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ABSTRACT

The recent decline in the labor force participation rates of older Americans is well known and well documented. Dramatic changes in male participation rates occurred between 1968 and 1986. Declines were substantial as early as age 55 and as late as age 70. The trends for older women were much less dramatic. In 1988, nearly half of employed men and more than half of employed women aged 65 and over were working part time, voluntarily, compared to about 6 percent of men and 23 percent of women less than 65. Older workers were more likely to be self-employed than were members of any other age group. Determinants of the retirement decision included economic incentives, health, and labor market obstacles. Mandatory retirement has virtually been eliminated. Social security amendments will delay the age of eligibility for full retirement benefits to 67. These changes should work to increase the labor force participation of older workers, although recent research suggested that the impact will be modest. Little is known about how employer pension plans will change in response to social security rule changes. Surveys suggested that many older workers would like to retire gradually, although currently only a minority do. Policies that facilitate gradual retirement by making it less costly for firms to hire part-time workers and less costly for older workers to accept part-time employment should be considered. (A 73-item reference list is included in the document.) (CML)

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Richard V. Burkhauser

Vanderbilt University

and

Joseph F. Quinn

Boston College

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Richard V. Burkhauser
Vanderbilt University

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Joseph F. Quinn
Boston College

The artful policymaker can anticipate tomorrow's crisis and develop plans to ameliorate it. Such plans may seem puzzling to those concerned with today's and yesterday's crises. No demographic phenomenon has provided a greater ongoing challenge to the policy-maker's art than the aging of the post World War II babyboomers. In the 1950s they created a shortage of maternity beds and four bedroom housing in the suburbs. In the 1960s they forced a massive increase in public school facilities. In the 1970s and 1980s boomers sorely tested the economy's ability to create jobs for young adults.

This continuing shift in the age structure has been a leading cause of economic and social changes in American society over the past four decades. It is notable that these changes have lead to expansions as well as contractions of services. The trek to the suburban ranch homes of the 1950s is now matched by a return to the two and three bedroom condos in the central cities. Despite the echo effect of the babyboomers' own babies, maternity facilities are well below their peak years. School enrollment is down and belt tightening is seen throughout the education industry.

Such ebbs and flows in the product market have their counterpart in the labor market. Many policies developed in an era when job creation was the major labor market crisis must be reconsidered as the possibility of future labor shortages arise.

The possibility that the babyboomers' exit from the labor market of the 21st century will lead to such shortages motivated the Report of the Secretary of Labor entitled Older Worker Task Force: Key Policy Issues for the Future (January 1989). In our review paper, we will look at the changes in labor force participation of older workers over the last two decades and summarize the available evidence regarding the importance of economic and other factors in those decisions. In so doing we will argue that our current retirement system is not neutral with respect to work effort across life. Rather it has systematically encouraged workers to work full-time with a single firm until retirement age and then go into full-time retirement. Reforms of the system initiated in the 1970s and early 1980s are not likely to change this behavior dramatically unless employers also change their retirement plans.

I. Labor Supply at Older Ages

The recent decline in the labor force participation rates of older Americans is well known and well documented. Since some of the retirement incentives discussed below go into effect at particular ages, it is useful to look at trends for one-year age categories.

Table 1 shows that participation trends in the postwar period varied over time and across ages. The first great reduction in the work effort of older men occurred during the 1950s, as the coverage of the Social Security System expanded dramatically. The participation rates of men aged 65 and over fell by about a quarter while those of men aged 55, 60 and 63 remained about the same. Between 1960 and 1970 there were only modest declines for these older men. Labor force

Table 1: Male labor force participation rates by age, 1950 - 1986

Year/Age	55	60	63	65	68	70
1950	87.8	82.1	77.6	67.7	54.2	44.5
1960	89.9	83.2	75.7	53.6	39.4	33.2
1970	91.8	83.9	69.4	49.9	39.4	30.1
1972	90.7	82.1	66.5	45.2	33.8	27.1
1974	88.0	79.0	59.2	39.8	27.7	23.5
1976	87.1	75.5	55.7	36.6	26.7	22.4
1978	85.8	74.4	52.2	36.3	28.7	21.7
1980	84.9	74.0	52.3	35.2	24.1	21.3
1982	86.4	72.1	45.2	30.6	24.8	21.1
1984	84.3	70.2	48.2	30.4	21.3	18.8
1986	84.1	69.2	44.3	30.7	20.7	17.1

Source: Labor force participation rates for 1950 and 1960 are based on decennial U.S. census data. Thereafter, they are from unpublished Department of Labor statistics, based on annual Consumer Population Survey labor force participation questions.

participation of those aged 55 and 60 continued to increase slightly during this decade of strong economic growth. Men aged 62 to 64 were first eligible for Social Security benefits in 1961, and their labor force participation fell after that year by nearly 10 percent by 1970. Between 1970 and 1980 substantial reductions in labor force participation occurred at each age between 55 and 70. The rate of decline has been more modest since then.

Figure 1 shows the dramatic changes in male participation rates by individual ages (55 to 70) between 1968 and 1986. Over these two decades, participation fell for every single age. In absolute terms, the declines are the largest between ages 62 and 65, the ages of eligibility for reduced and full social security retirement benefits. But the declines are substantial as early as age 55 and as late as 70. In proportional terms (as a percentage of the 1968 rate), the decreases continue to rise past age 65. For men 62 and older, participation rates have dropped by 30 to 45 percent over the past 20 years.

The trends for older women are much less dramatic. The 5-year cohort pictures over the past 2 decades are basically flat--the combined effects of increased participation by women and decreased participation by the elderly. For elderly women, they approximately cancel. Slight declines are observed for women 60 and older, and a small increase for those 55 to 59.

Further investigation reveals that the retreat from work at older ages is even greater than these participation statistics reveal. Fewer older Americans are working and, of the ones who are, fewer are

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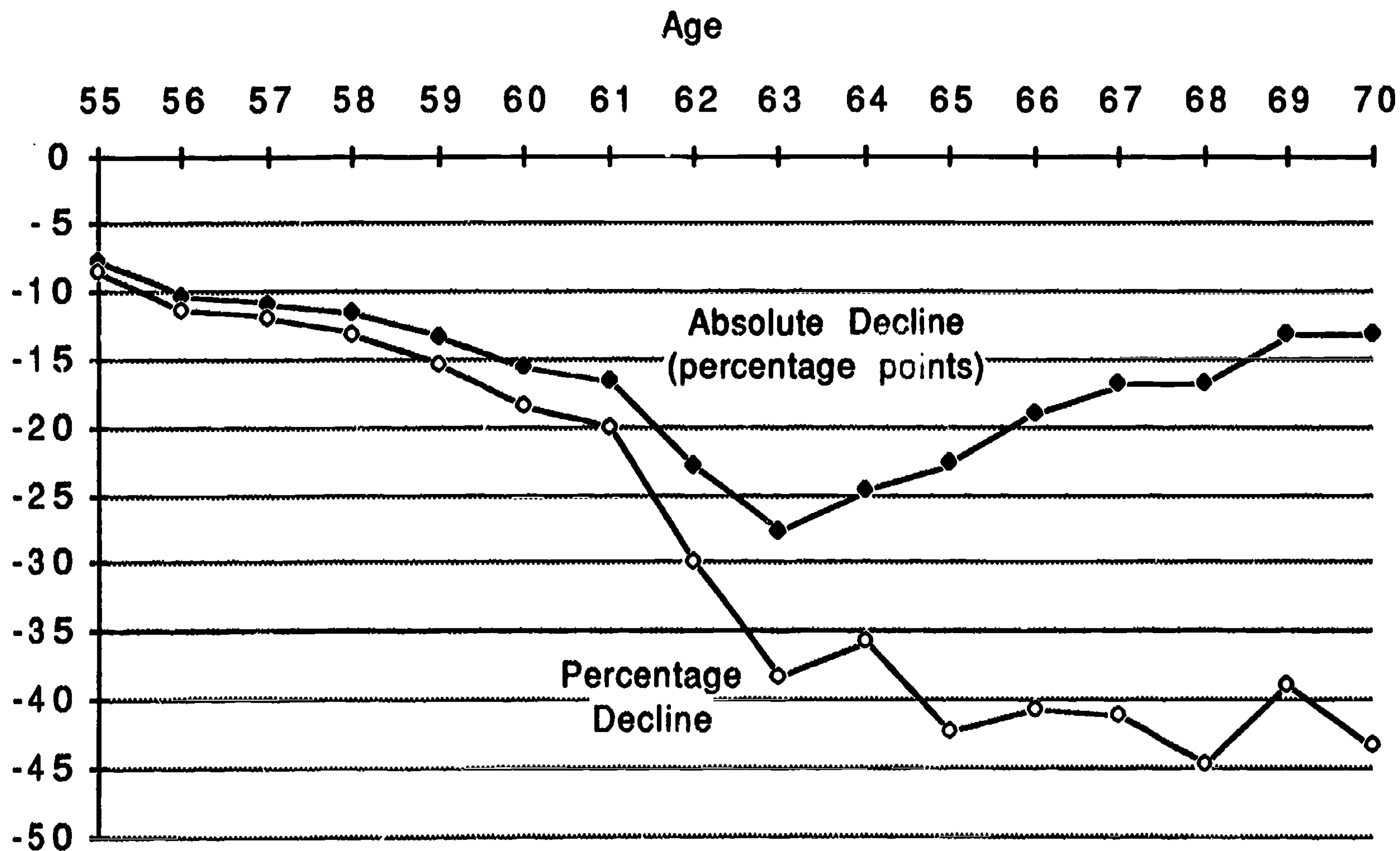
Figure 1



Source: Burkhauser and Quinn (1989)

working full time. In 1988, nearly half of employed men and more than half of the employed women aged 65 and over were working part time (and the vast majority voluntarily), compared to about 6 percent of men and 23 percent of the women less than 65. The proportion of older Americans employed part time has been growing over time--from one-third to nearly one-half for men, and from 50 to 60 percent for women between 1968 and the present.

Finally, older workers are more likely to be self-employed than are members of any other age group. In 1986, one-quarter of all working men over 64 were self-employed, compared to less than 10 percent nationally. The self-employed are less likely to retire than are wage and salary workers, and many of the latter have turned to self-employment late in life (Quinn 1980, Fuchs 1982). Both Becker (1984) and Blau (1987) suggest that the number of self-employed is currently on the rise.

II. Determinants of the Retirement Decision

The labor supply of older Americans has declined dramatically over the past four decades. Work beyond age 65 was once common but is now rare. Circumstantial and econometric evidence suggest that our retirement income programs play an important role in this drama. Social security and employer pensions grew significantly over this same period and the financial incentives imbedded in these plans discourage work late in life.

Since its inception in 1935, the social security program has expanded coverage (which is now nearly universal), relaxed eligibility rules and provided large increases in real benefits. Ycas and Grad

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(1987) estimate that by 1984 over 90 percent of all aged couples and single persons received social security benefits, and that this one source provided almost 40 percent of their aggregate income. Since 1950, real social security expenditures in 1987 dollars (excluding Medicare) have grown from $5 to over $200 billion per year, from 2 to 20 percent of all Federal spending, and from negligible to almost 5 percent of GNP (Quinn, Burkhauser and Myers, 1989).

Over the postwar period, employer pensions have grown as well. Kotlikoff and Smith (1983, Table 4.1.1) report that the number of private pension plans in America rose from 14,000 to over 600,000 between 1950 and 1980. Turner and Beller (1989, Table 1.3) estimate that there were 870,000 plans in 1987, covering 42 million workers, 16 million of whom were covered by 2 or more plans. Pension coverage increased from a quarter to a half among private sector wage and salary workers, and from 60 to 90 percent among state and local government workers (Kotlikoff and Smith, op. cit., Tables 3.1.2 and 3.1.3; Turner and Beller, op. cit., Table 13.2). The growth of social security and pension plans and the declining labor supply of the aged could be related for at least two reasons. Burkhauser and Warlick (1981), Moffitt (1984) and Boskin, Kotlikoff, Puffert and Shoven (1987) have shown that retiring cohorts up to now have received aggregate social security benefits that far exceeded the present value of the contributions made by them and their employers. These intergenerational transfers of wealth may have financed earlier retirement. But, in addition, social security and pension plans alter the lifetime pattern of compensation for many workers, subsidizing work at some

ages and penalizing it at others. We argue that these wage changes may have induced early retirement for many workers.

A. Economic Incentives

There is growing evidence that the financial incentives inherent in our social security and employer pension plans are important determinants of work across an individual's life. Social security and pension plans not only affect work decisions at older ages but may also influence behavior at younger ages as well.

A one-period framework is inappropriate for understanding retirement incentives. Social security and employer pensions are multi-period in nature. Contributions are made during the work life and a stream of benefits is repaid later. The two are usually connected, although the association can be very loose. Current work decisions alter future benefit streams. Social security benefits depend on one's average monthly earnings, which change with continued work. Employer pension plans are many and varied. Defined benefit pensions, which provide primary coverage for most covered workers, are usually based on some combination of years of service and average salary, often over the last few years.

Since retirement income rights are entitlements to future income, they are best described by the present discounted value of the expected stream--their asset or wealth equivalent. This depends on the size of the future benefits, when they are claimed, the life expectancy of the individual (and spouse, in some cases) and the discount rate. When viewed this way, these rights have positive value even before one is eligible to receive them.

Prior to eligibility, an additional year of work usually increases future benefits and therefore the asset value of pension rights. This _increase_ in pension wealth (called pension "accrual") is really part of compensation--the reward for working another year.

Ippolito (1987) and Kotlikoff and Wise (1985) show that the method by which most defined benefit accrual is calculated leads to substantial losses in pension wealth if a worker leaves full-time employment with a firm before the age of pension eligibility since accrual rises over a worker's tenure with the firm. Allen, Clark, and McDermed (1987) provide empirical evidence supporting this view. After eligibility, however, if one stays on the job accrual is likely to fall and may become negative.

An employee eligible for benefits who is considering working another year is really choosing between two retirement income streams, one starting today and another beginning in a year but with higher annual benefits. If the asset value of the second stream is larger, the employee receives a paycheck _plus_ the wealth accrual for working that year. Total compensation exceeds traditionally defined earnings. But if the second (delayed) stream is smaller in present value, true compensation is less than the paycheck by the amount of the wealth loss. Recent research suggests that the latter is the case for many older workers. They suffer pay cuts if they stay on the job too long, not directly via the paycheck, but more subtly, through the details of their retirement income plans.

Burkhauser (1979) found that the value of the pension stream for a sample of UAW workers fell by more than half between the ages of

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early and normal retirement. We have used a large sample of older men from the Retirement History Study (Irelan (1973)) to estimate the size and the effect of the incentives imbedded in social security and in employer pension schemes (Burkhauser and Quinn, 1983a,b; Quinn and Burkhauser, 1983). Social security benefits grow with additional years of work for two reasons. Average indexed monthly earnings (AIME) rise which in turn increase the annual retirement benefit. In addition, those who claim benefits before age 65 suffer a permanent actuarial reduction of 6 2/3 percent for each year of early receipt--a maximum reduction of 20 percent for those who start benefits at age 62. Viewed from the other end--age 62--there is an actuarial reward of 8.33 percent (6.67/0.8) for each year receipt is delayed, in addition to the benefit recalculation via the AIME. At age 65, this delayed retirement credit drops to 3 percent per year of delay. The price paid for higher benefits in the future is a year without benefits in the present. Social security wealth may rise or fall, depending on the asset value of the two streams.

We found that for the median full-time worker in 1973, social security wealth rose slightly with continued work at ages 63 and 64. But at age 65, because of the drop in the delayed retirement credit, social security wealth decreased sharply for those who worked to age 66. The median wealth loss was about a third of annual pay--a significant pay cut indeed. The pension story was similar, although the estimates were less reliable because the pension data were much more limited.

Fields and Mitchell (1984a,b,c) examined the details of 14 specific pension plans and estimated the incentives facing workers at each age between 60 and 68. They found that the asset value of pension rights tended to rise and then fall, peaking between ages 60 and 65. With samples of men from one of their pension plans and from the Retirement History Study (RHS), they calculated total lifetime income (from age 60 on) for each retirement age between 60 and 68. This is the sum of the present values of earnings, social security and pension benefits. The total rises with each year of additional work, since earnings exceed retirement benefits. But the <u>increase</u> in the total (the true compensation for the additional year of work) falls monotonically, and at age 68 is less than 40 percent of what it was at age 60. This is the declining compensation profile facing older Americans.

Rhine (1984) surveyed executives of 363 companies, and found that nearly two-thirds of the firms had attractive early retirement provisions--either unreduced pension benefits, usually at age 62, for employers who met age and service requirements, or less than actuarial reductions, usually at age 55. These all encourage early retirement. One-third had also made "open window" offers--additional financial incentives for older workers to leave available to them over short periods of time.

Finally, Kotlikoff and Wise (1987b) studied the accrual patterns of over 2,000 plans and found a wide variety of incentives. Their accrual rate is the annual change in pension wealth divided by wage earnings for that year. Positive accrual rates describe a wage

supplement, and negative ones a wage cut. They find considerable evidence of the latter.

It is now generally agreed that retirement income rights are best viewed as assets whose values depend on when they are claimed. Changes in these asset values with continued work are part of compensation and wealth losses are equivalent to pay cuts. At some age--certainly by 65 but often much earlier--these retirement plans provide strong incentives to retire. Do workers respond to these inducements by leaving the job and perhaps the labor force as well?

Considerable research suggests that people behave as though they understand and respond to these incentives. Burkhauser (1979) showed that auto workers were more likely to accept pension benefits and leave the firm the larger the pension wealth loss associated with continued work. Rhine (1984) found that "employees in companies that provide attractive early-retirement benefits tend to retire earlier than those in companies without such incentives." With a much larger and more representative sample from the RHS, we found the same effect for both social security and pension wealth changes. In fact, we concluded that much of what looked like a mandatory retirement effect at age 65 was really due to the financial incentives that occurred at the same time (Burkhauser and Quinn, 1983b).

Burtless and Moffitt (1984, 1985) confirmed that the social security system influences retirement behavior. They defined retirement as a discontinuous drop in hours of work, and found dramatic clustering of retirement around ages 62 (the earliest age of eligibility) and 65 (when the delayed retirement credit drops). They

also showed that retirees who continued to work reported earnings clustered around the amount that social security permitted without loss of benefits. More than a third earned between 80 and 110 percent of the "exempt amount," and many more were below than above (Burtless and Moffitt, 1985).

Sickles and Taubman (1986), also using the RHS, combined earnings and the change in social security wealth into one variable and found that "the gain from postponing retirement (was) the most significant of the income variables." With a different methodology and data set, Mitchell and Fields (1984) concluded that "individuals who have more to gain by postponing retirement do in fact retire later." Kotlikoff and Wise (1987a) studied the employees of one particular firm and showed that "inducements in the (pension) plan provisions to retire early have had a very substantial effect on the departure rates from the firm." In summary, modern research has established that financial incentives do influence retirement behavior.

B. Health

Financial incentives are important determinants of the decision to retire but they are certainly not the only determinants. Individual decisions are extremely complex and depend on a vast number of factors, only some of which researchers can observe and measure. Physical and mental health, social networks, attitudes toward work and leisure, living arrangements, job characteristics, local labor market conditions, climate and expectations about the future are all

undoubtedly important. They interact with the financial incentives on which economists have :ocused to bring about the final result.

In empirical work, poor health is almost always associated with earlier retirement (see Sammartino, 1987, for a review of the recent literature on health and retirement). The effects are large and significant, and generally more so for early (prior to age 65) and very early (prior to 62) retirees (Parnes, 1988). Exact comparisons between studies are impossible because of the variety of definitions of retirement and health. Many researchers are skeptical about the usefulness of subjective health evaluations, especially when given as a reason for retirement or as part of an application for health-related benefits (Johnson, 1977; Myers, 1982; Parsons, 1982; Bazzoli, 1985; Parnes and Less, 1985; Baily, 1987). One fear is that health may be viewed as a socially legitimate reason for stopping work and be mentioned even when it is not the primary reason. Quinn (1977) found that among RHS respondents who claimed that they had no health limitations and health better than that of their peers, 10 percent still claimed health as the primary motivation for r.tirement. On the other hand, Sammartino (1987) and Burtless (1987) argue that self-evaluated health may be a superior measure because it includes information about the quality of health required on the individual's actual job. No one denies that health is, was, and always will be an important factor. The debate concerns its measurement and the precise nature of its effect.

Some recent studies have focused on health measures other than self-defined status at retirement. Parsons (1982), Kingson (1982),

and Anderson and Burkhauser (1985) utilized subsequent mortality. Bazzoli (1985) and Parnes and Less (1985) used self-reported health, but from a survey wave prior to retirement, and Chirikos and Nestel (1981) and Bazzoli (1985) created indices of impairments. Butler, Burkhauser, Mitchell and Pincus (1987) compared self reports on a specific condition--arthritis--with a clinical measure. Burtless (1987) compared three subjective measures with subsequent mortality and found them highly correlated.

These studies suggest that the use of self-defined health status at retirement exaggerates the importance of health in the retirement decision (though it remains important under any definition), and may muffle the measured effect of economic factors such as social security (Parsons, 1982), wages (Anderson and Burkhauser, 1985) and pension entitlement (Burtless, 1987). There is no general consensus on what the best measure is. What is known is that health is still a key determinant, despite recent emphasis on financial incentives, and that the magnitude of the estimated effect depends on the measure chosen.

Sickles and Taubman (1986) and Butler, Anderson and Burkhauser (1989) have proposed models in which health is endogenous. Since medical care depends on income, the financial variables in these models have two effects on the retirement decision--a direct one as in all modern models and also an indirect one via the impacts on health status.

One reason for the interest in health and retirement is the recent improvement in the life expectancy of the elderly. This suggests to some that workers may be able to work more years then than

they do now and has been used as partial justification for the legislated increase in the age of eligibility for full social security benefits to 67. But recent reviews by Chapman, LaPlante and Wilenski (1986) and by Ycas (1987) have cast some doubt on the popular presumption that life expectancy and health status go hand in hand. The trends on longevity are clear--older Americans are living longer now than they did two decades ago. The increases in life expectancy at ages 60 or 65 are well documented (see Chapman <u>et. al., op. cit</u>., pp. 27-28) and are significant for males and females and for whites and non-whites. What is surprising is that they do not seem to be accompanied by increases in average health status. Chapman <u>et. al</u>., reporting on a variety of studies and data sources, concluded that morbidity and the prevalence of disability have actually increased. Ycas used a number of measures of health status and found that they produced very similar patterns over time, which suggest increasing health problems at least through the late 1970s and perhaps a leveling off or reversal during the 1980s. One explanation of the declining health is the "failure of success"--that medical advances keep people alive today who would have died in the past (Berkowitz, 1988). The additional years may be ones of chronic illness, not good health. Regardless of the explanation, poor health remains a serious problem among the elderly and the impact of health on the retirement decision will be as important in the future as it is now.

C. <u>Labor Market Obstacles</u>

According to Jondrow, Brechling and Marcus (1987), many workers would like to retire gradually. In one survey, 80 percent of

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respondents over age 55 preferred part-time work to complete retirement. In another, 60 percent of a sample of managers preferred phased retire-ment. Two-thirds of another group said they would consider a transitional step of part-time employment. Most of these would have liked part-time work with their full-time employer. Despite these preferences, the modal pattern of retirement still involves an abrupt transition from full-time work to complete labor force withdrawal. Most wage and salary workers who are able to reduce hours must switch jobs to do so. Why do desires and opportunities not match?

One reason is that part-time wage rates are much lower than full-time compensation. According to Gustman and Steinmeier (1985a), older workers in the RHS who reported themselves partially retired suffered an hourly wage loss of 10 percent if they remained with their previous full-time employer and 30 percent if they did not. Quinn, Burkhauser and Myers (1989), using the same data set but a retirement definition based on hours of work, report similar findings--severe wage losses associated with movement to part-time work, especially if accompanied by a change in employer.

Why don't workers reduce hours on their career jobs? According to Gustman and Steinmeier (1983, 1985a), they do not because they cannot. Only 15 percent of firms responding to a 1979 survey permitted some employees to reduce hours as they approached retirement. Only 7 percent offered this option to all employees. A survey of individuals suggested that two-thirds to three-quarters of older wage and salary workers were unable to work fewer hours. Rhine

(1984) reported that only 3 percent of a sample of over 350 large firms permitted phased retirement. The self-employed, on the other hand, who do have considerable control over their hours, are much more likely to utilize a transitional period of partial retirement.

But even if workers were permitted to work part-time on their career jobs, they would do so for reduced compensation. Social security and most defined benefit plans offer declining and at some point negative wealth accruals to workers who stay on the job. Many older workers, then, face unattractive alternatives as they age. Continued full-time employment on a career job eventually results in significant losses of retirement income wealth; in essence, a pay cut. Part-time work on this job is rarely available for the wage and salary population, and even if it is, it also may result in reduced retirement income wealth. New part-time (and to a lesser extent, new full time) employment means a significantly lower wage rate. Faced with these alternatives, many older Americans stop working. Is the decision voluntary? Yes, in the sense that they choose to do it under the circumstances. But no, in that the circumstances may have changed dramatically as they aged.

III. Patterns of Withdrawal from the Labor Force

Most recent research has focused on the theoretical formulation of the retirement decision and on the specification of the explanatory variables, particularly the financial incentives. Much less attention has been paid to the left-hand side of the equation--the behavior being explained. Retirement has generally been modeled as dichotomous and irreversible. Recent work suggests that for many Americans,

actual withdrawal patterns are far more varied than the simple views that have dominated the literature.

A. The Extent of Partial Retirement

Partial retirement is actually a common phenomenon in the United States. With the initial wave of the RHS, Quinn (1980, 1981) found that 5 percent of wage and salary workers (aged 58-63) and 12 percent of the self-employed described themselves as partially retired in 1969. Fuchs (1982) showed that many of the self-employed have turned to self-employment late in their careers (after age 58) and that they are more likely to work reduced weekly hours than are salaried employees. Data on annual labor supply confirm that the self-employed have a much wider distribution of hours. The distribution of wage and salary workers is dominated by the mode around 2,000 hours, while the self-employed are more evenly spread around it (Quinn, 1981).

Honig (1985) and Honig and Hanoch (1985) classified as partly retired anyone earning less than 50 percent of their maximum annual earnings. With this definition, they found that from 14 to 27 percent of white married wage earning men aged 58 to 67 became partly retired between 1969 and 1973. Honig and Reimers (1987) analyzed monthly earnings, raised the definition of partial retirement to less than 80 percent of maximum (monthly) earnings and, of course, found even more of it. Although this definition may be overly broad, they are correct to conclude that retirement in the United States is a much more complex phenomenon than the "either-or" framework implies.

Gustman and Steinmeier (1984a,b, 1985a), using four waves of the RHS (1969-75), found that the proportion of wage and salary workers

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(aged 58-69) who call themselves partially retired rises with age and that about a third of the sample was partially retired at some time during that period. They also showed that partial retirement usually involves a job change and a pay cut, which led them to conclude that most career jobs have minimum hours constraints. All this work illustrates that studies dichotomizing older workers as either "retired" or "not retired" obscures partial retirement as an important avenue of labor force withdrawal.

B. Exit Patterns from Career Jobs

Quinn, Burkhauser and Myers (1989) have used the full 10 years of the RHS to analyze patterns of disengagement from career jobs, defined as full-time jobs held at least 10 years. They show, as did Hall (1982) and Addison and Castro (1987), that most Americans spend considerable time on a single job. This pattern of long tenure on a "career" job is consistent with the view that defined pension plans substantially penalize those who leave a career job "early." The transition from this job is an important event. Many leave this career job and the labor force simultaneously, but many do not.

Over a quarter of the wage and salary employees in the Quinn, Burkhauser and Myers sample did not stop work when they left full-time career employment. Of those who remained employed, most took on a new position quickly and stayed at it for at least two years. The new positions often represented a new line of work, lower down the socio-economic scale, often at considerably lower pay. Many workers, of course, were augmenting these earnings with social security and/or pension checks.

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Although people of all types utilized these intermediate steps toward retirement, those at the extreme ends of the economic scale were most likely to do so. We suspect that the poor continue to work because they have to and because they do not face dramatic age-specific changes in their net pay since they are not likely to be eligible for pension benefits. The wealthy work because their employment provides more than a paycheck and also because they also are probably less affected by social security and pensions than are middle-class workers.

Iams (1987) reported similar findings with a recent sample of new social security retired-worker beneficiaries. Between a fifth and a quarter were still working 18-30 months after initial receipt of benefits. Most were working part time, usually by reducing hours per week. The median wage of those who switched employers was about half of that on their longest job or latest job, and many earned under the social security earnings test threshold.

Ruhm (1988a,b) has argued that the "job-stopping" process with which older workers leave the labor force is similar to the "job-shopping" process with which they enter. Between these periods, which are often characterized by multiple job holdings and part-time work, the typical worker has a career job for a significant number of years.

Ruhm defines the career job as the longest job held, regardless of when that was or how long it lasted. He finds that fewer than half of the RHS sample retired directly from a career employment. Most held at least one "bridge" job before exiting the labor market. Given the definition of career, Ruhm finds a wide distribution of years on

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post-career jobs; many in fact are really second careers. He finds that three-quarters of his sample changes industry or occupation between career and bridge jobs, and almost half changed both.

What this research suggests is that work after "retirement" is not a rare event. But substantial changes are required in both current social security and pension legislation before middle-class workers are likely to stay at work past their early 60s.

IV. Recent Changes in the Institutional Environment

The institutional environment surrounding retirement is itself changing. Important legislation concerning mandatory retirement and social security has passed in recent years and the nature of pension plans continues to evolve. These changes and others prompted by the aging of the population may combine to reverse the recent trend toward earlier retirement.

A. Mandatory Retirement Rules

In 1978, an amendment to the Age Discrimination in Employment Act outlawed mandatory retirement before age 70 for most American workers. The exceptions included those in occupations with bona fide age related job requirements and certain executives eligible for large pensions. Many states went further, and outlawed mandatory retirement at age 70 as well (Rhine, 1984). In 1986 the federal government followed suit, and mandatory retirement, with a few exceptions, has been eliminated.

Casual empiricism suggests that these changes might drastically alter retirement patterns, since many workers used to retire at

mandatory retirement age (Barker and Clark, 1980). But econometric work indicates otherwise. Burkhauser and Quinn (1983b) found that mandatory retirement was closely intertwined with both social security and pension incentives. As described above, the social security delayed retirement credit drops significantly at age 65, from about 8 percent per year of delay to 3 percent (1 percent before 1982), which is less than actuarially fair. This implies a pay cut at age 65, which was also the most common age of mandatory retirement before 1978. In addition, mandatory retirement was usually accompanied by an employer pension plan which added work disincentives of its own. We argued that at least half of the difference in behavior between those with and without mandatory retirement was due to other factors, primarily financial incentives, and that even the unexplained residual was an overestimate of the mandatory retirement effect (Burkhauser and Quinn, 1983b). Therefore we expect that the mandatory retirement legislation will have only a modest effect on elderly labor supply (see Morrison (1988) for more detail). The stick is gone, but the carrots remain.

B. Social Security

Because of fears about the future financial solvency of the social security system and the labor market implications of earlier retirement in an aging society, the Greenspan Commission was appointed to investigate policy options. Their recommendations led to the 1983 Amendments to the Social Security Act, several of which were designed to prolong the working life of older Americans (see Svahn and Ross (1983) for details of the amendments). The age of eligibility for

full social security benefits is scheduled to rise from 65 to 66 by the year 2009 and to 67 by 2027. Benefits will still be available to age 62, but the reduced benefits will only be 70 percent of the full amount rather than the current 80 percent. In addition, the benefit loss associated with additional dollar of earnings above the exempt amount will drop from 50 to 33 cents for full benefit retirees after 1990. Finally, the delayed retirement credit after age 65 will rise slowly from 3 to 8 percent per year of delay by the year 2009. All of these changes reward additional work and should help reverse the trend toward earlier retirement. Analysts agree on the direction but not the size of the effect.

Burtless and Moffitt (1984), Fields and Mitchell (1984b), and Gustman and Steinmeier (1985b) have simulated the effects of reforms like those of 1983. They all find that the aggregate impact on retirement age is modest--average delays on the order of months, not years. Burtless and Moffitt (1984) and Sickles and Taubman (1986) have hinted that delaying or eliminating social security eligibility at age 62 (which has not been legislated) would have much a larger effect on behavior. But all of these estimates are only preliminary, because they assume that the rest of the environment, especially employer pensions, remain unchanged. As we argue below, this is the great unknown.

C. Employer Pensions

The growth in employer pension coverage has ceased. According to Turner and Beller (op. cit., Table 13.2), the proportion of private sector workers covered has hardly changed since 1970. Recent news has

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not been in coverage, but rather in the changing distribution of types of plans.

Most workers with pensions still have primary coverage in a defined benefit plan in which the worker is promised an annuity upon retirement from the firm. The benefit is usually based on some combination of earnings and years of service (Schulz, 1988). There are also defined contribution plans, in which the firm periodically deposits funds into an account that belongs to the worker upon retirement. These are basically just savings accounts with tax advantages.

According to Turner and Beller (op. cit., Table 4.12), fewer than 13 percent of the private sector workers with pension plans had their primary coverage in a defined contribution plan in 1975. Ten years later, this had risen to nearly 30 percent. Defined contribution plans are even more popular as supplementary coverage where they are nearly universal. There are at least two implications of this. First, the investment risk is shifting from the firm to the employee. But more important from our perspective, the retirement incentives are very different. The complex and powerful accrual patterns discussed above all come from the benefit calculation formulas of defined benefit plans, which discourage work after the age of normal retirement if not sooner. There is no such work disincentives with defined contribution plans, because the employer's contribution is merely a constant wage supplement. Nearly half of all private pension coverage is still in defined benefit plans (ibid., Table 4.11) (and Ippolito (1986, Ch. 6) argues that this will remain

so), so the discussion above is still relevant to understanding the current environment. But if the trend toward defined contribution plans continues and if the social security delayed retirement credit after age 65 becomes close to actuarially fair as scheduled, then the importance of these work disincentives at older ages will diminish.

V. What Can Public Policy Do To Increase Work Effort at Older Ages?

The research we have reviewed suggests that retirement trends are not exogenous. On the contrary, they are influenced by public policy. The institutional environment continues to evolve. Some changes are already underway or legislated for the future; others may occur as the composition of the work force shifts; and others may take additional specific legislation.

What changes are currently underway? Mandatory retirement has virtually been eliminated. The proportion of workers covered by age neutral defined contribution pension plans is on the rise. Social security amendments already on the books will delay the age of eligibility for full retirement benefits to 67, increase the penalty for retiring at age 62 from 20 percent to 30 percent of full benefits, decrease the earnings test tax rate from a half to a third and augment the delayed retirement credit for work beyond normal retirement age from 3 percent to 8 percent per year of delay. All of these changes should work to increase the labor force participation of older workers. But recent research suggests that the impact of the removal of mandatory retirement and the legislated changes in the social security rules on retirement patterns will be modest.

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These results however must be viewed with caution. The studies on which this prediction is made estimate first round effects only. In the simulations mentioned above, Burtless and Moffitt (1984), Fields and Mitchell (1984b), and Gustman and Steinmeier (1985b) change social security rules but assume that employer pension plans remain as they are. But we believe pension plans will change. As we have shown, recent evidence suggests that pension incentives are very important in determining individual and aggregate behavior. The fact that work effort has fallen dramatically between ages 55 through 61, ages below the minimum for early social security retirement benefits, suggests that social security incentives were not the only reason for reduced work at older ages.

Hence, a key factor, about which very little is known, is how employer pension plans will change in response to social security rule changes. Some of the interaction, in "integrated plans," is automatic. Pension benefits in these plans depend on the amount of social security benefits, and an implicit tax rate is built into the benefit calculation rules. If social security benefits decrease, the pension automatically rises, though perhaps not dollar for dollar. This tends to offset the effect of social security changes. Since about two-thirds of full-time participants in defined benefit pension plans are in plans "integrated" in some way, this factor could be important (Herz and Rones, 1989). But beyond this, the rules of the pension plans are subject to change, and it is this response that is unknown, yet key to predicting the future. Will pensions augment or offset the changes in social security incentives? Would Congressional

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initiatives concerning pensions be nullified by other alterations in the compensation package? In general, how would the long run general equilibrium impacts compare to the short-run effects that have been estimated?

We simply do not know the answers to these questions. But we do know that ultimately the rules negotiated in the market by government, firms and unions will significantly effect the decisions workers make with respect to retirement. Most people do not retire because they can no longer find or perform work, as we once thought. Many now retire voluntarily, when they are still able to work and there is demand for their services. They do so because of the trade-offs they face in the marketplace. There are always people at the margin, and these people will change their behavior in response to changes in the choices before them.

As the first round simulations show, changes in social security legislation will have some effect in delaying retirement. But the currently slated changes will not in themselves dramatically effect length of stay in a career job. And it is this labor market decision--the departure from the career job--that is most important in determining work effort at older ages. Defined benefit pension plans continue to encourage job exit from a career job, often at the earliest possible retirement age. It is more likely that changes in pension rules, rather than social security rule changes, will have the greatest effect on full-time work on such jobs.

Bureau of Labor Statistics projections (U.S. Department of Labor, 1989) show that over the next 15 years, the population 55 and

older will increase while the population aged 16 to 34 will decline. Some foresee labor market shortages emerging from these demographic changes and a halt in the trend toward earlier retirement. If employers share this concern, then we may see substantial changes in current pension policy. If not, employers may tilt lifetime benefits even more toward those who leave at early retirement age in order to offset the social security changes that will occur.

There is already some evidence that employers changed pension plans to offset the effects of delaying (and later eliminating) mandatory retirement age. Mitchell and Luzadis (1988) studied changing incentives over time in a small number of specific pension plans. Between 1960 and 1970, when "social security reforms encouraged employees to opt for earlier retirement," they found that "in many cases private pension offerings adapted to accommodate these new retirement patterns." But during the 1970s, when mandatory retirement was increased from 65 to 70 and the movement to eliminate it altogether was gathering momentum, "pensions requiring mandatory retirement...altered their benefit incentives by 1980 so as to encourage earlier retirement."

If employers want to buck the social security trend, it is not easy to force them to change. For instance, the 1986 Amendments to the Age Discrimination Act require firms with pension plans to continue to provide service credit to those who continue with the firm past normal retirement age. But this will not prevent the firm from making early retirement benefits even more generous, in order to offset this rule.

But the ability to offset government policy does not necessarily translate into counter-action. One might argue that the opposite will occur. One reason that most pension plans in the United States chose age 65 as the normal retirement age is that social security used that age. One of the original purposes of social security policy was to encourage older workers to leave the labor force and, until 1972, earnings above an exempt amount were taxed at 100 percent and benefits postponed beyond age 65 earned no actuarial credit. Given these strong disincentives to full-time work, it is not surprising that firms developed institutions that conformed. To do otherwise would have required firms to pay workers higher wages past age 65 to offset the social security penalties. Although this is more debatable, the establishment of early social security benefits at age 62 may have encouraged firms to follow suit, to the degree that workers believed social security pension accrual fell past this age. The changes in social security benefit rules scheduled to begin in the next decade will reduce the fall in social security accrual past age 62, and change the foundation on which private pensions were built.

A final speculation concerns the influence of these rule changes on the type of work that will be done by older Americans. If pension rules do not change, we expect more work after departure from the career job and more second careers. This is because the easing of social security work disincentives will make work more attractive relative to complete retirement, but pension rules will continue to discourage continued employment <u>on the career job</u>. The result? Keep working but switch jobs to do so.

If firms actually counter social security rule changes with even stronger incentives to leave full-time work at early retirement age, then we predict even more part- and full-time work on post-career jobs. If, however, firms match the changes in the social security system with similar attempts to flatten pension accrual across the life cycle, then workers should delay departure from the career job.

A final and very important variation on this theme is the possibility of part-time work on a career job. This has the advantage of eliminating the loss of specific human capital that accompanies a job change and reducing the wage loss associated with part-time employment. Research has established that the self-employed, who rarely have pension related work disincentives, are much more likely than wage and salary workers to move from full- to part-time work on the same job. Currently, defined benefit pension rules, especially when benefits are based on earnings in the last few years of employment, make this a costly choice for wage and salary workers who desire part-time work. What may be needed is the introduction of partial pension schemes in which workers can combine partial pension benefits, as they can now with social security, with part-time employment on the career job. Such a program for workers aged 60 to 64 exists in Sweden. The labor force participation rate of older workers there is higher than in the United States, and response to this program has been very positive (Ginsberg, 1985). As the age of eligibility for full social security benefits rises to 67, the importance of such flexible pension schemes may grow. The key

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question again is whether labor market demands will induce firms to offer such flexibility on their own.

It is important for policymakers to recognize the difference between policies that encourage continued work _on any job_ and those that induce people to stay _on the career job_. The former include many of the social security changes already enacted and others that have been proposed, such as the total elimination of the earnings test, an earlier phase-in of the 8 percent delayed retirement credit for work past age 65, exemption of social security recipients from social security taxes on part-time earnings, or the suspension of the fringe benefits requirements under Section 89 of the Tax Code for part-time older workers. The latter focus on employer pension plans, and include policies favoring defined contribution plans, age neutral defined benefit plans, or flexible partial pension schemes.

Surveys of older workers suggest that many workers would like to retire gradually, to incorporate a period of partial retirement into the transition from full-time work to complete labor force withdrawal. Currently, only a minority do. Policies that facilitate this desire by making it less costly for firms to hire part-time workers and less costly for older workers to accept part-time employment should be considered.

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