits, and so impaired individuals in those ages are more likely report themselves as retired.

Demographic averages for each survey are presented in Appendix Table A1. Both surveys are representative of the US population when weighted using survey weights.

3. The Self-Reported Health Status of Older Adults

We begin our empirical analysis by describing the age profile of self-reported health status. The remaining rows of Table 1 show health measures by age and survey. The 100 point scale of self-rated health in the MEPS shows virtually no change from ages 57-61 through age 69. It falls by only 1 point over these ages. Similarly, the share of individuals reporting "Fair" or "Poor" health in the HRS stays essentially flat over these ages.

Self reported measures of function change slowly over these ages as well. Although rates of ADL and IADL limitations increase in the MEPS from ages 57-61 to ages 65-69, less than 5 percent of people aged 65-69 in the MEPS have an ADL or IADL limitation. Under 15 percent of people aged 65-69 in the HRS have an ADL or IADL limitation. Thus, overall, health appears to remain fairly constant through the sixties.

As people enter their 70s, health starts to decline more rapidly. The thermometer rating

of health in the MEPS falls by 3 points from the late 60s to the 70s, and the share of the population in excellent or very good health in the HRS falls more rapidly after age 70 as well.

For our analysis, we care about health both overall and for different demographic groups. Accordingly, we move to a demographic decomposition. We describe groups separately by education (those attending college versus those with a high school degree or less education), which is determined early in life, in addition to gender and race/ethnicity (white non-Hispanic, black non-Hispanic, and Hispanic). Thus, the membership of the groups is determined well before the minimum age for our analyses.

Figures 1 and 2 show the averages of self-rated health over ages 51 to 74. Figure 1 shows health for men, and figure 2 shows health for women. Within each cell, we plot the average thermometer score at each age from the MEPS and the share of people in excellent, very good, or good health from the HRS.

There are clear differences in the level of health by gender, education and race/ethnicity. Within any gender and education group, average health for whites is higher than for blacks and for Hispanics. Similarly, the better educated report better health than the less educated, holding constant gender and race/ethnicity. The magnitude of the differences varies by group, with the largest gaps showing for white college attendees compared with blacks or Hispanics with less education. Scores for men and women reveal modestly better health for women, despite the significant longevity advantage for women.

Looking at the age profiles, we see again that self-reported health changes very little over ages 50-69. Among white, college educated women and men, for example, the health scale is virtually constant at 80 throughout the age range. Although the average health scale for less educated white women and men is slightly lower, between 70 and 74, the trend is also flat over

this age range. The data for blacks and Hispanics are noisier, but show similar patterns.

4. Estimating Work Capacity

In this section, we consider additional dimensions of health and examine how the multiple dimensions of health taken together are related to labor force participation. We then use these results to forecast what would happen to the fraction of people who would self-identify as in the labor force, disabled, or retired under a policy change that reduces the availability of current retirement benefits.

To understand work capacity, disability, and retirement, we estimate models for currently non-eligible people near age 62, specifically those aged 57-61. We model the three outcomes of labor force participation, retirement (R), and disability (D) using multinomial logit models. The probability of disability can be expressed as:

$$(1) \qquad Pr(Disabled)_i = \frac{exp(x_i'\beta_D)}{1+ exp(x_i'\beta_R)+exp(x_i'\beta_D)}$$

After estimating (1) on the population under age 62, we use the parameter estimates from the model and the independent variables from the 62-64 year old population to predict labor force status for people aged 62-64. Since we have the same independent variables for the older group as for the younger group, we can form this prediction at the individual level. We then average the predictions overall, and by gender, race/ethnicity, and education.

This analysis assumes that the health conditions and measures of functional status used in our models are similar for individuals 1 to 6 years apart in age. That is, reporting a health score of 80 means the same thing for a 64 year old as it does for a 59 year old.[7] This assumption is

[7] Van Doorslaer and Jones (2003) provide evidence supporting this assumption. They examine the relationship between a typical, categorical, self-reported health variable and a more objective index based on eight functional status questions. They find that the means and implied

problematic if individuals norm self-reported health according to their age group, or if the severity of a diagnosed condition differs by age in ways that are not captured by the health index or the functional limitations studied here.

Using the MEPS data, we estimate the models separately by sex. The health variables include a cubic function of the 100-point health scale, indicators for physical or mental limitations (such as any ADL or IADL limitations), sensory impairments, and diagnoses for common health conditions and risk factors, coded as shown in Table 1. The Mental Component Score is included as indicators for having a MCS in the lowest quintile (worst scores) and having a MCS between the 20^{th} and 49^{th} percentile of the distribution. A similar approach is used for the CES-D score (except a high score represents worse mental health). Underweight is combined with normal weight in the MEPS model because it is very rare in the MEPS sample. In addition to these health variables, as well as demographics like education, race, ethnicity, marital status, and Census region of residence (coded as in Appendix Table A1), all models control for year of interview. The HRS models are generally similar to the MEPS models, with a few exceptions. HRS models use indicators of self-reported health status (Very Good, Good, Fair, or Poor relative to Excellent) rather than the 100-point health scale, unavailable in the HRS. In addition, the HRS models include more detail along some dimensions such as the presence of additional health conditions, more detail on household composition, and economic indicators for an individual's occupation (blue collar, low skill services, versus other), health insurance coverage (for self, or spouse), and pension coverage (any versus none).

thresholds of the index within each self-reported health category are similar for two broad age groups: 18-44 and 45+.

Work Capacity Among Individuals 62-64

Before we present multinomial logit models of labor force status, we describe how labor force participation and self-reported disability vary by self-reported health status in Figures 3 (MEPS) and 4 (HRS). Figure 3 plots smoothed functions of labor force participation and disability based on a multinomial logit model estimating labor force status (disabled, retired, or working) as a cubic function of the 100 point health scale without other controls. The relationship between the thermometer scale of health status and disability rates is nonlinear, but generally speaking, a 10 point decline in the 100 point health scale accompanies a rise in disability of 2 to 5 percentage points near the top of the health scale, and closer to a 10 percentage point increase in disability as one moves below 60 on the health scale. Among 57-61 year olds in the HRS as well, there is a non-linear relationship between self-reported health and labor force participation. Participation is low for people with fair or poor health, and flattens out above that. The same is true, in the opposite direction, for reported disability. A notable finding in both data sets is that labor force participation and disability change very little over the top half of the health scales. This suggests that work capacity remains very high for the vast majority of older adults, given relatively high ratings of health in the MEPS and the HRS samples.

Appendix table A2 reports relative risk ratios from multinomial logit models of labor force status in the MEPS. The 100-point health scale has a strong association with self-reported disability, with a risk ratio of .62 for males and .65 for females for each 10 points on the linear health scale. Given the higher order terms, the relationship between the thermometer scale of health and labor force status is non-linear, as seen in the plot of unadjusted labor force participation, disability, and health scores in Figure 3.

Comparable multinomial logit results for the HRS population are reported in Appendix

table A3. Several indicators for health limitations, impairments, or conditions are strongly associated with self-reported disability. Being in poor self-rated health has a very large impact on reported disability, as do functional limitations and a variety of specific conditions.

The MEPS and HRS data both show that health variables are much less predictive for retirement than they are for disability. Functional limitations, ADLs or IADLs lead to a greater probability of retirement in the MEPS, but the effects are generally smaller than for disability, and only having multiple functional limitations is significant. Also in the MEPS data, none of the non-health variables are significantly associated with retirement for males. For females, college education is associated with lower retirement, as is being unmarried. Hispanics are more likely to be retired than non-Hispanics.

Figure 5 compares the simulated proportion of people aged 62-64 who are in the labor force or disabled with the observed percentage. This figure shows predictions for the MEPS and HRS samples; the numeric results for each are reported in Appendix table A4. Two patterns stand out. First, the predicted rise in labor force participation is large, exceeding 10 percentage points for most groups and 20 percentage points among some groups.

Second, the pattern for disability is quite variable by group. In the MEPS, the fraction of less educated white males who are disabled increases by 6 percentage points when faced with a the work incentives of 57 to 61 year olds – nearly a 70 percent relative increase.

The HRS results show little or no rise in disability rates among most groups, with the exception of black males and females in lower education groups, among whom disability rises by 3 to 5 percentage points, with wide confidence intervals around these estimates. For several groups in the HRS, the models predict no increase in disability among 62 to 64 year olds. This is predominantly due to low rates of reported ADLs/IADLs at these ages. Overall, despite some

large relative increases in self-reported disability, the share of individuals likely to report they are disabled would remain very low, less than 10 percent among college attendees, and 20 percent or lower among the remaining individuals. Given the large standard errors around these estimates, they should be interpreted with caution. However, even the upper bound on our confidence intervals suggests modest increases in the percent disabled when faced with the stronger work incentives of 57 to 61 year olds.

Projected earnings among individuals simulated to be in the labor force

An important question for individuals who would delay retirement is what they might earn were they to work. To examine this question, we conduct an exercise similar to the one for labor force status (with a related interpretation – as a measure of earnings capacity, *not* a predicted market outcome). We use the detailed information on earnings in the HRS to simulate the earnings of non-working individuals aged 62 to 64 based on the earnings of workers 57-61. Our model is similar to equation (1), except that the dependent variable is the earnings of current workers. We estimate these models using generalized linear models with a log link function to account for the log normal distribution of earnings while permitting us to use model parameters to predict earnings, rather than the natural log of earnings. We then predict earnings for each individual aged 62-64 in the older population, accounting for age differences in earnings among 62-64 year olds compared with slightly younger workers.[8]

[8] To compare simulated earnings with actual earnings of people aged 62-64, we need to adjust for average earnings differences as individuals age. We make such an adjustment using the ratio of average earnings of working 62-64 years olds to the predicted earnings based on the model from 59-61 year olds. For estimates reflecting predicted earnings and the difference between predicted earnings of non-workers and actual earnings of workers, we report bootstrapped standard errors.

To compare predicted earnings of non-workers likely to be affected by changing work incentives to actual earnings of currently employed workers age 62-64, we take a weighted average of the predicted earnings for non-workers, where the weight for each non-worker is his/her predicted probability of entering the labor force from our earlier simulation. We focus these results on less educated workers in each sex, race, and ethnicity group, since these potential workers tend to have fewer labor market prospects. All earnings are expressed in constant 2002 dollars based on the Consumer Price Index. Effectively, we ask the question, "Would workers who are induced to stay in the labor force because of a change in work incentives have lower earnings capacity (based on their health) than individuals who currently work at these ages?"

On the basis of health and demographic information, the answer, shown in Table 2, is "Yes." The table shows earnings comparisons for the less educated groups, for whom these differences would be the greatest concern.[9] Average earnings for current 62-64 year-old low education workers (row 1) range from $17,000 to $33,000, depending on race and gender. The predicted earnings of those who may be induced to work under different work incentives are generally lower (the second row of the table). As the third row shows, these predicted earnings are as much as 19 percent lower than the actual earnings of those currently in the labor force for most sex and race groups among less educated workers.

Average earnings are lower for women than for men, but the difference in predicted earnings of those not in the labor force is roughly 15-20 percent for both genders. Thus, the potential earnings consequences of this change would be significant. The lower predicted earnings for non-participants may offer some insight into why these workers have chosen early retirement instead of labor market participation.

[9] We find similar results for more educated groups.

5. Conclusion and Discussion

In this paper, we simulated the work capacity of individuals in age groups targeted by policies that limit access to Social Security benefits, such as a rise in the age of eligibility for early benefits. Specifically, we examined the labor force participation and self-reported disability of 62-64 year olds. Our primary output is work capacity – which reflects what the people in this age group might be able to do using only the fact that their health is different from those of younger aged individuals.

We find that until age 70, health declines very slowly, and thus work capacity is large. Our results suggest that, based upon the health of today's young retirees, 15 to 20 percent more individuals could work than currently do among whites, and about 10 to 20 percent more blacks could work than currently do. However, rates of new disability are predicted to increase. We estimate that some groups could experience no increase in self-reported disability, while in other low education groups, self-reported disability would increase by 4-6 percentage points.

To put our findings in context, consider the drop in labor force participation between 1970 and 1994 (Burkhauser, Couch and Phillips 1996). Between 1970 and 1994, the percentage of 63-year old men in the labor force fell by 24 percentage points. This is similar in magnitude to our estimate of additional work capacity assuming that only health status changed across ages. Thus, our analysis suggests that work capacity is just as high now as actual labor force participation was several decades ago.

On the downside, however, there are significant disparities in these findings across groups, and the earnings capacity of less educated older adults who may be induced to work with changing work incentives, such as reduced access to early Social Security benefits, is significantly lower compared with current workers. The simulated rise in disability is large for

some groups who never attended college, although potential changes in disability were measured with substantial error. Nevertheless, the potential rise in disability suggests the need for alternative sources of income among older workers, especially older workers facing higher risk of disability or barriers to work,

Despite these concerns, our results offer reasons to be cautiously optimistic about the ability for many older Americans to continue working beyond current retirement ages. We find that the good health enjoyed by individuals aging throughout their 60s implies a tremendous potential for labor force participation. Even among those groups that would observe the highest disability rates under a policy that delayed early retirement until age 65, the majority of individuals aged 62 to 64 could work, based on their reported health status. If workers translate this good health, and a new norm of providing public retirement benefits at older ages into longer working lives, such a shift has the potential to both reduce the costs of the Social Security program and to increase revenue raised through payroll and income taxes that would not be realized in the absence of such a policy change.

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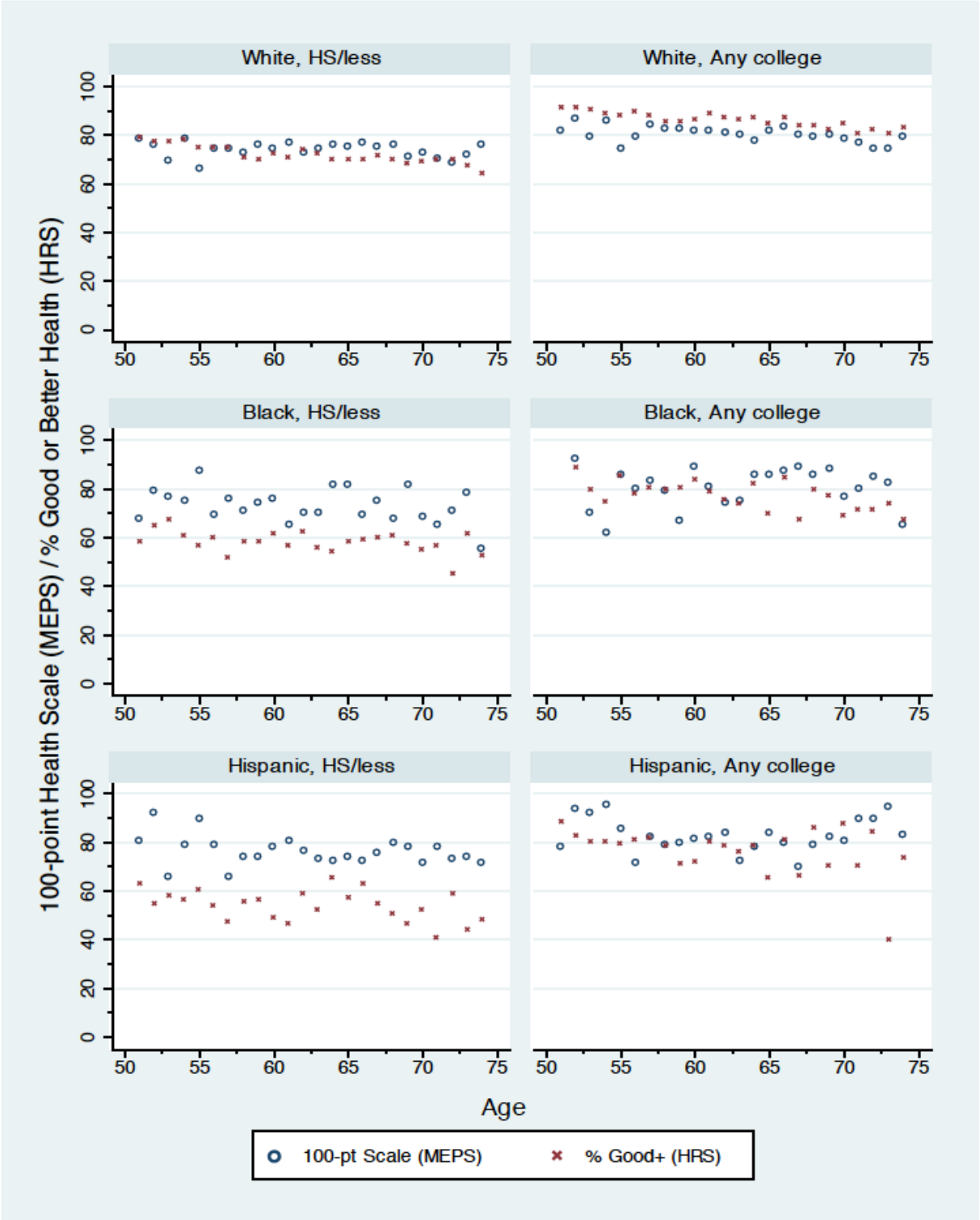
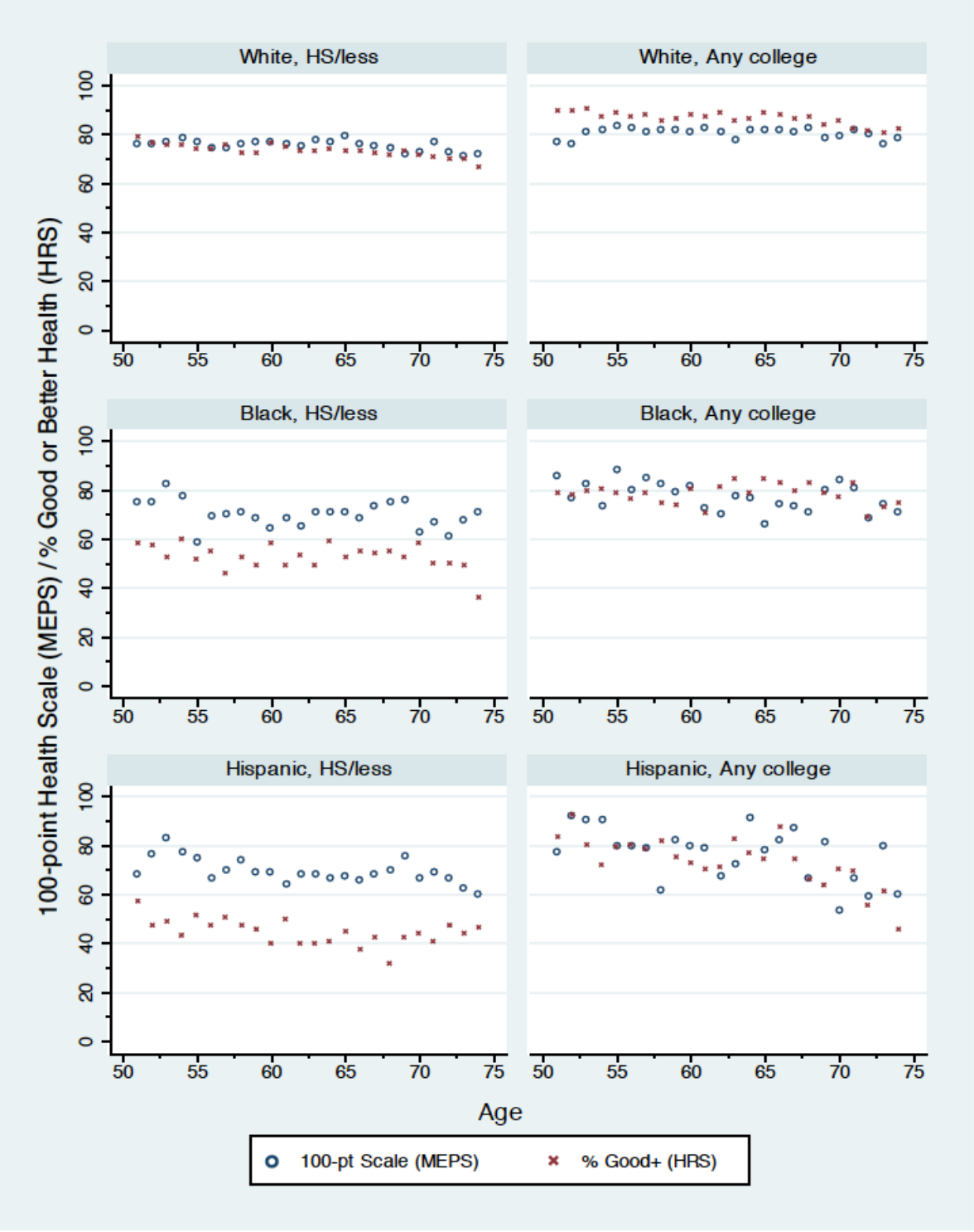
Figure 1: Average Health Scale in the MEPS and HRS, Males



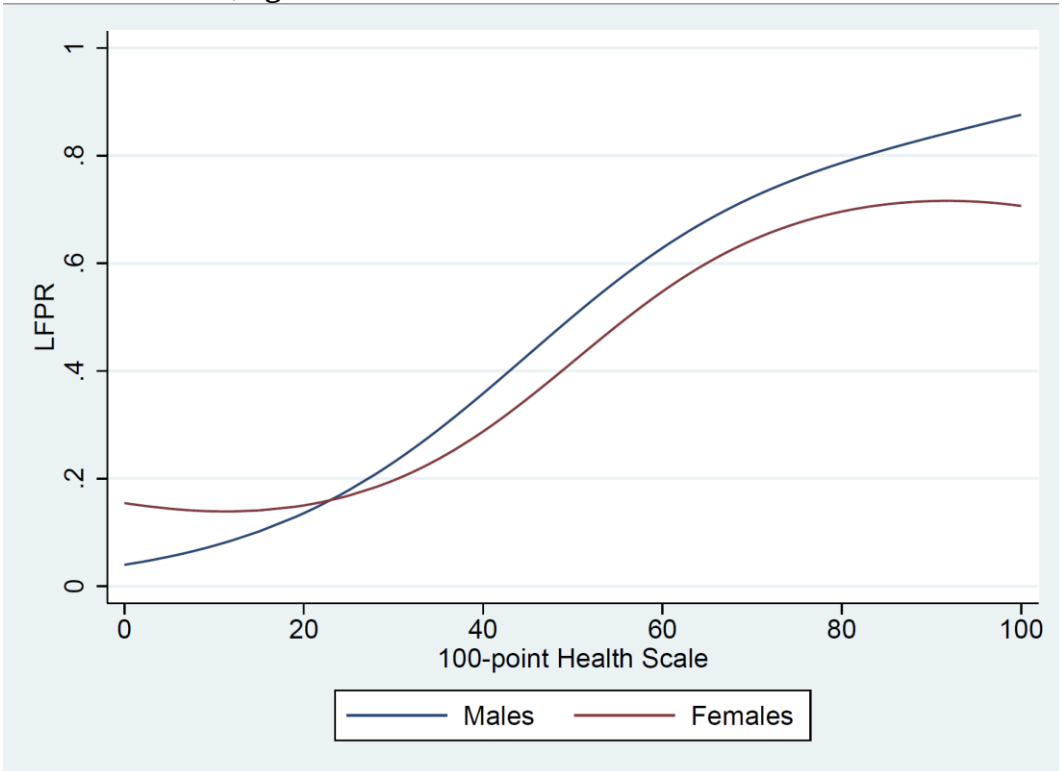
The chart shows the average thermometer score by age and demographic group in the MEPS, and the share of people reporting good, very good, or excellent health in the HRS (age 51-74). All data are weighted to national totals.

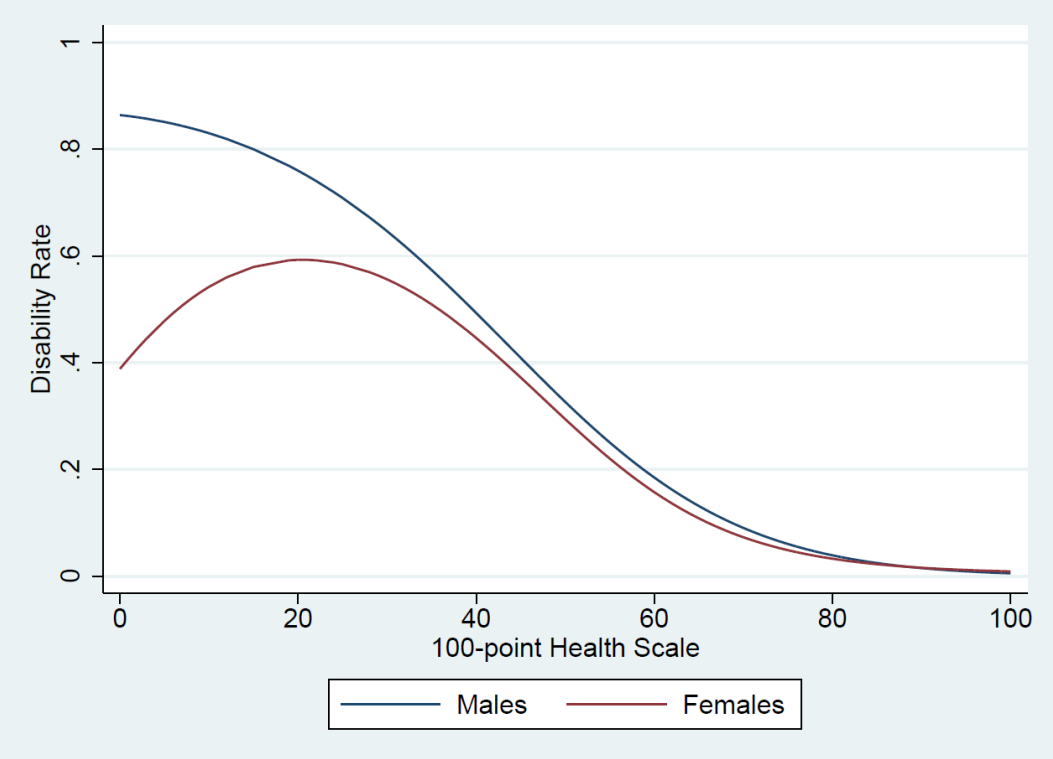
Figure 2: Average Health Scale in the MEPS and HRS, Females



The chart shows the average thermometer score by age and demographic group in the MEPS and the share of people reporting good, very good, or excellent health in the HRS (age 51-74). All data are weighted to national totals.

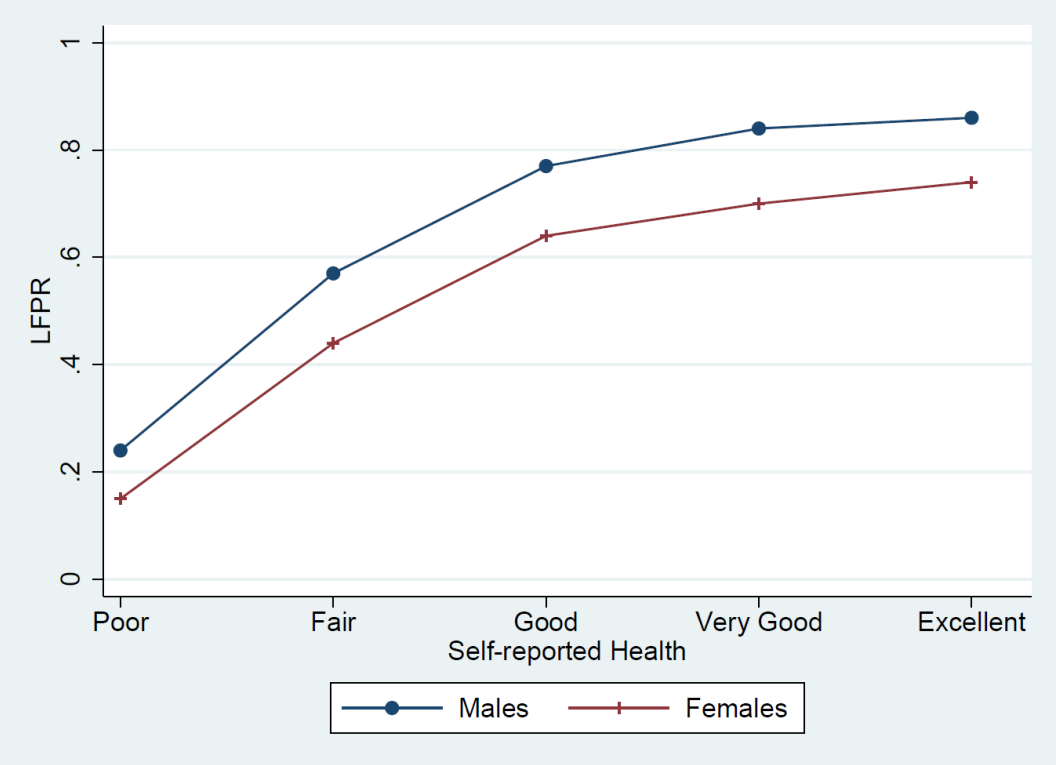
Figure 3: Probability of Labor Force Participation and Disability by Health Status in the 2000-2003 MEPs, ages 57-61

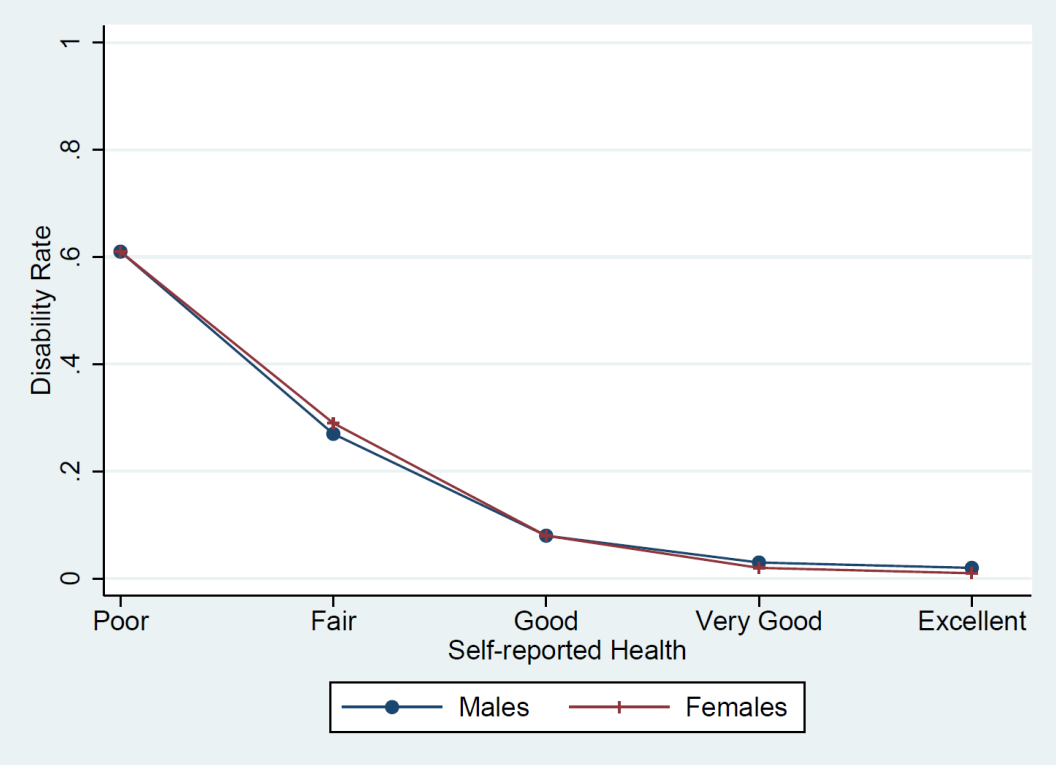




The chart shows rates of labor force participation and disability by health status from a multinomial logit model of labor force status on a cubic function of the health scale.

Figure 4: Probability of Labor Force Participation and Disability by Self-Reported Health Status in the HRS, ages 57-61

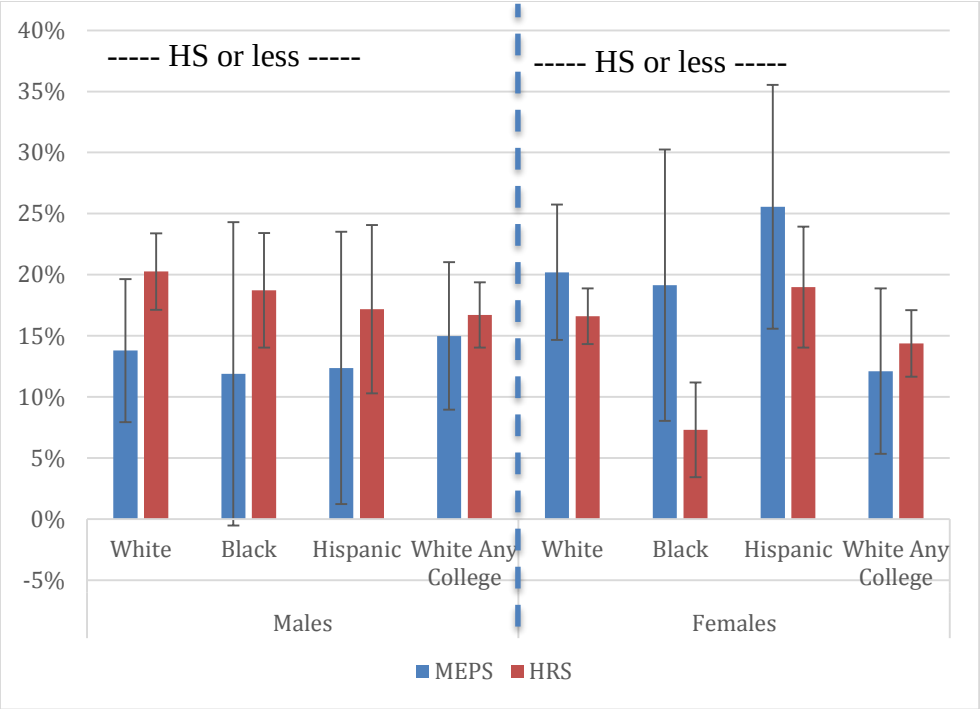




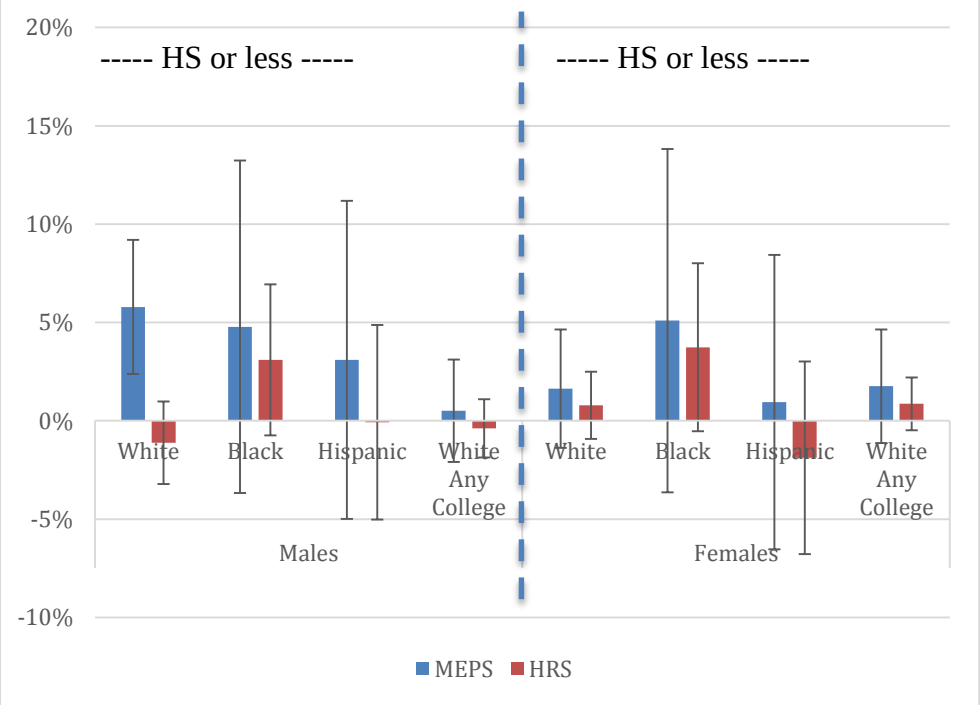
The chart shows rates of labor force participation and disability by health status.

Figure 5: Change in Work Capacity for Population Aged 62-64

(a) Change in Probability of Being in the Labor Force*



(b) Change in Probability of Being Disabled*



*The figure shows the predicted increase in labor force participation and self-reported disability for people aged 62-64 based on the relationship between health and labor force status for people aged 57-61 applied to the actual health and demographics of 62-64 year olds.

Table 1: Descriptive Statistics for Labor Force Status and Health

	MEPS, 2000-2003				HRS, 1994-2008			
	57-61	**62-64**	**65-69**	**70-74**	**57-61**	**62-64**	**65-69**	**70-74**
OUTCOMES								
Labor force status								
In labor force	0.70	0.52	0.33	0.17	0.67	0.47	0.34	0.22
Disabled	0.09	0.07	0.05	0.04	0.12	0.13	0.08	0.04
Retired	0.22	0.40	0.62	0.79	0.21	0.40	0.58	0.74
INDEPENDENT VARIABLES								
Self-reported health								
100-point scale	78 (18)	77 (19)	77 (18)	74 (19)	---	---	---	---
Excellent	---	---	---	---	0.16	0.14	0.13	0.10
Very good	---	---	---	---	0.33	0.33	0.32	0.31
Good	---	---	---	---	0.28	0.31	0.32	0.33
Fair	---	---	---	---	0.16	0.16	0.16	0.19
Poor	---	---	---	---	0.07	0.06	0.06	0.07
Limitations								
ADLs	0.01	0.02	0.02	0.03	0.11	0.11	0.11	0.12
IADLs	0.03	0.04	0.04	0.07	0.04	0.04	0.04	0.04
Vision impairment	0.07	0.08	0.08	0.09	0.18	0.17	0.17	0.18
Hearing impairment	0.12	0.11	0.15	0.18	0.15	0.16	0.19	0.22
Cognitive limitation	0.04	0.05	0.04	0.07	0.23	0.25	0.27	0.27
Social limitation	0.06	0.07	0.06	0.08	---	---	---	---
1 Physical limitation	0.02	0.02	0.02	0.03	0.17	0.18	0.19	0.20
>1 Physical limitation	0.13	0.16	0.17	0.23	0.38	0.40	0.41	0.46
SF-12 Mental Component Score	52 (9)	52 (9)	53 (9)	52 (9)	---	---	---	---
CES-D depression (0-8)	---	---	---	---	1.45 (2.0)	1.29 (1.9)	1.27 (1.8)	1.36 (1.8)
Pain	0.58	0.58	0.61	0.68	0.22	0.21	0.21	0.21

Table 1: Descriptive Statistics for Labor Force Status and Health

	MEPS, 2000-2003				HRS, 1994-2008			
	57-61	**62-64**	**65-69**	**70-74**	**57-61**	**62-64**	**65-69**	**70-74**
Conditions								
Diabetes	0.12	0.12	0.16	0.19	0.14	0.16	0.18	0.18
Asthma / Lung disease*	0.10	0.10	0.09	0.09	0.07	0.08	0.10	0.10
High blood pressure	0.41	0.48	0.54	0.57	0.44	0.47	0.53	0.57
Heart condition	0.15	0.18	0.24	0.30	0.15	0.18	0.21	0.27
Stroke	0.03	0.05	0.07	0.09	0.04	0.05	0.05	0.07
Psychiatric disorder	---	---	---	---	0.16	0.15	0.13	0.11
Cancer	---	---	---	---	0.08	0.11	0.13	0.17
Arthritis	---	---	---	---	0.47	0.55	0.60	0.64
Back pain	---	---	---	---	0.34	0.33	0.33	0.33
Risk Factors								
Underweight	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01
Overweight	0.40	0.40	0.42	0.38	0.39	0.40	0.40	0.41
Obese	0.28	0.28	0.26	0.25	0.31	0.29	0.28	0.24
Former smoker	---	---	---	---	0.40	0.44	0.47	0.49
Current smoker	0.22	0.19	0.16	0.12	0.20	0.18	0.14	0.10
N	4,478	2,252	3,197	2,902	18,233	11,063	15,345	11,351

Table 2: Average Earnings for Workers Age 62-64 and Predicted Earnings of Non-workers (Respondents reporting 12 or fewer years education)

	Males			Females		
	White	Black	Hispanic	White	Black	Hispanic
Earnings of current workers	$ 33,282	$ 30,958	$ 26,261	$ 22,382	$ 17,481	$ 17,642
(Standard Error)	(1,031)	(1,596)	(1,684)	(697)	(875)	(1,431)
Predicted earnings, nonworkers	30,064	25,375	25,807	18,136	14,525	14,276
(Standard Error)	(1,398)	(1,797)	(3,124)	(933)	(1,475)	(1,950)
Workers-nonworkers	3,218	5,583	454	4,247	2,956	3,366
(Standard Error)	(1,212)	(1,745)	(2,177)	(892)	(1,050)	(1,757)
% difference	10%	18%	2%	19%	17%	19%

Note: Earnings are expressed in constant 2002 dollars. Standard errors of predicted earnings for non-workers and the difference between earnings of workers and non-workers were obtained using bootstrapping techniques, based on parameter estimates from generalized linear models of earnings for workers aged 62-64. The predicted wage for current non-workers is weighted by the predicted probability of being in the labor force (based on the work capacity models). The difference in median earnings observed – predicted was 2,664 (9%), 8,853 (32%), and 1,360 (6%) for male whites, blacks, and Hispanics, respectively. For women the same figures are: 4,600 (25%), 4,536 (33%) and 5,015 (39%).

APPENDIX

Table A1: Descriptive Statistics for Demographic Variables

	MEPS, 2000-2003				HRS, 1994-2008			
	57-61	**62-64**	**65-69**	**70-74**	**57-61**	**62-64**	**65-69**	**70-74**
Race/ethnicity (%)								
White	80.5	80.5	81.7	83.2	85.6	87.1	88.3	89.4
Black	8.4	9.3	8.2	7.5	9.8	9.0	8.4	7.5
Hispanic	6.3	6.2	6.6	5.7	7.2	6.8	6.1	5.3
Education (%)								
Some college	49.4	43.9	39.2	35.5	50.7	44.4	42.8	39.4
Marital status (%)								
Married	71.8	68.1	68.2	64.0	68.8	67.3	67.0	63.2
Divorced/Separated	16.7	15.2	13.0	9.4	16.7	15.1	12.3	9.8
Widowed	6.6	11.2	15.5	23.7	6.6	10.2	14.1	21.5
Never married	5.0	5.4	3.3	2.8	3.9	3.8	3.5	3.2
Census region (%)								
Northeast	19.1	19.2	20.0	19.7	16.9	17.7	18.5	18.7
Midwest	22.2	25.6	22.5	22.7	25.4	25.1	24.8	26.3
South	36.6	35.4	39.0	37.5	38.6	37.3	36.3	34.3
West	22.1	19.8	18.5	20.0	19.1	19.9	20.4	20.6
N	4,478	2,252	3,197	2,902	18,233	11,063	15,345	11,351

Table A2: Relative Risk Ratios for Labor Force Status in the 2000-2003 MEPS

	Ages 57-61			
	Males		Females	
	Disabled	Retired	Disabled	Retired
100-point health scale (/10):				
linear term	0.62***	0.90	0.65***	0.97
squared term	0.99	0.96	1.03	1.02
cubic term	1.00	0.99	1.01	1.00
Physical functional limits				
Exactly 1 limitation	2.60**	0.90	1.87	2.07
More than 1 limitation	3.37***	1.72**	5.26***	1.56**
Receives help with any ADL	1.44	1.79	1.46	1.04
Receives help with any IADL	2.56	2.17	1.87	2.30*
MCS: Bottom 20-49%	1.10	0.74*	0.89	0.83
MCS: Bottom quintile	1.71*	0.88	1.82*	1.16
Hearing Impairment	0.86	1.29	1.74	1.61**
Vision Impairment	1.40	1.27	1.67*	1.17
Moderate/Severe Pain	3.37***	0.95	1.91*	0.80
Cognitive Lim.	1.49	0.98	1.82	1.35
Social Lim.	3.97***	2.85***	2.48**	1.93**
Diabetes	1.03	0.62*	1.99**	1.70**
Asthma	2.00*	1.20	1.09	1.00
High BP	1.32	0.91	1.72**	1.13
Heart condition	2.22***	1.68**	1.06	0.80
Stroke	3.00*	0.88	2.46*	1.39
Overweight	0.66	1.18	0.58	0.97
Underweight	0.61	0.94	0.76	0.79
Currently smokes	2.47***	1.23	0.86	0.91
< High school degree	2.07**	0.90	4.78***	1.44*
Some college	0.84	1.34	0.74	0.86
College degree or more	0.60	0.96	1.06	0.71*
Black, non-Hispanic	1.80	1.29	0.79	0.77
Hispanic ethnicity	1.92	0.75	0.68	1.26
Other Nonwhite race	1.54	0.70	2.07	1.16
Metropolitan Area	2.10**	1.08	0.73	0.96
Divorced, separated or widowed	2.24***	0.99	0.82	0.31***
Never married	4.94***	1.72	3.33**	0.51*
Observations	2,117		2,361	

Risk ratios reflect multinomial logit models of reporting disability or retirement, relative to being in the labor force. Models include dummies for region and year. MCS is the Mental Component Score of the SF-12. p-values: *p<.1; ** p<.05; *** p<.01

Table A3: Relative Risk Ratios for Labor Force Status in the HRS

	Ages 57-61			
	Males		Females	
	Disabled	Retired	Disabled	Retired
Self-reported Health (Excellent is ref)				
Very Good	0.98	1.03	0.84	1.05
Good	1.37	1.06	1.84*	0.96
Fair	2.70***	1.41*	3.96***	0.97
Poor	6.12***	2.58***	11.65***	1.92***
Limitations in Activity and Function				
Physical functional limits				
Exactly 1 limitation	2.10***	1.08	1.35	1.12
More than 1 limitation	4.95***	1.40***	4.64***	1.05
Any ADL limitations	1.90***	1.13	2.66***	1.87***
Any IADL limitations	1.98***	1.44	1.82**	1.13
CES-D: top 51-80%	0.91	1.03	1.30*	1.09
CES-D: top quintile	0.76	0.77	1.18	1.00
Hearing Impairment	0.81	1.27*	0.86	0.80*
Vision Impairment	1.02	0.65***	0.99	1.04
Moderate/Severe Pain	1.26	1.05	1.40**	0.98
Fair/Poor Memory	1.13	0.91	0.88	1.17*
Conditions				
Heart disease	2.14***	1.49***	1.78***	1.37**
Lung disease	1.47	0.77	1.24	1.21
Stroke	2.26**	1.83**	1.79*	1.06
Psychiatric disorder	2.21***	1.07	2.00***	1.39***
Cancer	1.11	1.20	1.34	1.33**
Hypertension	1.28	1.18	0.67***	1.06
Arthritis	1.24	0.97	1.31*	1.19**
Diabetes	1.03	0.90	1.56***	1.35**
Back pain	1.03	1.23*	1.04	0.89
Risk factors				
Underweight	2.15	0.41	0.87	1.03
Overweight	0.77	0.91	0.88	1.02
Obese	0.89	1.05	1.31	0.97
Former smoker	1.59**	1.12	0.97	1.04
Current smoker	1.36	1.25	1.17	0.90

Table A3 (continued)

	Ages 57-61			
	Males		**Females**	
	Disabled	**Retired**	**Disabled**	**Retired**
Demographics				
< High school degree	0.94	0.57***	1.30	1.48***
Some college	0.54***	0.79	0.80	0.89
College degree or more	0.69	0.79	0.72	0.97
Hispanic ethnicity	0.45**	1.01	0.68	0.97
Black, non-Hispanic	2.06***	1.19	2.38***	1.15
Other Nonwhite race	1.22	0.80	1.07	1.46**
Household composition				
Single	1.15	0.84	0.78	0.45***
Married, working spouse	0.61***	0.35***	0.35***	0.41***
2 non-married adults in house	1.46	0.50**	1.10	0.87
3-4 household members	1.10	0.85	0.74**	0.90
4+ household members	0.75	0.60*	0.70	0.87
Spouse's Relative Age	1.00	1.00	1.01	1.03***
Economics				
Blue collar, longest job	1.07	1.12	1.06	0.60***
Low-skilled services, longest	1.19	1.42	0.49***	0.43***
Has own health insurance	0.21***	0.82	0.21***	0.40***
Health insurance from spouse	0.71	1.16	0.66**	1.75***
Covered by a pension	0.40***	0.53***	0.24***	0.24***
Observations	7,632		10,601	

Risk ratios reflect multinomial logit models of reporting disability or retirement, relative to being in the labor force. Models include dummies for census region and survey wave. p-values: *p<.1; ** p<.05; *** p<.01.

Table A4: Change in Labor Force Status (percentage point change)

			In labor force	Disabled
MEPS data				
Men	HS or less	White	14	6
		Black	12	5
		Hispanic	12	3
	Some college	White	15	1
Women	HS or less	White	20	2
		Black	19	5
		Hispanic	26	1
	Some college	White	12	2
HRS data				
Men	HS or less	White	20	-1
		Black	19	3
		Hispanic	17	0
	Some college	White	17	0
		Black	12	-3
		Hispanic	17	-10
Women	HS or less	White	17	1
		Black	7	4
		Hispanic	19	-2
	Some college	White	14	1
		Black	23	-6
		Hispanic	23	-9