Elderly Labor Supply: Work or Play?

Steven Haider*
David Loughran

CRR WP 2001-04
September 2001

Center for Retirement Research at Boston College
550 Fulton Hall
140 Commonwealth Ave.
Chestnut Hill, MA 02467
Tel: 617-552-1762 Fax: 617-552-1750
http://www.bc.edu/crr

*Steven Haider and David Loughran are both Associate Economists at RAND. The research reported herein was performed pursuant to a grant from the U.S. Social Security Administration (SSA) to the Center for Retirement Research at Boston College (CRR) funded as part of the Retirement Research Consortium. This grant was awarded through the CRR's Steven H. Sandell Grant Program for Junior Scholars in Retirement Research. The opinions and conclusions are solely those of the authors and should not be construed as representing the opinions or policy of the SSA or any agency of the Federal Government or of the CRR.

© 2001, by Steven Haider and David Loughran. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

About the Sandell Grant Program

This paper received funding from the *Steven H. Sandell Grant Program for Junior Scholars in Retirement Research*. Established in 1999, the Sandell program's purpose is to promote research on retirement issues by junior scholars in a wide variety of disciplines, including actuarial science, demography, economics, finance, gerontology, political science, psychology, public administration, public policy, sociology, social work, and statistics. The program is funded through a grant from the Social Security Administration (SSA). Each grant awarded is up to $25,000. In addition to submitting a paper, successful applicants also present their results to SSA in Washington, DC. For more information on the Sandell program, please visit our web site at *http://www.bc.edu/bc_org/avp/csom/executive/crr/sandellguidelines.shtml*, send e-mail to crr@bc.edu or call Elizabeth Lidstone at (617) 552-1677.

About the Center for Retirement Research

The *Center for Retirement Research at Boston College*, part of a consortium that includes a parallel center at the University of Michigan, was established in 1998 through a 5-year $5.25 million grant from the Social Security Administration. The goals of the Center are to promote research on retirement issues, to transmit new findings to the policy community and the public, to help train new scholars, and to broaden access to valuable data sources. Through these initiatives, the Center hopes to forge a strong link between the academic and policy communities around an issue of critical importance to the nation's future.

Center for Retirement Research at Boston College
550 Fulton Hall
140 Commonwealth Ave.
Chestnut Hill, MA 02467
phone: 617-552-1762 fax: 617-552-1750
e-mail: crr@bc.edu
http://www.bc.edu/crr

Affiliated Institutions:

Massachusetts Institute of Technology
Syracuse University
The Brookings Institution
National Academy of Social Insurance
Urban Institute

Abstract: Approximately 15 percent of individuals over the age of 65 are employed. Due to the apparent reversal in the trend toward early retirement and the aging of the U.S. population, these individuals are becoming an increasingly important part of the labor force. However, very little research has examined labor market behavior in this population. In this paper, we examine a series of questions in an attempt to better understand why the elderly continue to work. Our results indicate that labor supply is concentrated among the most educated, wealthiest, and healthiest elderly. Despite this, we find that the wages of the elderly are low both relative to younger populations and relative to the wages they earned when they themselves were young. Among individuals over the age of 70, we find that changes in health status dominate labor market transitions. Overall, our findings suggest that non-pecuniary considerations play an important role in determining elderly labor supply decisions.

JEL Classification: J14, J22

1. Introduction

The aging of the U.S. population, concerns over the long-term solvency of Social Security and Medicare, and recent data availability have sparked much research into the labor supply of older individuals. Much of this research has focused on individuals approaching traditional retirement ages of 55-65. Very little research, though, has considered the labor supply of individuals over the age of 65, a population we refer to here as the elderly.

Many important questions arise about the labor supply of the elderly. For example, to what extent are the elderly working because of financial circumstances, perhaps because of negative shocks to wealth or unexpected expenditures such as those related to health care for a family member? Do rising labor force participation rates among the elderly provide further evidence that there exist important holes in the safety net for the elderly? On the other hand, to what extent do the elderly choose to work because they have jobs that allow them to continue working on their own terms? Does a guaranteed annuity income make the elderly more responsive to non-pecuniary aspects of employment? In other words, is work closer to leisure (or play) for the elderly?

The apparent reversal of the long-run trend toward earlier retirement coupled with the general aging of the U.S. population make finding answers to such questions increasingly important. Currently, less than three percent of the U.S. labor force is over age 65. Demographic pressures alone will raise that percentage in coming decades. Reflecting these demographic pressures and years of tight labor markets, the popular press is now filled with stories about the courting of older workers by U.S. employers.[1] The issue has also inspired a series of reports arguing that many public and private policies pose serious barriers to work for the elderly and efforts should be made to eliminate them given the importance to the U.S. economy of maintaining a sufficiently large and well trained workforce [CED 1999; Knapp and Muller 2001]. Concern over this issue has been sufficiently great to warrant hearings in the U.S. Senate on what can be done at the federal level to reduce barriers to work among the elderly.[2] The recent repeal of the Social Security earnings test for individuals ages 65-69 was motivated at

[1] For example, see "Reversing Decades-Long Trend, Americans Retiring Later in Life," *New York Times,* February 26, 2001.

[2] "Now Hiring: The Rising Demand for Older Workers" Hearing before the Special Committee on Aging [U.S. Senate 2000].

least in part by a concern that this rule leveled an unfair penalty on older workers unnecessarily reducing their labor supply.

The labor supply decisions of the elderly are driven by a unique set of circumstances. Perhaps most importantly, the overwhelming majority of the elderly receives or is eligible to receive some level of guaranteed annuity income, whether it is from Social Security, Supplemental Security Income (SSI), or private sources. Given access to this unearned income, we might expect the labor supply of the elderly, especially the liquidity constrained, to exhibit different responses to financial incentives and job characteristics than do younger individuals. The elderly are also much more likely to suffer both acute and chronic episodes of poor health than younger populations.

Understanding what motivates the elderly to continue working will be an important ingredient in formulating programs and policies aimed at improving their financial security and general well being. For example, if labor supply is mainly concentrated among the wealthy and is strongly related to non-pecuniary aspects of employment, then we can expect changes in Social Security policy that change the marginal tax rates on wage income to have little impact on labor supply. Some laws like the Employee Retirement Income Security Act (ERISA), the Age Discrimination in Employment Act (ADEA), and Americans with Disabilities Act (ADA) designed to protect workers from discrimination might actually cause employers to lower their demand for elderly workers. Finally, an important goal of many social programs for the elderly is to alleviate poverty and generally ease life at older ages. It is of considerable interest to know, then, to what extent the elderly work out of financial necessity.

In this paper, we directly examine three questions about elderly labor force participation as a first step in beginning to understand what drives labor supply in this population: Who among the elderly works, what are their job characteristics, and which elderly exit the labor force? We answer these questions relying on three data sets, the annual March demographic supplements to the Current Population Survey (CPS), the Health and Retirement Study (HRS), and the Asset and Health Dynamics Among the Oldest Old (AHEAD).

Our first empirical finding is that the labor supply of the elderly is concentrated among the healthiest, wealthiest, and most educated individuals, and yet they earn very low wages. Nearly 75 percent of individuals ages 70 and above earn wages in the bottom quintile of the overall wage distribution of those ages 50-61. Also of note is the fact that the working elderly

report a substantial level of flexibility in their work schedules. We take these simple facts supplemented with additional panel analyses as evidence that non-pecuniary factors dominate the labor supply decisions of the elderly. The elderly are particularly willing to purchase jobs that they enjoy and allow them the flexibility they desire at the expense of low financial returns. This is consistent with statements commonly made by older workers in the press that they work because they enjoy work and it contributes to their physical and mental well-being.[3] We find little evidence that the elderly accept low hour/low-wage offers because of employer constraints. These conclusions, though, are based largely on the observed behavior of the currently working elderly. We can provide only limited evidence about the labor supply decisions of those individuals who have already left the labor force. It is possible that this population responds more strongly to the financial returns to work than those we observe currently working. Future research will need to address this sample selection issue more carefully.

The rest of the paper is organized as follows. In Section 2 we review the small literature on the determinants of elderly labor supply. Section 3 describes our data. Sections 4 and 5 then provide answers using cross-sectional data to the two questions set out above: Who among the elderly works and what are their job characteristics? We supplement these cross-sectional analyses with panel analyses of labor market transitions in Section 6. We discuss our results and conclude in Section 7.

2. Background

The growing importance of the elderly in the U.S. workforce is the product of two well-known trends, the aging of the U.S. population and the leveling off of the long-term decline in male labor force participation at older ages. Currently, individuals ages 65 and above account for 13 percent of the U.S. population; by 2025 this percentage is projected to rise to 19 percent [U.S. Census 2000]. Along with general aging, the long-run trend toward earlier retirement in this century slowed considerably in the 1980s and some argue may have reversed itself in the 1990s, especially for males [Quinn 1999; Purcell 1999]. By some estimates these two trends together imply the elderly will account for more than 5 percent of the total U.S. workforce in 2025 [Fullerton 1999].

[3] See, for example, "To Be Old, Gifted and Employed Is No Longer Rare", *New York Times* January 14, 2001.

The long-run decline in male labor force participation at older ages is the subject of an enormous literature and, while there is some consensus that much of it must be attributable to increases in real wealth and family income, many believe also that the advent of social programs for the elderly like Social Security and Medicare have played a role.[4] The recent leveling off and possible reversal of this long-run decline in male labor force participation is the subject of considerable debate with researchers attributing it to a variety of factors including general economic conditions, changes in Social Security rules, the end of mandatory retirement, the shift away from defined benefit pension plans in the private sector, improving health, and a shift toward a more service oriented economy [Quinn 1999; Costa 1999]. There is no consensus whether this leveling off represents a temporary or more permanent shift in the labor force participation rates of older individuals.

Only a few studies have directly examined the labor force participation of the elderly. Iams (1987) finds that new Social Security beneficiaries in the first wave of the New Beneficiary Survey (NBS) tend to work fewer hours and for lower wages than they did prior to receiving benefits. Iams also finds that individuals who changed jobs following benefit receipt tend to move into service-oriented jobs. Using the National Longitudinal Survey (NLS) of Older Men, Parnes and Sommers (1994) find that the probability of work among men ages 68 and older in 1989 is strongly correlated with good health and an individual's work ethic and attitudes toward retirement measured in earlier waves of the NLS. Parnes and Sommers also report a positive correlation between educational attainment and labor force participation and negative correlation between non-labor income and labor force participation in this population. Pienta, Burr, and Mutchler (1994) focus on elderly women and the strong positive correlation between their labor force participation early and later in life. A positive correlation between health and labor force participation is also evident among individuals approaching traditional retirement ages [Bound, et al 1998; Benitez-Silva 2000].

Several studies have demonstrated that job characteristics affect the ability of older individuals to remain in the workforce. For example, a number of studies show retirement ages are lower for individuals who work in physically demanding occupations [Holden 1988; Gustman and Steinmeier 1986; Hayward and Grady 1990]. Given the long-term shift in the U.S. economy toward less physically demanding occupations, it is not clear how important this

[4] See Hurd (1990) for a review of this lengthy literature.

kind of impediment to work at older ages will continue to be. There is little evidence in general that suggests older workers are less productive in their work activities [Mitchell 1990]. A survey of employer attitudes found that employers rate older workers above average in terms of experience, judgment, commitment to quality, and attendance and punctuality [CED 1999, p. 29]. The same survey found, though, that older workers exhibit less flexibility and adaptability.

A variety of public programs and laws affect the incentive to work at older ages. Social Security is perhaps the most obvious, making available a guaranteed annuity income for the vast majority of Americans beginning as early as age 62. The large spikes in retirement hazards at the early and normal retirement ages of 62 and 65 point to a potentially strong role for Social Security in reducing labor supply among older individuals [Lumsdaine, Stock, and Wise 1995]. There is mixed evidence that other features of the Social Security system like the earnings test which, until recently repealed, reduced Social Security benefits for individuals receiving more than a relatively small amount of labor income, or taxation of Social Security benefits above certain income levels reduce elderly labor supply [Gruber and Orszag 2000; Friedberg 1998].[5]

ERISA and Medicare may also affect the demand for elderly workers, although, again, there is little empirical evidence on this question. ERISA, enacted in 1974, sets minimum standards for pension plans in private industry. The law explicitly requires firms to extend pension benefits to all employees working more than 1,000 hours per year. Extending pension coverage, especially defined benefit coverage, to older workers may be quite expensive and therefore discourage their hiring. ERISA and federal tax codes also prevent employers from paying out pension benefits to employees who have qualified for early retirement but are still employed by the firm.[6] Pension benefits may only be paid to current employees who have reached the plan's normal retirement age. Some have argued that this may discourage both employees and employers from pursuing a more gradual path to retirement [Purcell 2000]. Before 1982, Medicare was the primary health insurance provider for all individuals over the age of 65. Today, employer health insurance is primary for workers covered by the employer-

[5] Benefits lost due to the earnings tax were actually repaid to individuals in an actuarially fair manner once they stopped working.

[6] There is no prohibition against firms rehiring former employees who are currently receiving pension benefits. The employee must formally terminate employment with the firm first, however, before he or she can start receiving pension benefits. This requirement of termination introduces considerable uncertainty into the decision to take benefits for those desiring to remain employed by the same firm.

provided plan prior to age 65. Moreover, the law requires employers to continue offering private health insurance to these individuals for the length of their employment.

The ADEA of 1967 explicitly prohibited age discrimination of individuals between ages 40 and 65, with various exceptions. Since 1967, several amendments have extended the coverage of ADEA. The 1974 amendments extended coverage to governmental employees. The 1978 amendments prohibited mandatory retirement and extended the upper limit of the protected age class from 65 to 70; the 1986 amendments eliminated the upper age limit of 70. Amendments in 1982 and 1984 attempted to reconcile ADEA obligations for employee benefits with employer obligations under Medicare and Medicaid. Important amendments in 1990 required age-based differences in benefit plans to be justified by their costs. Reducing life insurance coverage is permissible, but an exception is that health care benefits for employees and their spouses between ages 65 and 69 cannot be reduced upon reaching age 65. The amendments also clarified standards by which employees could be granted severance pay as part of early retirement programs and established standards for waiver of age discrimination claims.

Age discrimination legislation could have either positive or negative effects on elderly labor supply. Prohibition of discriminatory hiring practices and mandatory retirement would tend to raise elderly employment. Such legislation, however, could also reduce elderly employment if it raises the cost of employing them. Neumark (2001) reports there is considerable evidence of age-based discriminatory hiring practices prior to ADEA. Neumark and Stock (1999), Adams (2000), and Ashenfelter and Card (2000) all find evidence that prohibition of explicit age discrimination in hiring and firing boosts the employment of older workers. There is little evidence of the latter effect [Neumark 2001]. The ADA of 1990, requires firms to accommodate individuals with disabilities. Given that such accommodation can be costly, it is conceivable that firms may be reluctant to hire older workers who are more likely to experience a disability while in their employment, although again there is scant evidence to support this hypothesis.

Hurd and McGarry (1993) emphasize the likely importance of hours flexibility in determining labor force participation among older workers. In a standard labor supply model, individuals choose hours of work given exogenously offered wages, and there are many reasons to believe that older workers would prefer to reduce hours gradually rather than retire all at once. Indeed, transitioning from full-time to part-time employment, and frequently simultaneously to a

new employer and even a fundamentally different job, is a common pathway to retirement for many older individuals [Hayward and Grady 1990; Blau 1994; Ruhm 1990; and Hayward, Crimmins, and Wray 1994; Herz 1995].

There is considerable evidence, however, that hours and wages are offered simultaneously and so workers cannot simply choose hours at a given wage [Lundberg 1985; Dickens and Lundberg 1993]. Hurd and McGarry (1993) investigate whether the ability to adjust hours within a job is correlated with retirement expectations. They find that individuals who currently work in jobs where work hours can be reduced or their responsibilities can be lessened report a substantially higher subjective probability of working past age 65, even after controlling for a host of demographic, financial, and health characteristics.[7] Thus, the ability of employers to accommodate demands for flexibility may be an important determinant of labor supply among the elderly. While there is no direct evidence on this point in the case of the elderly, several studies do show that accommodation influences the likelihood that individuals suffering from a temporary or permanent disability return to work as well as their earnings in that job [Daly and Bound 1996; Burkhauser 1999].

3. Data

We rely on three data sets for this paper: the annual March demographic supplements to the CPS and the 1998 HRS (HRS98) and AHEAD surveys. Multiple years of the March CPS provide a long time-series on key demographic and employment characteristics of the elderly, and, by pooling over multiple years, affords large sample sizes. The HRS98 and AHEAD data provide significantly more detailed information on health, wealth, employment, and retirement, as well as standard demographic characteristics of individuals, although with smaller sample sizes. The HRS98 allows for cross-sectional analysis over a large age range of individuals while the AHEAD allows for panel analysis of older individuals.

The annual March demographic supplement to the CPS surveys a nationally representative sample of households each year. We use 36 years of this survey between 1964 and 1999. The survey yields a nationally representative sample of individuals ages 50 and above

[7] They do not test whether *actual* retirement ages vary with such job characteristics.

ranging between 17,000 and 33,000. The survey covers basic demographic characteristics as well as querying individuals about labor force participation in the preceding year.

HRS98 represents the fourth wave of the original HRS panel of individuals born between 1931 and 1941 first surveyed in 1992. HRS98 also represents the third wave of the AHEAD (born 1923 and earlier) and the first waves of the Children of the Depression Age (CODA) (born 1924-30) and War Baby (born 1942-47) cohorts. In all, HRS98 constitutes a nationally representative sample of over 30,000 individuals born before 1948 and their spouses. We use HRS98 to explore the cross-sectional determinants of labor supply of the elderly and to make comparisons across individuals ages 50 and above

The AHEAD is a nationally representative sample of over 7,000 individuals who were born before 1924 and were first surveyed in 1993, with subsequent waves fielded in 1995 and 1998. As noted above, the third wave of the AHEAD was conducted as part of HRS98. We use all three waves in an effort to isolate the determinants of transitions into and out of the labor force among the elderly.

Because we are interested primarily in the decision to work, our unit of analysis is the individual. We examine both males and females, generally pooling them in our analyses; we present separate analyses only when large differences exist. Despite examining the individual, many of the important determinants of working such as income and wealth are measured at the household level. We make a simple adjustment in pooling our analysis across married and single individuals, multiplying household wealth and income by 0.75 for married individuals.[8] Details regarding sample sizes are provided in Appendix A, Tables A-1 and A-2.

The wealth and income data in the HRS98 and AHEAD are of high quality due to innovations in survey design. In particular, for many quantities, a series of unfolding brackets are used to solicit responses from individuals unwilling or unable to provide point estimates. We rely on the preliminary wealth and income imputations provided by the Institute for Social Research at the University of Michigan [Cao 2000a, 2000b].

We use two measures of wealth, bequeathable wealth and total wealth. We define bequeathable wealth as the sum of real estate, business and farm, IRA, stock, bond, cash, CD,

[8] This adjustment is based on the implicit adjustment to the federal poverty line between couples and individuals of 0.79. We use a lower rate of 0.75 because social security benefits are reduced by a larger fraction when a spouse dies. A household with a widow will receive 0.50 to 0.67 of the benefits the household received before the death of a spouse.

auto, trust, and housing equity wealth less non-mortgage debt. This measure of wealth does not account for the value of future non-labor income from social security, pensions and other annuitized assets. To include such wealth, we compute a second measure (that we call total wealth) that includes the present discounted value (PDV) of the future annuitized income stream and bequeathable wealth. We calculate the total wealth measure by summing current social security, supplemental security income (SSI), pension, veterans benefit, and annuity income over each individual's expected remaining lifetime, discounting by 5 percent, and adding it to current wealth.[9] Since we use current annuity and pension income in this calculation, the total wealth measure will be most accurate for individuals ages 70 and above because we expect most individuals eligible to receive annuitized income to be receiving it by that age. The total measure is less reliable at younger ages since many of these individuals, especially those who are working, may have elected to delay receipt of annuity income; therefore, we only compute the total wealth measure for individuals ages 65 and above.

4. Who Works Among the Elderly?

We begin this section by examining labor force participation rates of males ages 50 and above using data from the March CPS between 1963-98 (Figure 1).[10] Looking first at male labor force participation in the top graph, we see that while labor force participation among males ages 50-58 held more or less constant between 1963 and 1998, labor force participation among males ages 59-64 and 65+ declined through the mid 1980s from 63 and 22 percent in 1963 to 50 and 15 percent in 1985. At the very end of this time series, it appears that male labor force participation may be rising somewhat in the age 59-64 and 65+ categories. For women, the decline in labor force participation in the age 65+ category is much less dramatic than for men, although its slight decline stands in marked contrast to the general rise in labor force participation among younger women. Female labor force participation in the age 65+ category generally follows the pattern exhibited in male labor force participation, dipping slightly from 10 percent in 1963 to 8 percent in 1985, and then rising back through the end of the series to 10 percent. Figure 1 obscures the

[9] We add spousal income from these sources to this measure as well (see below). We calculate expected remaining lifetime using Social Security life tables for men and women [SSA 2000].

[10] We define the labor force participation rate throughout as the proportion of individuals reporting positive weeks worked and annual earnings.

much higher labor force participation rates for individuals ages 65-69. Labor force participation of males ages 65-69 stands at 26 percent in 1996-99 (see Table A-3). While the levels are higher at these younger ages, the general time-series patterns are the same. As found by previous research, the long-term trend toward earlier retirement has abated.

In Table 1, we examine how labor force participation varies by educational attainment using pooled 1991-99 CPS data. The table shows that labor force participation is higher at higher levels of education at all ages.[11] On average, labor force participation among all individuals ages 50 and older ranges from a low of 23 percent for dropouts to a high of 62 percent for those with more than a college level education. The difference in labor force participation between the more and less educated grows with age, however. At ages 50-58, 53 percent of dropouts work compared with 83 percent of those with more than a college level education. By ages 71-73, these labor force participation rates are 8 and 22 percent, respectively. At ages 77-79, the difference is even more dramatic: 4 percent of dropouts work compared with 14 percent of those with more than a college level education. These statistics indicate that the workforce becomes increasingly concentrated among the most educated individuals with age.

We note a similar pattern in labor force participation when looking at wealth. In the first two columns of Table 2, we see that the median bequeathable wealth of the working increases steadily with age while the median bequeathable wealth of the non-working increases through ages 68-70 and declines thereafter. While median bequeathable wealth of the non-working falls below that of the working at all ages, the ratio of non-working to working median bequeathable wealth increases through ages 68-70 and then declines. At ages 68-70, the median bequeathable wealth of the non-working and working are nearly equal, whereas by ages 77-79, the median bequeathable wealth of the working more than doubles that of the non-working ($226,500 v. $112,300).

The rise in the ratio of non-working to working median bequeathable wealth through ages 68-70 (third column of Table 2) no doubt reflects the fact that at younger ages the non-working population is largely composed of less-educated and perhaps disabled individuals who we might expect to have low wealth. As the population ages and individuals begin to retire, however, the non-working population becomes more representative of the overall population. There are two

[11] We categorize educational attainment as follows: dropout (<12 years), high school (12 years), some college (13-15 years), college (14 years), advanced (>14 years).

possible explanations for the wealth pattern observed after ages 68-70. The first possibility is that the wealth of the non-working and working diverge simply because the working are able to save at a higher rate than the non-working due to their labor income. The other more likely possibility is that this divergence represents a compositional shift in the working population after age 70. Relatively wealthy individuals are more likely to continue to work because they have access to agreeable working conditions or simply because they enjoy work more than the less wealthy. In the final column of Table 2, we note a similar decline in the ratio of median non-working to working total wealth beginning at age 65.

We examine the relationship between wealth and labor force participation in further detail in Table 3. This table reports labor force participation rates by bequeathable wealth quintile and age, where wealth quintiles are calculated within age categories. As with education, we see that the wealthiest are more likely to be working than the least wealthy at all ages. More strikingly, differences in labor force participation rates between the highest and lowest wealth quintiles grow substantially with age. At ages 65-67, for example, the labor force participation is 23 percent in the lowest two quintiles and 26 percent in the highest two quintiles. At ages 77-79, the relative difference has increased markedly to 5 versus 9 percent; for males the difference at ages 77-79 is even greater at 5 versus 15 percent. Noting that these quintiles represent equal population shares, it is evident by these statistics that labor force participation becomes increasingly concentrated among the wealthiest individuals with age.

In Table 4, we examine variation in difficulties with Activities of Daily Living (ADLs). In the first two columns of Table 4, we see that the mean number of difficulties with ADLs increases with age for both the non-working and working and that the non-working have more difficulties than the working at all ages.[12] We also show labor force participation by the number of difficulties in the final three columns of Table 4. Again, labor force participation is highest among individuals reporting difficulty with the least number of ADLs. This is true at all ages. Unlike with education and wealth, we do not see a growing disparity in labor force participation between the healthy and less healthy with age by this measure of health status. The healthy are much more likely to be working than the less healthy at all ages.

[12] We include 6 ADLs in our analysis: walking one block, climbing several flights of stairs, stooping, kneeling, or crouching, extending arms above shoulder level, lifting weights over 10 pounds, and picking up a dime from a table.

Education, wealth, and health, of course, are likely to be highly correlated, and so we run simple linear regressions in an attempt to isolate the partial correlations of these variables with labor force participation. We include two dummy variables for education (13-16 years and 16+ years), four dummy variables for bequeathable wealth quintile and three dummy variables for having zero, one, and two difficulties with ADLs. We also include a dummy variable for whether an individual considers him or herself to be in very good or excellent health. The regressions also control for age, age^2, gender, race, and marital status. In Table 5, we show the results of these regressions run separately for five age categories.

Looking first at the regression for individuals age 50-59, we see that the coefficients all have the expected signs so that more educated, wealthier, and healthier individuals are more likely to be working than the less educated, least wealthy, and less healthy individuals at that age. Consistent with Tables1-4, this is true in the older samples as well, although the effect of being in the highest wealth quintiles is sometimes negative and imprecisely estimated. In the case of education and health, the size of these regression coefficients relative to mean labor force participation generally increases with age. This is particularly evident in the case of health. We take this as further evidence that the working population becomes increasingly concentrated among the educated and healthy. Being in the highest wealth quintile exerts a proportionally large effect in the oldest age category (75+) as well. Also of note in Table 5, is the decline in R^2 with age in these regressions; the model explains about 17 percent of the variation in labor force participation among individuals ages 50-59, but only 4 percent of this variation among individuals ages 75+. This suggests that other factors, perhaps job characteristics and preferences, are becoming increasingly important in determining labor force participation with age.

5. What Are the Job Characteristics of the Elderly?

In this section we turn to an examination of the job characteristics of the elderly, dropping those individuals who do not work. We begin in Table 6 with mean weeks and hours worked as calculated from the CPS. The clear pattern here is that older workers work fewer weeks and hours than younger workers. There is a slight increase in mean weeks worked over time above age 65. No trend is apparent in hours worked. In Panel C, we distinguish between

full time (defined as working at least 35 hours per week and 50 weeks per year, or 1,750 hours per year) and part-time work.[13] Individuals at older ages are much more likely to be working part time than younger workers. Nonetheless, it is remarkable that 29 percent of workers ages 65 and above, and 24 percent of workers ages 70 and above continue to work full-time. There is a noticeable increase in the fraction of full-time workers above age 65 over time as well. For workers ages 65-69, for example, the proportion working full-time increases from 28 percent in 1975-77 to 36 percent in 1996-99. The proportion working full-time that is aged 80 and above increases from 19 to 28 percent over that same period.

In Table 7, we examine the wages of those who work. Median weekly wages as reported in the HRS98 drop precipitously with age. Median weekly wages of males fall from $781 at ages 50-58 to $256 at ages 74-76. This decline is confirmed in the CPS data, which show a decline in the median weekly wages of males from $742 at ages 50-58 to $266 at ages 74-76. In the fourth column of Table 7, we show that this decline is not attributable to cohort effects. Constructing synthetic cohorts using the CPS we see that median weekly wages of males decline from $626 to $223 between ages 50-58 and ages 74-76. Some of this decline is no doubt attributable to the greater proportion of part-time workers among the elderly. Part-time work typically commands lower wages than full-time work. Even among full-time workers (column five), however, we still observe a substantial drop in wages with age. We also note that wage declines occur across the educational spectrum. In the final of column of Table 7, for example, we see a large decline in the wages of males with a college level education or more. Thus, even the most educated workers appear willing to work for relatively low wages at older ages. All of these results hold for women as well (Panel B).

While we know from Table 7 that wages decline with age we do not know whether that decline is uniform across the entire distribution. Table 8 confirms that this is in fact the case. There appears to be a dramatic shift in the wages of male older workers toward the bottom quintile of the overall wage distribution of males ages 50-61. At ages 62-64, 33 percent of working males in the HRS98 earn wages in the bottom quintile of the age 50-61 wage distribution. By ages 71-73, this percentage has increased to 64 percent. At ages 80 and above,

[13] We can only calculate these percentages after 19xx, since hours worked per week is unavailable before then in the74PS.

76 percent of workers earn wages in the bottom quintile of the age 50-61 wage distribution. None of these workers remain in the top of the wage distribution.

Figure 2 and Table 9 provide strong evidence that older workers are more likely than younger workers to be employed in jobs with flexible work arrangements. In Figure 2, the fraction of working males who report being self-employed increases markedly with age. About 16 percent of the male HRS98 sample ages 50-52 report being self-employed compared to 30 percent of those ages 65-67 and 56 percent of those ages 77-79. The trend toward greater self-employment with age make sense if we believe self-employment allows individuals greater flexibility in setting their own hours and level of effort. Females also are more likely to be self-employed at older ages, although this trend is less pronounced.

Job flexibility, as measured by the ability to adjust hours, seems to increase with age among the non self-employed as well. In Table 9, we see that the proportion of working males who can reduce hours if they want to increases from 0.27 at ages 50-58 to 0.39 at ages 62-64 to 0.59 at ages 74-76. We observe a similar increase with age in the proportion that report they can increase hours. For those who cannot reduce hours, we see a decline in the proportion who want to decrease hours with age which suggests older workers may select into jobs with the preferred level of hours. The trend is less clear if we look at the proportion of workers who cannot but want to increase hours. This percentage declines through ages 65-67 and then increases thereafter, so that 16 percent of workers over the age of 73 cannot but would like to increase hours. Putting these estimates together, we find that the proportion of workers reporting being constrained in hours worked falls through ages 71-73 and then rises slightly thereafter. The mean deviation of actual hours worked from desired hours falls from 3.8 at ages 50-58 to 0.5 at ages 77-79. These estimates imply that, not only do actual hours decline with age, but so do preferred hours (final column of Table 9).

In the CPS, we see a small shift in the occupational mix of workers as they age (Figure 3). There is virtually no change with age in the proportion of males working in management/professional or laborer/agriculture occupations. The proportion of males in sales/service jobs, though, increases from 0.26 for those ages 50-54 to 0.40 for those ages 75-79. There is a corresponding decrease in the proportion of workers in the craft/production occupational category.

A similar analysis using HRS98 data is not possible since occupational data have yet to be released for that wave. We can, however, examine how other job characteristics change with age. A battery of questions asks respondents to categorize the extent to which their job involves physical effort; lifting heavy loads; stooping, kneeling, or crouching; good eyesight; intense concentration; and skill in dealing with other people. The share of workers reporting that their job involves these activities all or most of the time is reported in Table 10. The proportion of working individuals reporting that their job involves physical effort all or most of the time does not change appreciably with age. The proportion who report their job involves lifting heavy loads or stooping, kneeling, or crouching all or most of the time does fall significantly, however, from 0.16 at ages 50-54 to 0.08 at ages 75-79 in the case of lifting and from 0.25 at ages 50-54 to 0.16 at ages 75-79 in the case of stooping, kneeling, or crouching. The need for intense concentration appears to decline somewhat with age, while the need for good eyesight and skill in dealing with other people does not seem to change much with age. These results do not change if we examine males and females separately.

While particular job characteristics do not appear to change markedly with age, the level of stress experienced on the job does fall. Whereas 67 percent of respondents ages 50-54 report that their job involves a lot of stress only 22 percent of those ages 75-79 agree with that statement. This could reflect changes in the job characteristics of older individuals, changes in the population of working individuals, or simply that younger people have higher stress levels than older people in general. In the final column of Table 10 we see that the proportion of individuals who report really enjoying going to work increases slightly from 0.86 at ages 50-54 to 0.96 at ages 75-79.

The results of this section demonstrate that older workers tend to work fewer hours, are paid lower wages, are more likely to be self-employed and have flexible work arrangements, and work in service-oriented occupations than younger workers. These observations beg the question, however, whether this represents a compositional shift in the workforce due to selective retirement or a process in which individuals gravitate toward jobs with particular characteristics as they age. The trend towards a relatively more educated and healthy workforce at older ages is indicative of significant compositional changes in the working population. At the same time, the trend toward lower wages at older ages, even among the most educated, indicates a transition in the types of jobs older workers are willing to hold.

We examine this issue relying on the AHEAD data by comparing the job characteristics of individuals who report being in their longest job with those individuals, currently working but not in their longest job.[14] We also compare the current and longest job characteristics of individuals who are currently working, but not in their longest job. By relying on the AHEAD data, we are restricting our sample to individuals age 70 and older. We present these results in Table 11. We note that, consistent with the CPS and HRS98 results, the workers in wave 1 are more highly educated, possess higher wealth, are married, and are younger.

The first set of comparisons we make in Table 11 is between the current job characteristics of those who report being in their longest job and those who report not being in their longest job. In Panel B we see that individuals who currently work in their longest job earn a higher wage, work more, and are more likely to be self-employed and working in a professional occupation than those working, but not in their longest job.[15] We also see in Panel A that the individual characteristics of these two groups are quite similar. There is little difference in educational attainment or wealth.

Of greater interest in Table 11 is the comparison between current job characteristics and longest job characteristics (Panel B v. Panel C). The first thing to note is that individuals not in their longest job (third column) currently work for wages nearly three times lower than their maximum wage on their longest job (which they earned at an average age of 60). We also observe that these individuals have transitioned away from professional and manual occupations toward clerical positions. We view this as strong evidence that the pattern of declining wages we observe in Table 7 is at least partly attributable to a process in which individuals gradually select into lower paying jobs, and perhaps jobs with lower levels of responsibility as well. It is also of note that the maximum wages on a longest job of individuals who are not currently working (third column) are below the same wage of those currently working. The non-working in Wave 1 were also substantially more likely to be working in manual occupations on their longest job than the Wave 1 working population. Thus, it would appear that prior job characteristics are an important determinant of the propensity to work at older ages. Table 11 does not tell us directly

[14] The "longest" job here and in Section 6 refers to a job that lasts for at least ten years with a wage peaking after age 45 and 1963.

[15] We collapse nine occupational categories in the AHEAD to three for our analysis: (1) Professional (professional and technical workers, managers, officials, and proprietors); (2) Clerical (clerical and kindred workers, sales workers, service workers); and (3) Manual (craftsmen, foremen, and kindred workers, operatives and kindred workers, laborers and farm foremen, farmers and farm managers).

how wages have evolved for individuals who are currently in their longest job (second column). Looking back at Panel B, however, we see that their Wave 1 wages are quite low, and given that they have roughly the same level of education and wealth of individuals who are not currently in their longest job, it seems likely that they too have transitioned to lower paying responsibilities, albeit within the same employer.

Although we have presented much evidence on the characteristics of the jobs for current workers, such evidence does not provide information about those individuals who have already retired. Retired individuals in HRS98 were asked a series of questions about why they retired. We present tabulations for the reason for retirement by age of actual retirement in Table 12. In the first column of Table 12, we see that the proportion of retirees who report they were at least partly "forced" to retire from their last job decreases with age at retirement through ages 65-67 and then increases subsequently; however, it is unclear whether respondents interpreted "forced" as their employer forcing them to retire or some other factor, such as poor health, forcing them to retire. In columns (2) through (5) we report the proportion of retirees who cited a variety of other reasons why they retired. Nearly 25 percent of individuals retiring between ages 50-58 reported poor health was a very important reason for retiring as did 35 percent of those retiring between ages 59-61. This percentage then declines to 13 percent at ages 71-74 before increasing to 25 percent at ages 75 and above. A substantial proportion of individuals also report wanting to do other things and spending time with family as very important reasons for retiring. Interestingly, very few individuals claimed they retired because they did not like their work.

In the final column of Table 12, we report the proportion of retirees who said they were forced to retire but did not claim health or spending time with family as being important reasons for retirement. This percentage increases from 15 percent at ages 50-58 to 25 percent of those retiring at age 80 and above. By controlling for other reasons for retirement, this fraction provides indirect evidence that at least some older workers exit the labor force because they feel their employer is forcing them to leave either explicitly or by not offering them jobs that accommodate their desire for flexible work schedules or other non-pecuniary job characteristics.

6. Who Exits the Labor Force at Older Ages?

In this final section, we exploit the panel nature of the AHEAD to examine how the personal and job characteristics of individuals who exit the labor force between waves (leavers) compare with those who remain in the labor force (stayers). Table 13 summarizes differences in the personal and job characteristics of leavers and stayers in the AHEAD. We look at transitions both between Waves 1 and 2 and Waves 2 and 3, measuring characteristics in the initial wave.[16] The first thing to note in Table 13 is that a non-trivial fraction of those working in either Wave 1 or Wave 2 die between waves: 8 percent between Waves 1 and 2 and 15 percent between Waves 2 and 3. Thus, about ten percent of individuals who leave the labor force at older ages do so fairly close to their death date. Also of note is the fact that nearly half of the sample is female. Consistent with the results of Section 4, individuals who stay employed between waves are more educated, wealthier, and healthier than those who exit the labor force. Stayers are also somewhat younger and more likely to be married.

Moving on to the job characteristics of stayers and leavers, we see first that 87 percent of stayers between Waves 1 and 2 and 75 percent of stayers between Waves 2 and 3 remain in the same job. The smaller fraction remaining in the same job between Waves 2 and 3 is likely due to the longer interval between Waves 2 and 3 as compared to Waves 1 and 2. Those who stay employed between waves work more hours and weeks in their initial wave job than those who leave (see below for more on hours). There is mixed evidence on the difference in wages of leavers and stayers, however. Stayers are somewhat more likely to be self-employed than leavers and less likely to report their job is stressful. While we have no data on hours constraints in the AHEAD population, we do note that stayers report having less stress at work than leavers.

Table 14 provides additional evidence that the wealthy are significantly more likely to work at older ages than the less wealthy. The Wave 1 and Wave 2 labor force participation rates of individuals in the highest wealth quintile are 15 and 13 percent respectively. These rates drop off significantly in lower wealth quintiles. Wealth, however, seems to have a relatively small impact on whether an individual leaves the workforce between waves of the AHEAD. Conditional on working in Wave 1, labor force participation rates in Wave 2 are only slightly higher among individuals in the highest wealth quintiles (66 percent in the highest wealth quintile versus 61 percent in the lowest wealth quintile). This is also true if we look at labor

force participation rates of individuals in Wave 3 conditional on working in Wave 2. So, while wealth is an important correlate of whether or not one is working at ages 70 and above, it does not seem to be an important correlate of the decision to continue working after that age.

Finally, in Table 16, we present the results from simple OLS regressions where the dependent variable is whether an individual remained employed between waves of the AHEAD. We model the probability of working in Wave 2 as a function of Wave 1 personal and job characteristics as well as the change in health status between waves. We do the same analysis between Waves 2 and 3.

The primary result of these regressions is that negative health shocks are by far the strongest determinant of whether an individual remains employed between waves. For example, the probability of working in Wave 2, conditional on working in Wave 1, is sharply lower for individuals who experienced deteriorating health between waves as measured by both subjective health status (Health worse) and increases in the number of ADLs an individual reports having difficulty with (ADL diff change). This is true even conditioning on Wave 1 health status. We observe the same results between Waves 2 and 3. Also of significance is the fact that prior wave financial variables like wealth and wage have small and statistically insignificant effects on the probability of remaining employed between waves. Demographic variables like age and education, which were important correlates of labor force participation at younger ages, also turn out to have no significant impact on labor market transitions in this older population. Likewise, job characteristics such as occupation and stress level have no impact on labor force transitions in this population.

7. Discussion and Conclusions

Our empirical analyses of the CPS, HRS98 and the AHEAD yield three principal findings. First, we show that it is the most educated, wealthiest, and healthiest individuals who are most likely to be working in old age. While the effect of health on labor force participation at older ages has been extensively researched, the fact that labor supply becomes increasingly concentrated among the most educated and wealthiest has not been widely reported. Prior research clearly points to a causal role for health in determining ability to work. The labor force

[16] Note that there are two years between Waves 1 and 2 and three years between Waves 2 and 3.

patterns with respect to education and wealth are likely explained by the more educated and wealthy having stronger preferences for work and access to jobs that allow them to continue working at the hours and level of responsibility they prefer.

Our second major finding is the fact that the elderly who choose to work do so for comparatively low wages. A number of additional results suggest this is not just a function of selective retirement. Rather, it appears that individuals tend to select into low paying jobs as they age. This is suggested by the fact that it is the educated and wealthy that are most likely to be working at older ages and we would expect these individuals to have high lifetime earnings on average. More directly, retrospective job history questions in the AHEAD show that wages decline at the individual level and not just in the cross-section. The concomitant decline in hours and increase in hours flexibility with age suggests the elderly purchase flexibility at the expense of low wages. In this sense, work may be closer to leisure for the majority of elderly workers

Finally, panel analyses of labor market transitions in the AHEAD point to negative health shocks as being by far the most significant predictor of whether an individual remains in the labor force after age 70. Wages, wealth, and other personal and job characteristics have little or no effect on labor market transitions at older ages. Together, we take these three major findings as strong evidence that non-pecuniary concerns dominate the labor force decisions of the elderly. While such non-pecuniary motives have long been recognized in the literature, the extent to which these motives dominate financial considerations in the elderly population has not.

Our findings have important implications for a variety of public policy issues. For example, the recent Senior Citizens' Freedom to Work Act of 1999 repealed the Social Security earnings test that penalized seniors for working beyond the age of 65. Proponents of this law argued that (a) it is unfair to tax the elderly who choose to work to make ends meet and (b) repealing these taxes would induce individuals to continue to work.[17] Our results suggest that both of these arguments lack empirical support: the elderly who choose to work are in fact generally wealthy and they respond relatively inelastically to wages. In general, we think policies that affect the financial return to work for the elderly will have less impact on labor supply in this population than policies targeted at improving the non-pecuniary returns to work.

[17] For example, see the comments of the co-sponsor, the Honorable Max Sandlin (Rep, Texas), *Congressional Record*, 6 March 2000.

Although the analysis presented here constitutes a significant step in understanding the determinants of elderly labor supply, it leaves unanswered a number of important questions. Perhaps most importantly, it does not answer the question whether individuals who left the labor force did so because they were unable to find employment with the desired bundle of characteristics. That is, were these individuals somehow more constrained in their employment opportunities than those who continued to work? Given the level of interest in the issue of private and public barriers to work for the elderly, we think this issue is deserving of further research. As future waves of the HRS cohort become available, the extent to which such barriers exist and affect the labor supply decision of the elderly can be examined directly.

References

Adams, S. 2000. Three Essays on the Economics of Aging. Ph.D. dissertation, Department of Economics, Michigan State University.

Anderson, K. Burkhauser R., and J. Quinn. 1986. Do Retirement Dreams Come True? The Effect of Unexpected Events on Retirement Age. Industrial Labor Relations Review 39(4): 518-26.

Ashenfelter, O. and D. Card. 2000. How Did the Elimination of Mandatory Retirement Affect Faculty Retirement? Working paper #448, Industrial Relations Section, Princeton University.

Benitez-Silva, H. 2000. Micro Determinants of Labor Force Status among Older American. Unpublished manuscript, Department of Economics, SUNY at Stony Brook.

Blau, D. 1994. Labor Force Dynamics of Older Men. Econometrica, 62(1), 117-156.

Bound, J., Schoenbaum, M., Stinebrickner, T., and T. Waidmann. 1998. The Dynamic Effects of Health on the Labor Force Transitions of Older Workers. NBER Working Paper #6777. Cambridge, MA: National Bureau of Economic Research.

Burkhauser, R., Buler J., Kim Y., R. Weathers. 1999. The Importance of Accommodation on the Timing of Male Disability Insurance Application. Journal of Human Resources 34(3).

Cao, H. 2000a. HRS 1998 Preliminary Imputations. Unpublished manuscript, Institute for Social Research, University of Michigan.

Cao, H. 2000b. AHEAD95 Imputations: Documentation. Unpublished manuscript, Institute for Social Research, University of Michigan.

CED. 1999. New Opportunities for Older Workers. New York: Committee for Economic Development.

Costa, D. 1999. Has the Trend Toward Early Retirement Reversed. First Annual Joint Conference for the Retirement Research Consortium: May 20-21. Boston, MA.

Daly, M. and J. Bound. 1996. Worker Adaptation and Employer Accommodation Following the Onset of a Health Impairment. Journal of Gerontology 51B(2): S53-60.

Dickens, W. and S. Lundberg. 1993. International Economic Review. Hours Restrictions and Labor Supply 34(1): 169-92.

Friedberg, L. 1998. The Labor Supply Effects of the Social Security Earnings Test. NBER Working Paper #7200. Cambridge, MA: National Bureau of Economic Research.

Fullerton, Howard, Jr. 1999. Labor force participation: 75 years of change, 1950-98 and 1998-2025. Monthly Labor Review (December): 3-12.

Gruber, J. and P. Orszag. 1998. Does the Social Security Earnings Test Affect Labor Supply and Benefits Receipt? NBER Working Paper #7923. Cambridge, MA: National Bureau of Economic Research.

Gustman, A. and T. Steinmeier. 1986. A Disaggregated Structural Analysis of Retirement by Race, Difficulty of Work and Health. Review of Economics and Statistics 68(3): 509-13.

Hayward, M., Crimmins, E., Wray, L. 1994. The Relationship Between Retirement Life Cycle Changes and Older Men's Labor Force Participation Rates. Journal of Gerontology 49(5): S219-30.

Hayward, M. and W. Grady. 1990. Work and Retirement Among a Cohort of Older Men in the United States, 1966-1983. Demography 27(3): 337-56.

Herz, D. 1995. Work After Early Retirement: An Increasing Trend Among Men. Monthly Labor Review (April): 13-20.

Holden, K. 1988. Physically Demanding Occupations, Health, and Work After Retirement: Findings from the New Beneficiary Survey. Social Security Bulletin 51(11): 3-15.

Hurd, M. 1990. Research on the Elderly: Economic Status, Retirement, and Consumption and Saving. Journal of Economic Literature, 28(2): 565-637.

Hurd, M. and K. McGarry. 1993. The Relationship Between Job Characteristics and Retirement. NBER Working Paper #4558. Cambridge, MA: National Bureau of Economic Research.

Iams, H. 1987. Jobs of Persons Working After Receiving Retired-Worker Benefits. Social Security Bulletin 50(11): 4-19.

Knapp, K. and C. Muller. 2001. Productive Lives: Paid and Unpaid Activities of Older Americans. New York: International Longevity Center.

Lumsdaine, R., Stock, J., and D. Wise. 1995. Why are Retirement Rates So High at Age 65? NBER Working Paper #5190. Cambridge, MA: National Bureau of Economic Research.

Lundberg, S. 1985. Tied Wage-Hours Offers and the Endogeneity of Wages. Review of Economics and Statistics 67(3): 405-10.

Mitchell, O. 1990. Aging, Job Satisfaction, and Job Performance in Bluestone, I., Montgomery, R. and J. Owen (eds.) *The Aging of the American Workforce*. Detroit: Wayne State University Press.

Neumark, D. 2001. Age Discrimination in the United States. NBER Working Paper #8152. Cambridge, MA: National Bureau of Economic Research.

Neumark, D. and W. Stock. 1999. Age Discrimination Laws and Labor Market Efficiency. Journal of Political Economy 13(4): 736-61.

Parnes, H. and D. Sommers. 1994. Shunning Retirement: Work Experience of Men in Their Seventies and Eighties. Journal of Gerontology 49(3): S117-S124.

Pienta, A., Burr, J. and J. Mutchler. 1994. Women's Labor Force Participation in Later Life: The Effects of Early Work and Family Experiences. Journal of Gerontology 49(5): S231-S239.

Purcell, P. 2000. Older Workers: Employment and Retirement Trends. Monthly Labor Review (October): 19-30.

Quinn, J. 1999. Has the Early Retirement Trend Reversed? First Annual Joint Conference for the Retirement Research Consortium: May 20-21. Boston, MA.

Ruhm, C. 1990. Bridge Jobs and Partial Retirement. Journal of Labor Economics 8(4): 482-501.

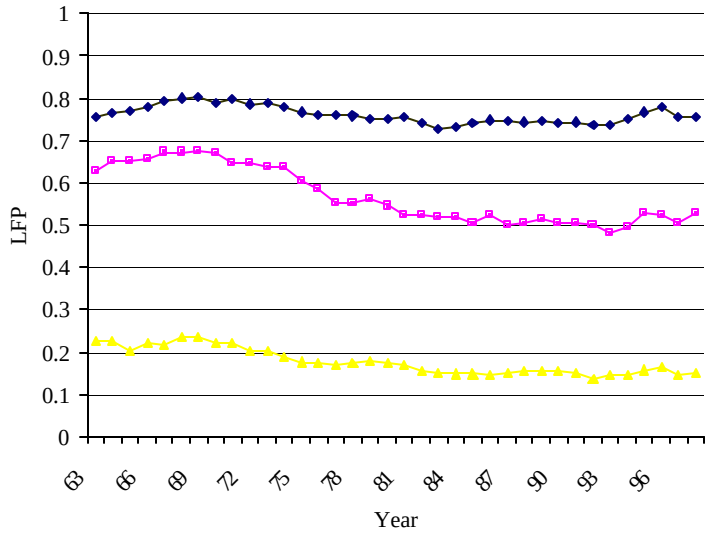
Social Security Administration. 2000. *Annual Statistical Supplement*. Washington, DC: Social Security Administration.

U.S. Census. 2000. (NP-D1-A) Projections of the Resident Population by Age, Sex, Race, and Hispanic Origin, 1999-2100. Washington, DC: U.S. Census Bureau.

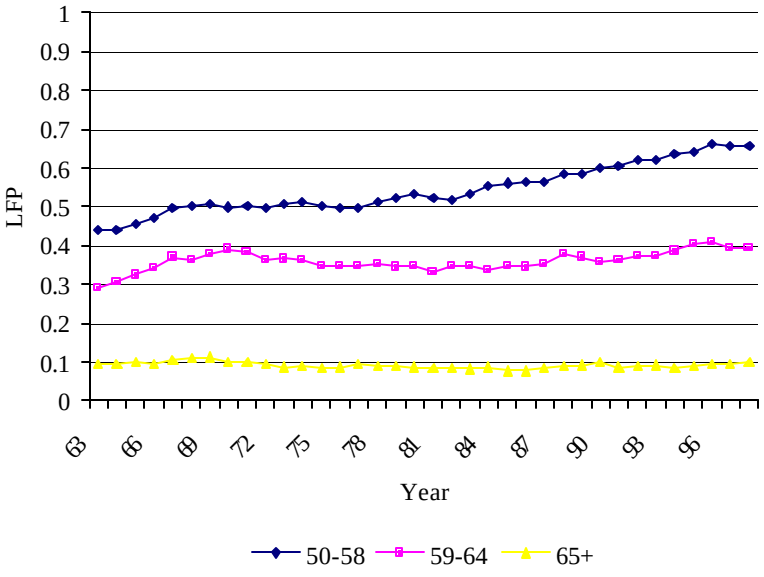
U.S. Senate. 2000. Now Hiring: The Rising Demand for Older Workers. Hearing before the Special Committee on Aging (April 3, 2000).

Figure 1
Labor Force Participation Rates by Sex, Age, and Year

Males

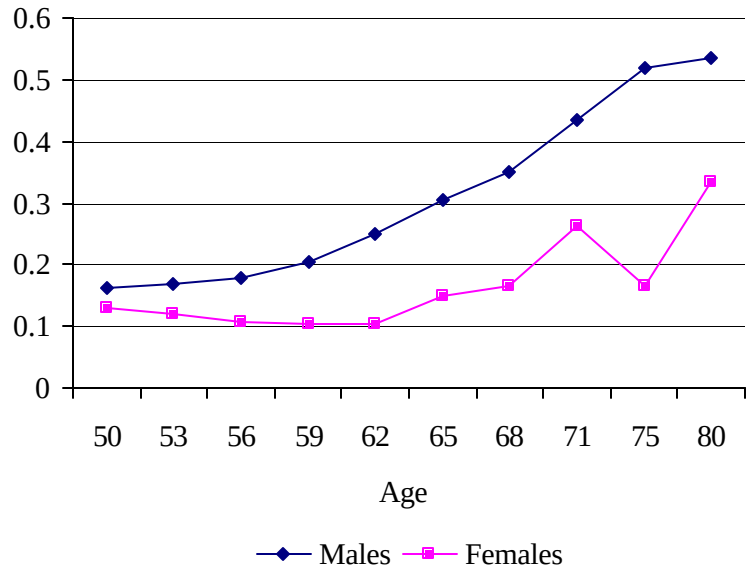


Females



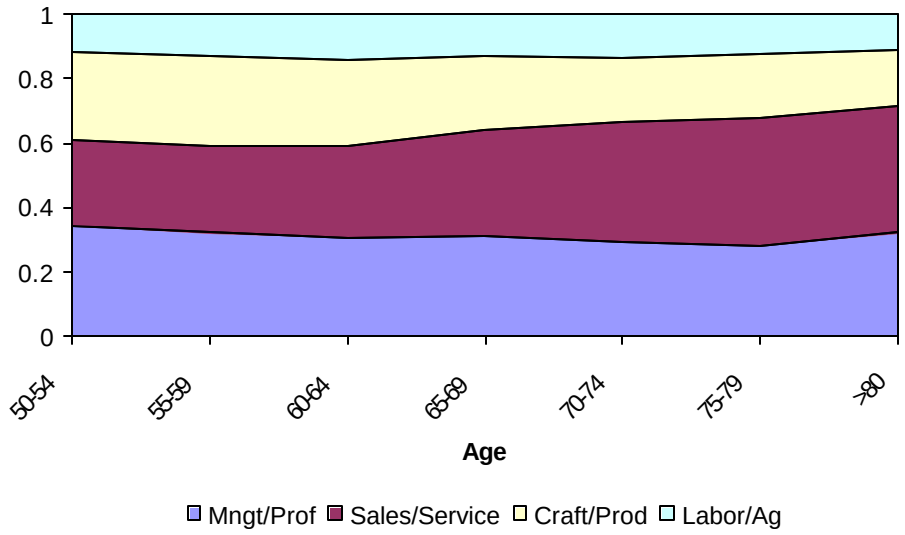
Data source: 1964-99 CPS.

Figure 2. Self-Employment, by Age



Notes: Sample restricted to individuals reporting positive earnings and weeks worked. *Data source*: HRS98.

Figure 3
Share of Working Males by Age and Occupation



Notes: *Data source*: 1995-99 March CPS

Table 1
Labor Force Participation by Age and Education

	Educational Attainment				
Age	Dropout	High School	Some College	College	Advanced
50-58	0.53	0.68	0.74	0.78	0.83
59-61	0.41	0.52	0.58	0.62	0.68
62-64	0.26	0.34	0.41	0.46	0.52
65-67	0.16	0.22	0.26	0.31	0.42
68-70	0.11	0.15	0.18	0.24	0.28
71-73	0.08	0.10	0.14	0.14	0.22
74-76	0.06	0.08	0.10	0.10	0.17
77-79	0.04	0.05	0.06	0.09	0.14
80-83	0.02	0.03	0.04	0.06	0.08

Notes: *Data source*: 1991-99 March CPS.

Table 2
Median Bequeathable and Total Wealth ($1998) by Age and Work Status

	Bequeathable Wealth		Ratio Not Working/ Working Wealth	
Age	Not Working	Working	Bequeathable Wealth	Total Wealth
50-58	76,500	113,250	0.68	—
59-61	87,037	117,400	0.74	—
62-64	112,325	135,000	0.83	—
65-67	120,000	134,250	0.89	1.19
68-70	138,750	140,175	0.99	1.12
71-73	137,100	147,125	0.93	1.00
74-76	132,375	150,563	0.88	1.04
77-79	112,313	226,500	0.50	0.72
≥80	93,750	159,375	0.59	0.70

Notes: See text for details of wealth measurement. *Data source*: HRS98.

Table 3
Labor Force Participation by Age and Bequeathable Wealth Quintile

	Bequeathable Wealth Quintile				
Age	Low	2	3	4	High
A. All					
50-58	0.57	0.68	0.73	0.74	0.73
59-61	0.44	0.54	0.61	0.62	0.56
62-64	0.28	0.43	0.39	0.42	0.39
65-67	0.19	0.26	0.20	0.26	0.26
68-70	0.14	0.19	0.17	0.15	0.19
71-73	0.09	0.11	0.12	0.10	0.15
74-76	0.08	0.11	0.07	0.07	0.15
77-79	0.05	0.05	0.04	0.08	0.10
≥80	0.01	0.02	0.04	0.03	0.05
B. Males					
50-58	0.64	0.75	0.83	0.84	0.83
59-61	0.50	0.68	0.66	0.66	0.65
62-64	0.33	0.49	0.44	0.44	0.50
65-67	0.24	0.24	0.22	0.33	0.34
68-70	0.16	0.21	0.20	0.18	0.23
71-73	0.13	0.13	0.14	0.15	0.20
74-76	0.08	0.16	0.08	0.11	0.18
77-79	0.05	0.05	0.03	0.14	0.15
≥80	0.03	0.05	0.05	0.06	0.07

Notes: See text for details of wealth measurement. Wealth quintiles calculated within age categories. *Data source*: HRS98.

Table 4
Labor Force Participation by Age and Health Status: ADL Difficulties

	Mean ADL Difficulties		# ADL Difficulties		
Age	Not Working	Working	≤1	2	>2
50-58	1.81	0.84	0.68	0.63	0.32
59-61	1.87	0.97	0.56	0.51	0.27
62-64	1.75	1.03	0.42	0.36	0.20
65-67	1.74	0.95	0.28	0.21	0.11
68-70	1.75	0.95	0.21	0.16	0.07
71-73	1.79	1.20	0.15	0.13	0.07
74-76	2.01	1.26	0.14	0.09	0.06
77-79	2.19	1.47	0.09	0.07	0.04
≥80	2.87	1.51	0.05	0.03	0.01

Notes: We include 6 ADLs in this analysis. *Data source*: HRS98.

Table 5
The Relative Effect of Education, Health, and Wealth on
Labor Force Participation, by Age

	Age				
	50-59	60-64	65-69	70-74	75+
Education*					
>16 yrs	0.10	0.08	0.06	0.04	0.02
	(0.02)	(0.03)	(0.03)	(0.03)	(0.01)
13-16 yrs	0.07	0.07	0.02	0.01	0.00
	(0.01)	(0.02)	(0.02)	(0.02)	(0.01)
Wealth Quintile*					
High	0.00	-0.03	-0.02	0.01	0.02
	(0.02)	(0.03)	(0.03)	(0.03)	(0.01)
2	0.05	0.03	-0.01	-0.05	0.01
	(0.02)	(0.03)	(0.03)	(0.03)	(0.01)
3	0.08	0.06	-0.02	-0.02	0.01
	(0.02)	(0.03)	(0.02)	(0.02)	(0.01)
4	0.06	0.10	0.04	0.00	0.00
	(0.02)	(0.03)	(0.02)	(0.02)	(0.01)
# ADL Difficulties*					
0	0.38	0.27	0.16	0.08	0.04
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)
1	0.34	0.24	0.11	0.03	0.05
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)
2	0.33	0.19	0.08	0.03	0.02
	(0.02)	(0.03)	(0.02)	(0.02)	(0.01)
Subj. Good Health	0.07	0.09	0.06	0.04	0.03
	(0.01)	(0.02)	(0.02)	(0.02)	(0.01)
Dep. Mean	0.68	0.45	0.21	0.13	0.05
n	5,452	3,623	2,905	2,055	5,054
R^2	0.17	0.13	0.05	0.03	0.04

Notes: Regressions control for age, age^2, gender, race, and marital status.
*Excluded categories are <13 years education, lowest quintile of the bequeathable wealth distribution, and more than 2 ADL difficulties, respectively. *Data source*: HRS98.

Table 6
Weeks and Hours Worked by Age and Year

	Age						
Year	50-58	59-61	62-64	65-69	70-74	75-79	80+
A. Weeks							
1963-65	46.8	46.2	43.9	38.9	36.8	39.0	36.4
1966-68	47.4	46.6	44.4	39.3	38.3	37.7	39.8
1969-71	47.0	46.1	43.6	37.6	37.8	37.9	37.5
1972-74	47.2	45.8	42.8	37.8	37.8	37.2	38.9
1975-77	46.7	45.3	40.9	35.8	36.6	37.0	34.4
1978-80	46.9	45.7	42.3	37.0	36.0	35.9	35.6
1981-83	46.8	45.3	42.2	37.9	36.8	36.6	37.3
1984-86	46.9	45.4	42.0	37.7	37.4	36.9	36.9
1987-89	47.4	45.2	41.9	39.0	38.3	36.8	36.7
1990-92	47.4	45.2	41.7	39.0	37.9	38.1	36.0
1993-95	47.5	45.1	42.5	39.1	37.6	36.4	39.8
1996-98	48.1	46.0	43.3	40.5	39.2	37.8	38.1
B. Hours							
1975-77	39.8	39.0	36.5	29.7	26.4	25.5	27.6
1978-80	39.8	39.0	36.4	29.8	26.0	26.2	22.9
1981-83	39.3	38.3	35.8	29.7	25.4	23.5	24.0
1984-86	39.6	38.2	35.2	29.2	24.6	24.8	23.4
1987-89	39.8	38.3	34.7	30.1	26.4	26.5	25.0
1990-92	40.2	38.2	34.6	28.8	25.9	25.2	24.5
1993-95	40.6	38.3	35.1	29.9	27.1	24.1	28.9
1996-98	41.0	38.9	35.5	29.9	26.7	26.2	25.2
C. Proportion working full-time							
1975-77	0.75	0.69	0.53	0.28	0.24	0.25	0.19
1978-80	0.75	0.70	0.56	0.30	0.20	0.23	0.20
1981-83	0.74	0.68	0.55	0.31	0.22	0.19	0.23
1984-86	0.74	0.68	0.54	0.30	0.24	0.20	0.23
1987-89	0.75	0.67	0.51	0.34	0.26	0.25	0.24
1990-92	0.75	0.65	0.51	0.32	0.25	0.25	0.24
1993-95	0.76	0.65	0.51	0.34	0.26	0.22	0.37
1996-98	0.78	0.69	0.53	0.36	0.27	0.26	0.28

Notes: Sample restricted to individuals reporting positive earnings and weeks worked.
Data source: 1964-99 March CPS.

Table 7
Wages ($1998) by Age

	HRS98		CPS Median Weekly Wage			
Age	Hourly	Weekly	Cross-Section	Synthetic Cohort	Full-Time	College+
A. Males						
50-58	17.6	781	742	626	781	1,099
59-61	15.2	664	635	664	699	999
62-64	14.1	555	538	708	712	999
65-67	11.4	372	340	660	699	700
68-70	10.2	273	280	579	580	504
71-73	10.2	239	254	325	547	498
74-76	8.7	256	266	223	514	481
77-79	10.2	197	298	215	693	481
≥80	7.6	162	250	192	740	329
B. Females						
50-58	11.3	430	411	303	494	697
59-61	10.2	391	360	327	453	592
62-64	9.1	308	306	333	469	508
65-67	8.6	213	220	304	425	391
68-70	8.1	195	183	293	387	250
71-73	7.6	201	183	196	430	267
74-76	6.6	158	156	147	385	210
77-79	7.3	113	141	138	330	136
≥80	6.4	112	150	122	413	272

Notes: Samples include males reporting positive earnings and weeks worked. CPS cross-section based on pooled 1994-98 wages. CPS synthetic cohort based on 1967-99 data. *Data source*: HRS98 and 1967-99 March CPS.

Table 8
Distribution of Working Males by Age and Wage Quintile of Males Age 50-61

	Wage Quintile of Males Age 50-61				
Age	Low	2	3	4	High
50-61	0.20	0.20	0.20	0.20	0.20
62-64	0.33	0.19	0.20	0.16	0.12
65-67	0.51	0.15	0.13	0.08	0.13
68-70	0.61	0.17	0.07	0.06	0.09
71-73	0.64	0.12	0.08	0.08	0.08
74-76	0.65	0.14	0.12	0.06	0.03
77-79	0.73	0.06	0.08	0.05	0.09
≥80	0.76	0.11	0.06	0.07	0.00

Notes: Sample includes males reporting positive earnings and weeks worked. *Data source*: HRS98.

Table 9
Hours Flexibility by Age

Age	Can Reduce Hours	Want to Reduce Hours*	Can Increase Hours	Want to Increase Hours*	Constrained in Hours Worked	Mean Deviation from Preferred Hours	Preferred Hours
50-58	0.27	0.18	0.28	0.20	0.35	3.78	40.0
59-61	0.34	0.18	0.29	0.15	0.31	3.73	37.6
62-64	0.39	0.16	0.33	0.14	0.25	2.80	35.9
65-67	0.48	0.11	0.38	0.14	0.21	2.04	30.6
68-70	0.47	0.14	0.41	0.07	0.17	2.26	29.0
71-73	0.58	0.08	0.52	0.14	0.13	1.47	27.7
74-76	0.59	0.05	0.45	0.21	0.22	2.18	25.0
77-79	0.56	0.04	0.58	0.09	0.08	0.54	22.6
≥80	0.63	0.00	0.47	0.15	0.12	0.46	19.2

Notes: Sample restricted to working individual. *Want to reduce and increase hours conditional on not being able to reduce or increase hours. *Data source*: HRS98.

Table 10
Job Characteristics by Age

Age	Lots of Physical Effort	Lifting Heavy Loads	Stooping, Kneeling, or Crouching	Good Eyesight	Intense Concen-tration	Dealing with Other People	Involves a lot of Stress	Really Enjoy Going to Work
50-54	0.34	0.16	0.25	0.69	0.59	0.74	0.67	0.85
55-59	0.36	0.16	0.26	0.60	0.52	0.67	0.61	0.87
60-64	0.39	0.15	0.27	0.59	0.51	0.66	0.53	0.89
65-69	0.33	0.12	0.23	0.58	0.44	0.62	0.41	0.92
70-74	0.27	0.09	0.17	0.61	0.49	0.63	0.38	0.94
75-79	0.30	0.08	0.16	0.67	0.50	0.67	0.22	0.97
≥80	0.32	0.03	0.12	0.59	0.35	0.71	0.28	0.96

Notes: *Data source*: HRS98.

Table 11
Workers and Non-workers in Wave 1 of AHEAD

	W1 Workers		W1 Non-workers
	In "Longest" Job	Not In "Longest" job	With "Longest" Job
Share of Population	0.033	0.034	0.442
A. Demographic characteristics			
Education	12.0	12.5	11.4
W1 total wealth	$308K	$274K	$209K
Married	0.65	0.62	0.55
Age	74.1	74.1	77.0
Female	0.46	0.41	0.48
B. Current job			
Median wage	9.13	7.8	—
Hours	30.2	18.9	—
Weeks	46.0	42.7	—
Self-employed	0.55	0.33	—
Occupation			
Professional	0.35	0.29	—
Clerical	0.41	0.50	—
Manual	0.22	0.20	—
C. "Longest" job			
Median max. wage	—	21.6	17.5
Occupation			
Professional	—	0.38	0.30
Clerical	—	0.32	0.32
Manual	—	0.28	0.38

Notes: "Longest" job refers to a job that lasted for at least 10 years, with a wage that peaked after age 45 and 1963. Maximum wage is calculated assuming individuals work 40 hours and 52 weeks. Note that these three categories of workers are not exhaustive of the AHEAD population and so shares do not add to one. All quantities are calculated as weighted means except for wage, which is measured at the median. *Data source*: AHEAD.

Table 12
Reasons for Retirement

Age	"Forced"	Poor health	Wanted to do other things	Didn't like work	Spend time with Family	"Forced", not family or health[1]
50-58	0.38	0.24	0.25	0.04	0.32	0.15
59-61	0.40	0.35	0.30	0.09	0.36	0.09
62-64	0.31	0.18	0.27	0.07	0.34	0.13
65-67	0.28	0.16	0.29	0.05	0.37	0.13
68-70	0.28	0.13	0.25	0.05	0.31	0.18
71-74	0.31	0.13	0.19	0.04	0.26	0.16
75-79	0.40	0.25	0.14	0.04	0.27	0.19
≥80	0.46	0.25	0.10	0.08	0.19	0.25

Notes: [1]Percentage of retirees who reported being forced to retire but did not report family or poor health being important. *Data source*: HRS98.

Table 13
Characteristics of Job Leavers and Stayers

	Wave 1 to Wave 2		Wave 2 to Wave 3	
	Leavers	Stayers	Leavers	Stayers
Share of workers	0.37	0.63	0.41	0.59
Died	0.08	—	0.15	—
Stay in same job	—	0.87	—	0.75
Entered nursing home	0.02	0	0.03	0.01
Age	74.7	73.8	74.4	73.7
Female	0.47	0.42	0.50	0.41
Married	0.58	0.64	0.54	0.64
Education	11.9	12.4	11.8	12.5
Median total wealth	$254K	$287K	$285K	$306K
Excellent or very good subjective health	0.42	0.58	0.48	0.63
≥2 ADL difficulties	0.15	0.07	0.20	0.08
Hours	21.5	25.4	21.5	24.9
Weeks	41.9	45.8	42.5	45.1
Variable schedule*	0.55	0.50	0.23	0.18
Median hourly wage	8.56	8.63	6.92	8.43
Self-employed	0.41	0.44	0.43	0.48
Job is stressful**	0.14	0.11	0.05	0.03
N	221	383	208	285

Notes: *Hours vary from week to week. **The question changed between the waves, thus making the levels non-comparable. All characteristics except death and change in health status are measured as of the initial wave; death and change in health are measured between waves. All means are weighted. *Data source*: 1993-98 AHEAD.

Table 14
Labor Force Participation Rates by Total Wealth and Previous Labor Force Status

	Labor Force Participation Rates			
Wealth Quintile	W1 LFPR	W2 LFPR | W1 Working	W2 LFPR	W3 LFPR | W2 Working
High	0.15	0.66	0.13	0.63
4	0.10	0.64	0.08	0.59
3	0.07	0.68	0.08	0.58
2	0.07	0.53	0.06	0.54
Low	0.03	0.61	0.03	0.60

Notes: See text for details of wealth measurement. *Data source*: 3 waves of AHEAD.

Table 15
OLS Regressions of Labor Force Transitions

	Pr[W2 Working=1 | W1 Working=1]	Pr[W3 Working=1 | W2 Working=1]
Age	-0.008	0.003
	(0.006)	(0.007)
Female	0.001	-0.067
	(0.051)	(0.067)
Married	-0.035	0.065
	(0.053)	(0.069)
Education	0.009	0.009
	(0.007)	(0.010)
Log(bequeathable wealth)	-0.016	-0.001
	(0.015)	(0.020)
Log(pdv-income)	-0.002	-0.082
	(0.043)	(0.059)
Health Characteristics		
Good health	0.069	0.051
	(0.042)	(0.055)
Health better	0.081	-0.116
	(0.070)	(0.096)
Health worse	-0.150	-0.126
	(0.051)	(0.066)
ADL difficulties	-0.088	-0.083
	(0.028)	(0.039)
ADL diff. change	-0.128	-0.159
	(0.019)	(0.030)
Job Characteristics		
Log(wage)	-0.032	0.010
	(0.016)	(0.019)
Self-employed	0.021	-0.013
	(0.045)	(0.058)
Stressful job	-0.039	-0.061
	(0.061)	(0.125)
Occ: Clerical	-0.108	-0.114
	(0.052)	(0.067)
Occ: Manual	-0.091	-0.113
	(0.062)	(0.079)
R^2	0.17	0.16
n	513	367

Notes: *Data source*: AHEAD.

Appendix A

Table A-1
Labor Force Participation by Gender, Age, and Year

	Age						
Year	50-58	59-61	62-64	65-69	70-74	75-79	80+
A. Males							
1963-65	0.764	0.700	0.586	0.339	0.177	0.113	0.065
1966-68	0.791	0.716	0.611	0.357	0.188	0.116	0.056
1969-71	0.797	0.722	0.598	0.359	0.201	0.113	0.055
1972-74	0.784	0.717	0.553	0.306	0.190	0.097	0.050
1975-77	0.763	0.659	0.491	0.264	0.165	0.096	0.033
1978-80	0.752	0.632	0.465	0.270	0.160	0.102	0.043
1981-83	0.741	0.612	0.420	0.245	0.145	0.087	0.044
1984-86	0.741	0.611	0.415	0.235	0.133	0.070	0.037
1987-89	0.745	0.597	0.410	0.246	0.137	0.081	0.041
1990-92	0.741	0.604	0.397	0.236	0.136	0.076	0.046
1993-95	0.751	0.592	0.409	0.242	0.137	0.085	0.055
1996-98	0.764	0.607	0.421	0.255	0.142	0.089	0.049
B. Females							
1963-65	0.448	0.354	0.267	0.172	0.081	0.041	0.011
1966-68	0.490	0.407	0.306	0.174	0.095	0.044	0.020
1969-71	0.502	0.435	0.328	0.182	0.092	0.046	0.017
1972-74	0.505	0.420	0.303	0.156	0.081	0.039	0.018
1975-77	0.498	0.403	0.286	0.154	0.082	0.040	0.014
1978-80	0.523	0.405	0.286	0.154	0.082	0.042	0.014
1981-83	0.524	0.405	0.276	0.155	0.075	0.039	0.015
1984-86	0.560	0.408	0.278	0.144	0.081	0.039	0.015
1987-89	0.578	0.435	0.300	0.161	0.080	0.046	0.021
1990-92	0.608	0.438	0.295	0.165	0.085	0.051	0.021
1993-95	0.633	0.462	0.312	0.169	0.089	0.047	0.022
1996-98	0.659	0.470	0.326	0.188	0.094	0.051	0.021

Notes: Labor force participation defined as having positive labor earnings and weeks worked.
Data source: 1964-99 March CPS.

Table A-2
Sample Size by Age and Year: CPS

	Age						
Year	50-58	59-61	62-64	65-69	70-74	75-79	80+
1963-65	28,065	7,545	6,975	9,870	7,931	4,887	3,563
1966-68	41,094	11,603	10,286	14,570	11,027	7,076	5,498
1969-71	40,192	11,345	10,007	13,998	10,503	7,392	5,655
1972-74	37,253	10,838	9,773	13,778	10,513	7,116	5,700
1975-77	41,629	12,293	11,045	15,648	11,698	7,785	6,651
1978-80	46,882	14,041	12,753	18,482	14,053	9,261	8,234
1981-83	42,746	13,520	12,131	17,621	13,787	9,294	8,539
1984-86	39,331	12,804	12,436	17,635	14,190	9,592	8,981
1987-89	36,372	12,241	11,979	18,155	13,993	10,035	8,938
1990-92	36,741	11,625	11,463	18,264	14,685	10,314	9,881
1993-95	35,423	9,917	9,909	15,472	13,841	9,818	9,986
1996-98	35,205	9,283	8,654	13,936	12,251	9,277	9,158

Notes:. *Data source*: 1964-99 March CPS.

Table A-3
Sample Size by Age and Year: HRS98

	n	
Age	Total	Working
50-58	4,931	3,408
59-61	2,363	1,313
62-64	2,202	843
65-67	2,001	468
68-70	1,679	281
71-73	1,586	181
74-76	1,428	136
77-79	1,359	87
≥80	3,042	86

Notes: Sample conditioned on having non-missing earnings and labor supply data. *Data source*: HRS98.