Earnings and women's retirement security

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Chestnut Hill, Mass.: Center for Retirement Research at Boston College, 2006

Work Opportunities for Older Americans Series | Working Paper # 3

January 2006

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CRR WP 2006-12
Released: June 2006
Draft Submitted: May 2006

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Introduction

As the U.S. population ages, traditional sources of retirement income will likely fall short of what is needed to maintain pre-retirement living standards for many individuals. The reason for the shortfall is that economic and demographic pressures are eroding key sources of retirement income at the same time that increases in life expectancy are extending the retirement period. The issue of retirement security is especially important for women, because even today nearly 30 percent of single women, who represent a majority of households at older ages, are classified as poor or near-poor. Some of these women were single and poor as they entered retirement but many were married and suffered a large drop in income when their spouse died.

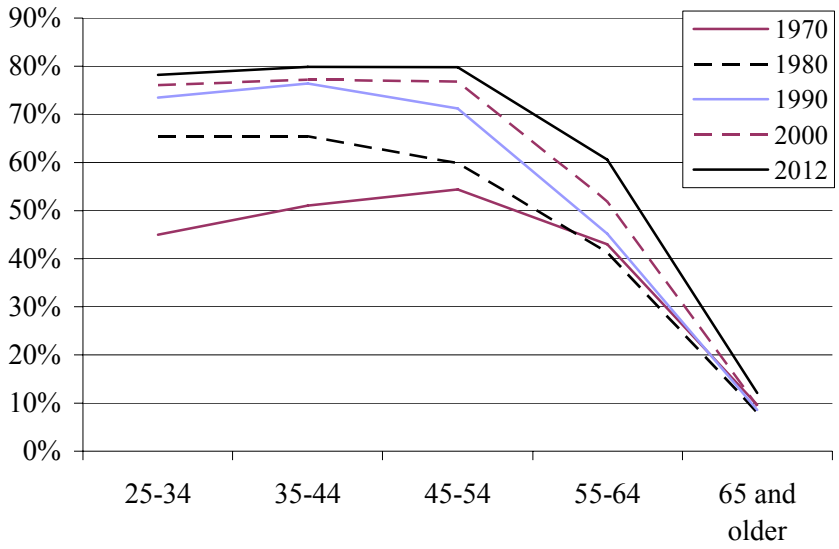
One solution to the retirement security challenge is for women to work more during their lifetimes and to stay in the workforce longer as they age. More work would enable women to build an earnings history of their own, and working longer is a powerful antidote to reductions in other retirement income sources. Working longer directly increases current income; it avoids the actuarial reduction in Social Security benefits; it allows people to contribute more to their 401(k) plans; and it postpones the day when they start drawing down their pension accumulations and/or other retirement savings. By and large, those who continue to work until their mid-60s or beyond do not end up poor. The question is what determines women's labor force activity at older ages and what determines when they retire. Only by understanding these levers is it possible to make changes that are likely to encourage stronger labor force participation, and thus greater retirement security, for women.

As a prelude to exploring the determinants of work and retirement for older women, this chapter first compares the labor force trends for women with those of men. Section 2 shows how these trends plus specific aspects of the retirement income system affect the well-being of women in retirement. Section 3 then describes the financial incentives, family considerations, and demographic characteristics that are likely to influence decisions about work and retirement. Section 4 reports results from the Health and Retirement Study (HRS) on how these factors affect the probability of older women being in the labor force, their planned retirement ages, and the likelihood of retiring earlier than expected. Section 5 concludes.

1. Trends in the Labor Force Participation of Older Women

Women's labor force attachment has increased dramatically since 1970. In 1970, less than half of women age 45 and younger were in the labor force; by 2000 almost 80 percent of women in this age group were in the labor force (Figure 1). Because of the increased labor force attachment when young, women approaching retirement today have much more experience in the labor force and are much more likely to be working than previous generations. Between 1970 and 2000, the share of women aged 55-64 in the labor force rose from 43 percent to 52 percent. And the U.S. Census Bureau projects a further jump to 61 percent by 2012.

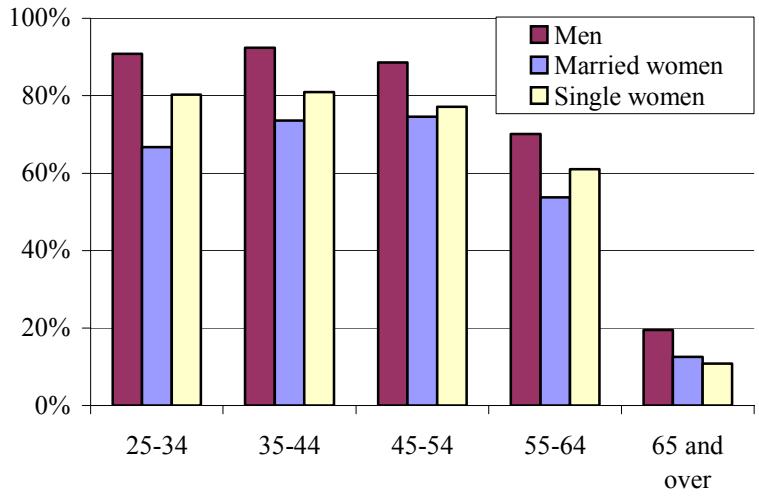
Figure 1. *Labor Force Participation among Women, by Age, 1970-2012*



Sources: U.S. Census Bureau (1995 and 2006).

Marital status matters for women's labor force participation. Below age 45, married women are noticeably less likely to work than single women. The gap narrows considerably among women age 45-54, and labor force participation rates for the two groups are quite similar. But as women approach retirement, the gap widens and married women are again less likely than single women to be in the labor force (Figure 2).

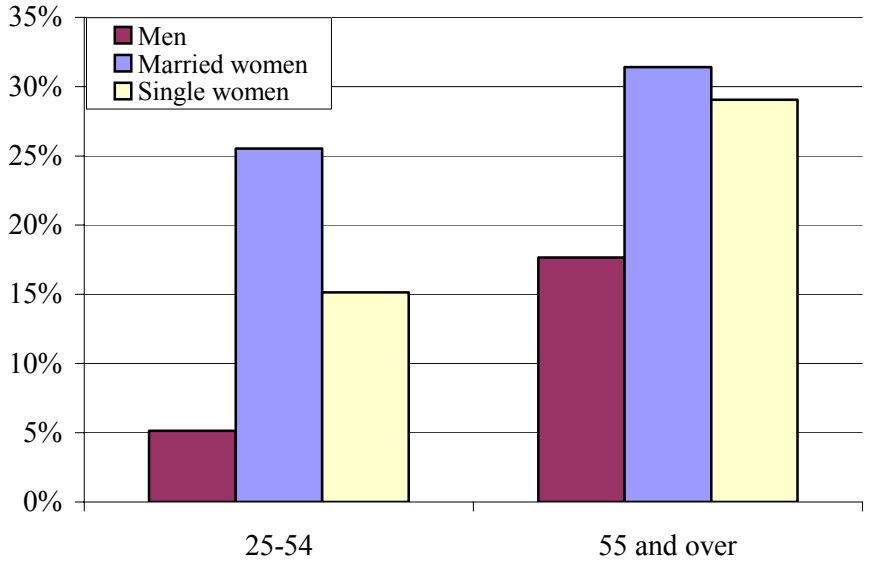
Figure 2. *Labor Force Participation by Age, 2004*



Sources: U.S. Bureau of Labor Statistics and U.S. Census Bureau (2005) and author's calculations.

Although women's labor force participation rates have increased dramatically and are approaching those of men, their pattern of work differs significantly from that of their male counterparts. Women, in particular married women, are far more likely than men to work part time, either for their entire work lives or for a part of their careers. In 2004, about 25 percent of married women in the labor force aged 25-54 worked part time compared to only 5 percent of men (Figure 3). Part-time work was more prevalent among both male and female workers age 55 and older, but, of those working, women are still more likely than men to work part time.

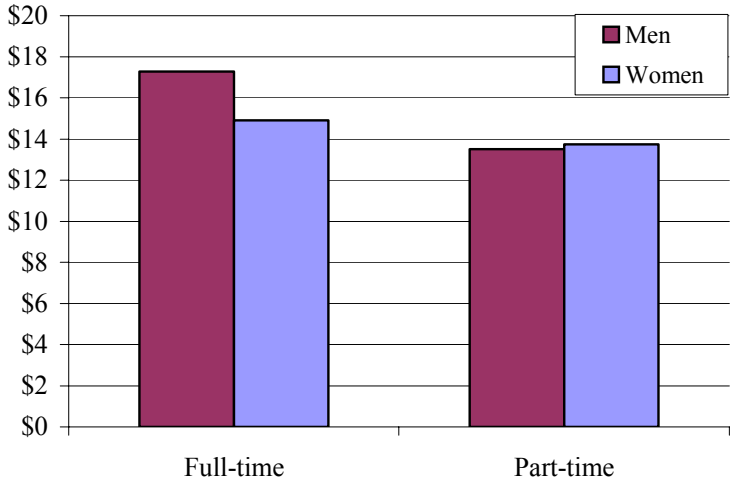
Figure 3. *Percent of Workers Working Part Time, by Age, 2004*



Sources: U.S. Bureau of Labor Statistics and U.S. Census Bureau (2005) and author's calculations.

Workers in part-time jobs earn less per hour than workers in full-time jobs. Figure 4 shows that women and men in part-time jobs were paid roughly $14 per hour while women working full time earned about $15 per hour and men more than $17 per hour. Thus, while part-time work may make it easier for women to participate in the labor force, its lower hourly wage provides less of a reward for doing so.

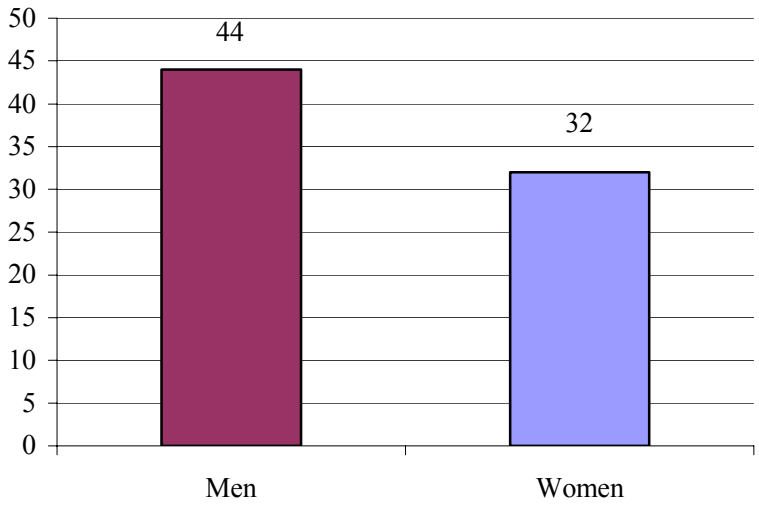
Figure 4. *Hourly Wage for Full-time and Part-time Workers Aged 45-54, 2004*



Sources: U.S. Bureau of Labor Statistics and U.S. Census Bureau (2005) and author's calculations.

In addition to working part time, women have fewer years in the labor force than men. Among workers who retired in 2000, the typical woman worker had spent 32 years in the labor force compared to 44 years for the typical man (Figure 5).

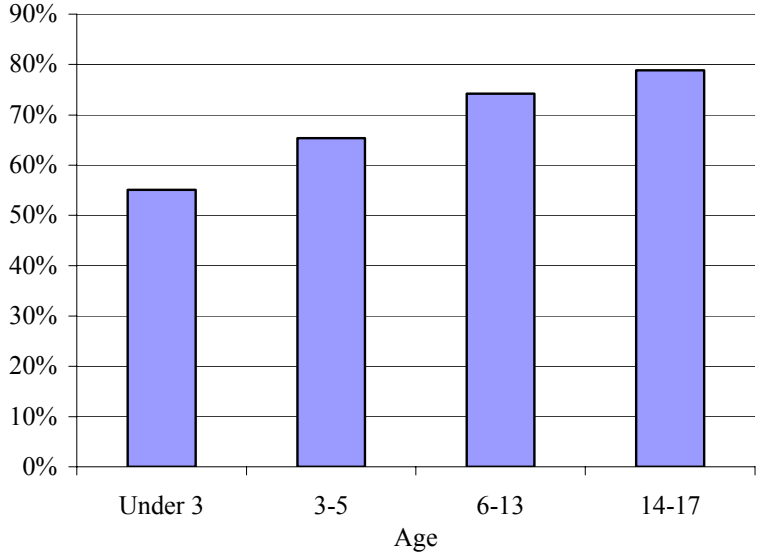
Figure 5: *Median Years Worked of Workers Retiring in 2000*



Source: U.S. Social Security Administration (2003).

The importance of child rearing to women's work decisions can be seen in Figure 6. The labor force participation of wives increases directly with the age of their children. Only slightly more than half of married women with children under 3 were in the labor force in 2004 compared to 79 percent for their counterparts with children aged 14 to 17.

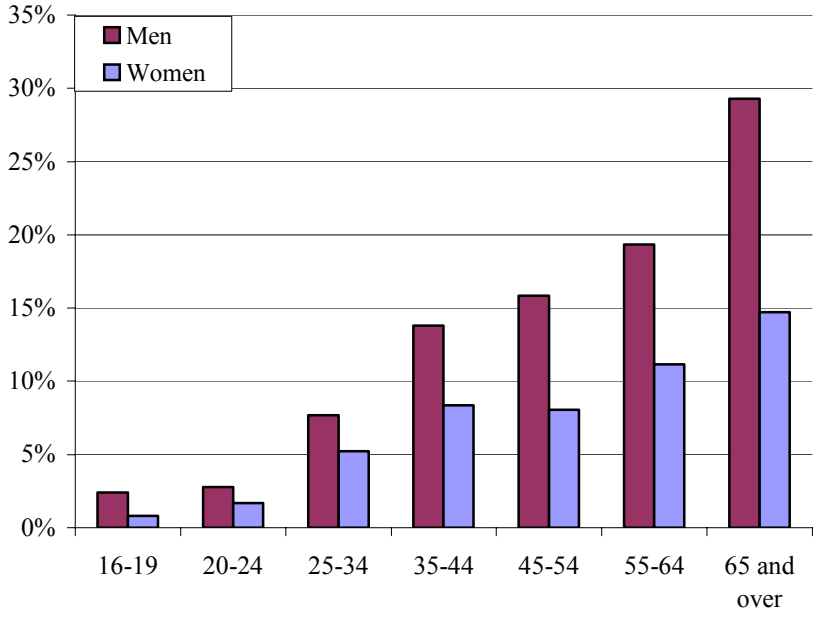
Figure 6. *Labor Force Participation of Wives by Ages of Children, 2004*



Source: U.S. Census Bureau (2006).

Finally, women work in different occupations and sectors of the economy than men. More than half of all women are employed in sales, office, or service occupations. Less than 10 percent work in physically demanding jobs such as construction and production, compared to one third of men. Women are also much less likely than men to be self-employed (Figure 7). The empirical results reported later suggest that self employment is an important determinant of remaining in the labor force at older ages.

Figure 7. *Self-employed as a Percent of Workers, by Age, 2004*

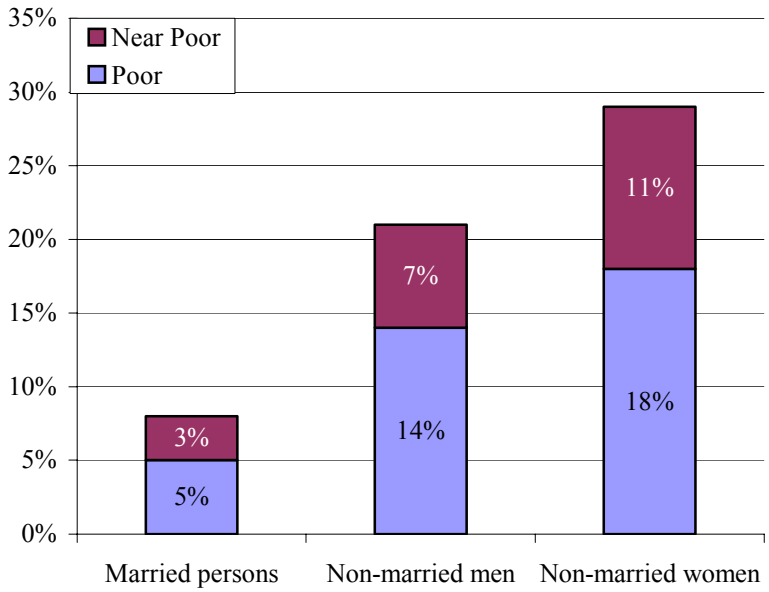


Sources: U.S. Bureau of Labor Statistics and U.S. Census Bureau (2005) and author's calculations.

2. The Impact of Women's Careers on Retirement Security

Women's career patterns have a major impact on their incomes in retirement. Although the economic status of older Americans has improved dramatically, substantial pockets of poverty remain, especially among older non-married women. As shown in Figure 8, 18 percent of non-married women fell below the poverty line in 2002. Another 11 percent of older single women were classified as "near poor," which means that they had an income of less than 125 percent of the poverty threshold. Thus, 29 percent of single older women are either poor or near poor ─ a clearly vulnerable group as the nation grays.

Figure 8. *Percent Poor and Near Poor by Marital Status of Population Aged 65 and Over, 2002*



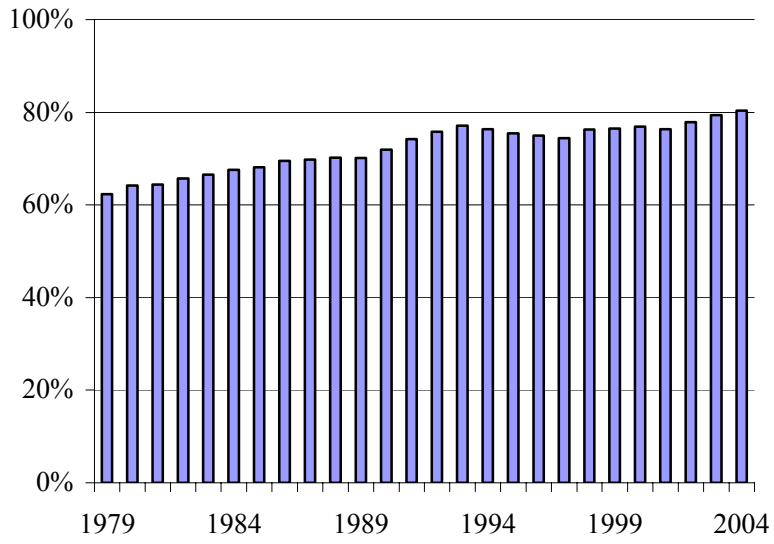
Source: U.S. Social Security Administration (2004a).

Not only do older single women have high levels of poverty, but they are a significant portion of the elderly population. Non-married women in 2002 accounted for more than half of households aged 80 and over.

Why do so many women end up poor? The answer is twofold. First, the retirement income system in the United States is based on earnings, and women have low earnings. Second, women live longer than men, and the retirement income of married women drops significantly when the husband dies.

Women have low lifetime earnings compared to men for the reasons just discussed. They are more likely to work part-time, and they spend fewer years in the labor force. In addition, even women who are employed full time earn about 20 percent less than men (Figure 9).

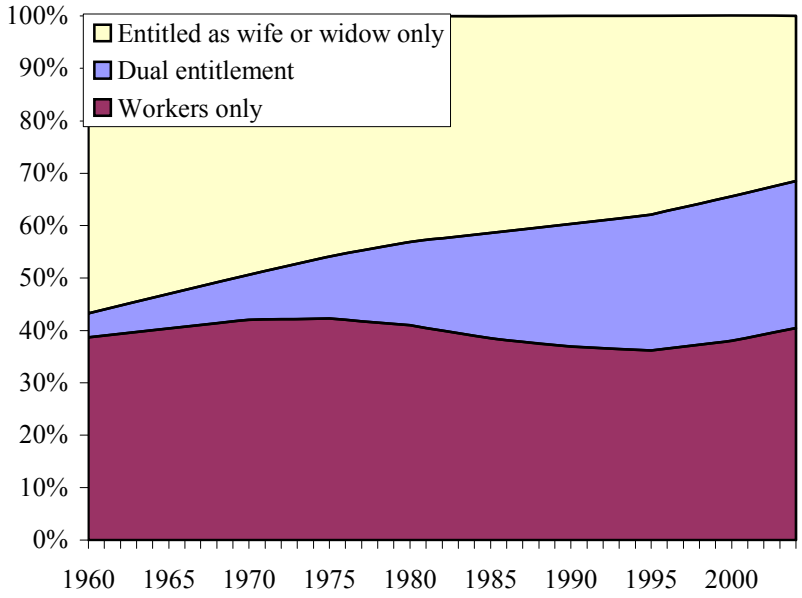
Figure 9. *Women's Median Earnings as a Percent of Men's for Full-Time Workers, 1979-2004*



Source: U.S. Department of Labor (2005).

Women's low lifetime earnings produce low retirement benefits. As a result, most married women continue to depend, at least in part, on their husband's earnings for their Social Security benefit.[1] This pattern is evident in Figure 10, which shows that in 2004, only 40 percent of women received benefits based solely on their own earnings record; the remaining 60 percent were entitled, in whole or in part, based on their husband's earnings.

Figure 10. *Women Age 62 and Older, by Basis of Entitlement to Social Security, 1960-2004*



Source: U.S. Social Security Administration (2005b).

The other major source of retirement income is employer-sponsored pension plans. Because women have less attachment to the labor force and earn less, they are less likely to end up with a pension. When they do, that pension benefit is likely to be smaller than a man's. As shown in Figure 11, only 40 percent of retired women have a pension compared to 53 percent of men, and the average woman's benefit is far less than the average man's.

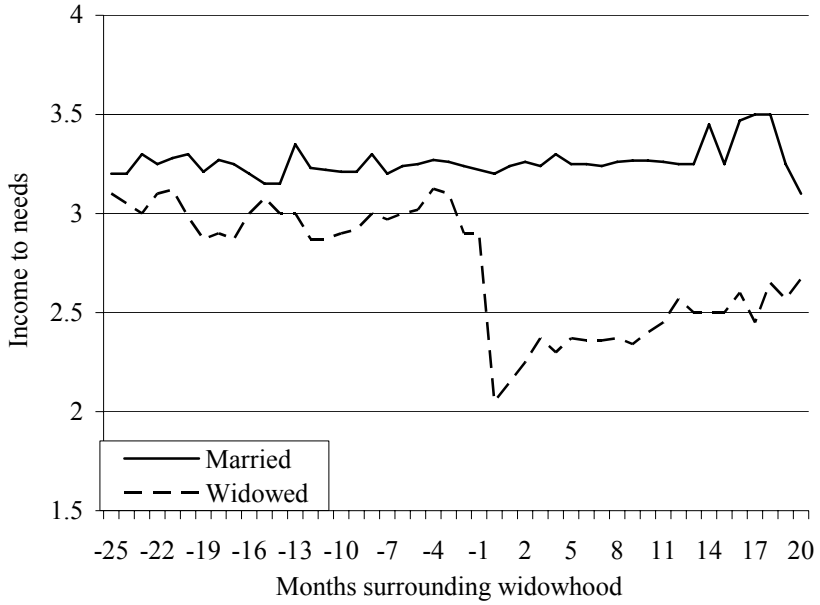
Figure 11. *Percent of Retired Men and Women Over 55 Receiving Pension Benefits and Average Benefit Amount, 2002*

Sources: University of Michigan (2002) and author's calculations.

Married women, who share in their husband's benefits, fare much better than single women. Only 8 percent of married women age 65 and over are either poor or near poor.[2] Among single women, who often have little income other than Social Security, 29 percent of those age 65 and over are either poor or near poor. If women could stay married throughout retirement, they might do alright. But, women live longer than men ─ a life expectancy at 65 of 19.6 years compared to 17 for men.[3] Thus, most women end up widowed. When their husband dies, two things happen to their retirement income. First, the couple's Social Security benefit is cut by between one third and one half. Second, the couple's private pension benefit either disappears completely or is reduced.

With the reduction in Social Security benefits and the reduction or cessation of employer-sponsored pension benefits, women suffer a severe decline in their income when their husband dies. Figure 12 compares the income situation of two groups of couples ─ one where the couple remains intact, the other where the husband dies. Income is measured in terms of the family's income relative to the poverty line. The couples in which the husband survives maintain an income-to-poverty ratio in excess of three. Among couples where the husband dies, the income-to-poverty ratio falls to two and then recovers somewhat.

Figure 12. *Income to Needs Ratio for Months Surrounding Widowhood*[a]



Source: Holden and Zick (1998).
a. The income to needs ratio is the ratio of total family income relative to the poverty line. For married couples, the time period shown is the entire period of the study rather than the months surrounding widowhood.

The other factor that hurts women is inflation. Even moderate levels of inflation can seriously erode the purchasing power of $100. For example, with an inflation rate of 3 percent, the value of $100 drops to $74 after 10 years, and $55 after 20 years ─ the average life expectancy for women at age 65. Social Security benefits are indexed for inflation, but employer-sponsored pension benefits generally are not. As a result, even if some of their husband's pension benefit continues after his death, the value of that benefit declines sharply over time. The erosion of the purchasing power of pension benefits as well as health and other problems contribute to the increase in poverty rates at older ages.

In short, poverty among women in old age is directly attributable to the interaction of a retirement system based on earnings and a pattern of no and low earnings on the part of women. One way for women to have more secure retirement income is to engage in labor force activity, so that they have earnings records of their own, and to stay employed until their mid-sixties, so that they can enjoy all the financial benefits of a later retirement. The question is what are the financial, family, and demographic factors that influence the work and retirement decisions of older workers, women in particular.

3. Financial, Family, and Demographic Factors Facing Older Women

Women face a different array of costs and benefits than men when considering employment and retirement. Their financial incentives to work are often less attractive. Family responsibilities may also affect the likelihood that women will remain in the labor force. Finally, women's health, education, and divorce prospects may also affect their employment outlook. Understanding the unique situation of older women is critical to crafting effective policies for encouraging them to work at older ages.

Financial Incentives to Work

Women face different financial incentives than men when considering whether to work or not. This generalization applies to the wages they earn before taxes, the taxes applied, pension coverage, and the rewards to working under Social Security.

Wages. Despite improvement in the ratio of female to male earnings, as noted earlier, women still earn less than men even when they work full time. In 2004, the median earnings for women full-time workers were 80 percent of that for their male counterparts. Women working full time earned less than men at every level of education and across occupational categories. Moreover, as discussed above, a much higher proportion of women than men work part time, and the hourly rate for part-time workers is less than for those working full time. Therefore, as women assess the work/leisure decision, they face less of a reward to entering or staying in the labor force than their male counterparts.

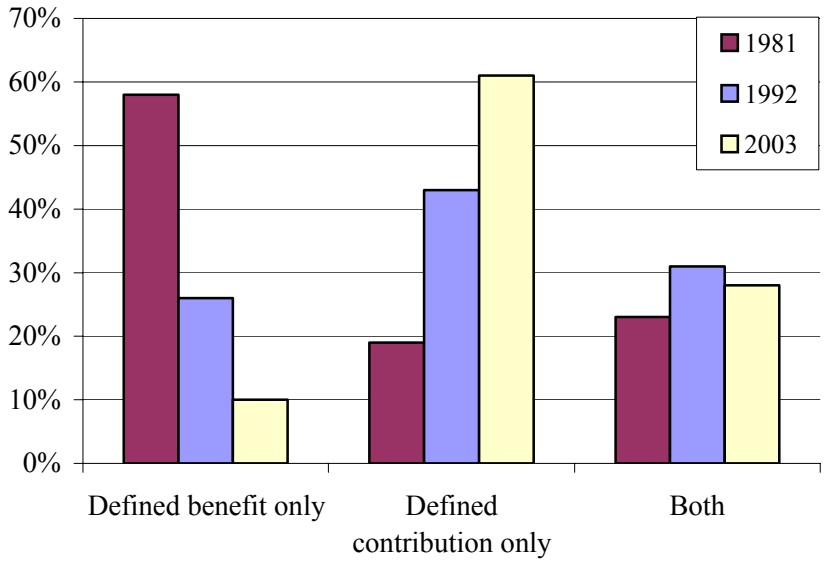
Taxes. In addition to earning less, married women generally face higher tax rates than men or single women. The U.S. personal income tax is progressive with rates ranging from 10 percent for couples with incomes of less than $14,600 to 35 percent for couples with incomes over $326,450. Even though the status of women has changed dramatically in the last 40 years, the man is usually considered the primary breadwinner. This perception more or less comports with reality in that in families where both the wives and husbands work, only 25 percent of wives earn more than their husbands.[4]

Because the man is usually the primary breadwinner, within the family his earnings are often considered to be taxed at the lower marginal rates. The woman, as the secondary earner, has her income "stacked" on top of her husband's and taxed at the

higher marginal rates. Of course, the alternative arrangement is equally possible, with the woman's income on the bottom and the husband's income on the top. But, in most instances when the woman considers working, the couple usually views her income as subject to the higher marginal tax rates. The higher tax rates faced by married women, together with the lower wages that women receive, make their financial return from work significantly less than that for men.

Pensions. Pensions also affect the retirement decision, and pensions have changed in two important ways over the last 25 years. First, pension coverage has shifted from traditional defined benefit plans, where the worker receives a lifetime benefit based on years of service and final earnings, to 401(k) plans, which are like savings accounts (Figure 13).

Figure 13. *Percent of Wage and Salary Workers with Pension Coverage by Type of Plan, 1981-2003*



Sources: U.S. Department of Labor (2004) and author's calculations from raw universe 5500 data files.

Implications for Women of a Changing Pension System

For women, the shift from defined benefit to 401(k) plans is a "good news/ bad news" story. When women are employed and accruing retirement income benefits, the news is good. One key difference between traditional defined benefit plans and 401(k) plans is the extent to which people can take their benefits with them when they move from job to job or in and out of the labor force. Basically, workers with 401(k) plans can take their full accumulations when they leave, while workers with traditional defined benefit plans suffer a loss when they shift jobs. As a result, 401(k) plans are better for short-tenured workers, and women are more likely than

men to have short tenures. Therefore, more women are likely to end up with more benefits, and their benefits are likely to be larger when they have a 401(k) plan rather than a traditional defined benefit plan.

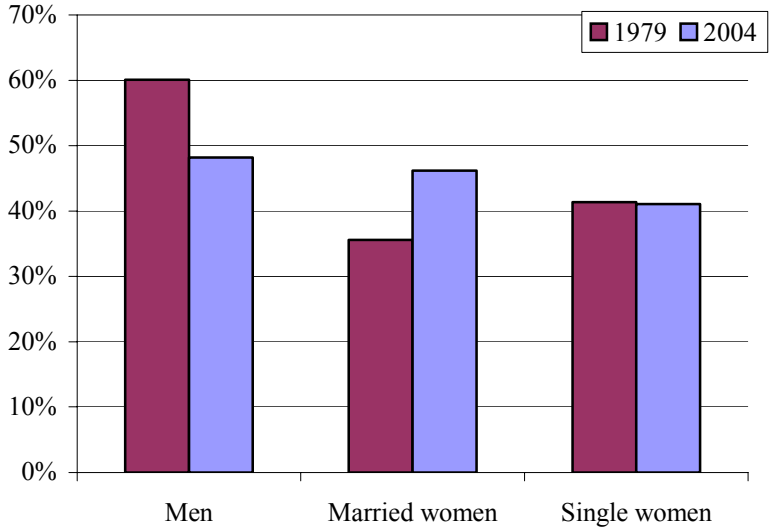
The bad news arrives when women retire. As women tend to live longer than men, their 401(k) balances must provide an income stream over a longer stretch of time. Should they wish to annuitize a portion of their 401(k) accumulations at retirement, they will find that insurance companies compensate for women's longer life expectancy by providing smaller monthly benefits to women, and larger monthly benefits to men.[5] In defined benefit plans, men and women with comparable work histories would get the same monthly benefit.

Women who rely on their husband's earnings and pension benefits are also affected by the shift from defined benefit plans to 401(k)s. Under traditional defined benefit plans, the government requires that the worker receive a joint-and-survivor annuity at retirement, unless the spouse specifically waives the requirement. This provision gives the wife a legal claim on her husband's pension benefits. No such automatic claim exists with 401(k) plans.

The bottom line is that women will benefit from 401(k) plans to the extent they are workers, and lose to the extent they are dependent on their husbands.[6]

Second, pension coverage has declined for men over the same period and increased for married women (Figure 14). At this point, the remaining differential in coverage between men and women can be explained by their different work patterns, since pension coverage among women who work full time for the entire year is identical to that for men.[7]

Figure 14. *Pension Participation, Aged 25-64, by Marital Status 1979 and 2004*



Sources: U.S. Bureau of Labor Statistics and U.S. Census Bureau (1980 and 2005) and author's calculations.

Traditional defined benefit plans offer a significant subsidy for early retirement, while 401(k) plans provide no incentive to retire at a particular age and reward continued work with increased retirement wealth. Women have always been less affected by defined benefit incentives than men because women were less likely to have any pension coverage, and much less likely to be covered by a defined benefit plan. However, now with it more common for a woman to be covered by a defined contribution plan, they might be enticed to work longer in order to build up their 401(k) account. On the other hand, this growing percentage of covered women with a nest egg of their own will have the resources to stop working earlier than they otherwise would.

Social Security Accruals. Individuals can improve their *monthly* Social Security benefits by working longer and claiming benefits at a later age. They avoid the reduction for early retirement and can receive a delayed retirement credit for later retirement, both of which raise the monthly benefit. For the typical worker, of course, *lifetime* Social Security benefits remain unchanged since the reductions or increases are designed to be actuarially fair. The present discounted value that the average person can expect to receive over his or her lifetime thus does not depend on when benefits are claimed.

Continued employment can also increase a worker's *lifetime* benefits. Social Security benefits are currently based on the 35 years of highest earnings, indexed to reflect the increase in wages. Working an additional year allows participants to replace a year of low earnings with higher earnings later in life. This can be particularly important for women who may have been out of the labor force for a number of years and therefore have many "zeros" in their earnings history. In this regard, Social Security provides women with a greater incentive to stay in the labor force than it does men.

Another group of women may not improve their Social Security outcome through additional work. These are married women whose lifetime earnings are low enough so that they qualify for the 50 percent spouse's benefit. Despite women's increased labor force participation, as noted earlier only 40 percent of women 62 and over receive benefits today based on their own earnings. Most women receive benefits based in whole or in part on their husband's earnings records and therefore gain little from further work.

Availability of Social Security Benefits. The existence of Social Security's Earliest Eligibility Age (EEA) means that both men and women have an important choice to make once they turn age 62: claim reduced Social Security benefits right away, or delay until some further date and receive a larger benefit.[8] As noted above, the reductions are designed to be actuarially fair for the person with average life expectancy.

In 2003, 59 percent of women and 53 percent of men opted to claim actuarially reduced benefits at age 62 (Table 1). The fact that a greater proportion of women than men claim benefits early is somewhat surprising, since women are expected to live longer than men. A longer life expectancy means that people will receive benefits for a longer period of time, which makes the increase in monthly benefits from postponing receipt more valuable.[9] Thus, one would expect a smaller percentage of women than men to claim benefits at age 62 ─ just the opposite of the pattern shown in Table 1. Clearly other factors are at play.

Table 1. *Percent Distribution of Initial Social Security Benefit Awards, 2003*

Age	Women	Men
62	58.6	53.3
63	7.3	7.9
64	11.6	13.1
65	16.5	22.4
66 and over	5.9	3.3
Total	100.0	100.0

Sources: U.S. Social Security Administration (2004b) and author's calculations.

One way to sort out the puzzle is to look at the retirement patterns of men and women by marital status.[10] Table 2 shows that a significantly smaller percentage of single women claim benefits early compared to both married and single men.[11] Since women on average live longer than men, this is the expected pattern. In contrast, a very high proportion of married women claim benefits early.

Table 2. *Percent Distribution of Initial Claiming of Social Security Benefits, 1992-2002*

Age	Women		Men	
	Married	Single	Married	Single
62	67.1	48.9	58.1	64.1
63	14.5	14.7	11.9	10.4
64	6.6	9.2	9.6	7.1
65	9.8	20.6	15.8	11.7
66 and over	2.0	6.5	4.7	6.7
Total	100.0	100.0	100.0	100.0

Sources: University of Michigan (1992-2002) and author's calculations.

Married women are entitled to three types of benefits: 1) a benefit based on their own earnings record; 2) a spouse's benefit equal to 50 percent of their husband's primary insurance amount ─ the benefit unreduced for early retirement ─ if that exceeds their own benefit; and 3) a survivor's benefit, should their husband die, equal to 100 percent of their husband's actual benefit, if that exceeds their own benefit. In the case of a married woman, two factors are important for the claiming decision. First, the survivor benefit is

solely determined by her husband's earnings history and the actuarial reductions or increases to reflect his early or delayed claiming. That is, from her perspective, the survivor's benefit is a fixed amount to be received after her husband's death. In order to maximize that fixed annual amount, she would like him to delay claiming. If the husband is trying to maximize the benefits received by the couple, delay is also his choice. Ironically, when the husband is deciding when to claim benefits, it is his wife's life expectancy, rather than his own, that he should be considering.

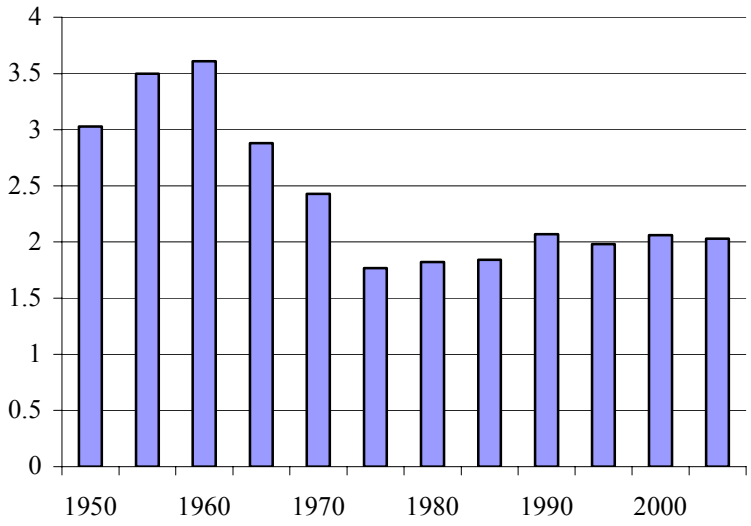
Second, the decision over which the wife has control is when to claim the benefits she receives until the death of her husband. Her goal would be to maximize this amount. Again, ironically, in this calculation her life expectancy becomes irrelevant, and the relevant life expectancy is that of her husband. In this way, her choice mirrors that facing a single man. Because these benefits are expected to be received for a period shorter than the life expectancy of the average person, she has an incentive to claim as soon as possible. And this is the pattern evident in the data. It is unclear, however, whether the Social Security incentives or the tendency for couples to make joint retirement decisions, discussed below, best explains the early claiming of married women.

Family Considerations

Within the family, women often play the role of caregivers, and married women function as part of a joint decision-making unit regarding the work-retirement decision. These factors are likely to affect women's ability and desire to stay in the labor force.

Caregiving. Women tend to be the caregivers at younger ages when they are primarily responsible for caring for children. The notable reduction in the family size should be a contributing factor to the increased participation of women at younger ages (Figure 15). The ability to work when young is likely to have a positive impact on participation at older ages.

Figure 15. *Fertility Rate, 1950-2005*



Source: U.S. Social Security Administration (2006).

At older ages, women generally have the responsibility for caring for elderly parents or older relatives. A study conducted by MetLife reveals that more than three quarters of America's family caregivers are women, and shows how such responsibilities affect work lives.[12] The survey reports that 84 percent of the caregiving respondents had to make informal adjustments to their work schedule in response to their caregiving duties, and 64 percent had to make formal adjustments. As the need to care for spouses and parents rises with age, such responsibilities limit the ability of older workers ─ primarily women — to continue working at older ages.

Joint Decision-making. Married men and women generally coordinate their withdrawal from the labor force.[13] Studies show that spouses tend to retire together because they want to spend time together.[14] Economists have been unable to find any support for competing hypotheses for this tendency to retire together, such as husbands and wives having the same taste for work and leisure or that they face the same financial incentives.[15]

A few studies have explored how wives respond when their husbands have retired for health reasons. The response could go either way. The wife could stay at work, or enter the labor force if not currently employed, to make up for her husband's lost

earnings. In fact, standard labor supply models predict such a response to avoid a major fall in household consumption. Alternatively, the wife might leave the labor force or work fewer hours to spend time with and/or take care of her husband. Such a response would be consistent with the joint retirement pattern seen among healthy retirees, but would have serious financial implications for the family. One analysis, which used the 1992 wave of the HRS, found that wives are less likely to retire with their husbands when the husband is forced into retirement because of health problems or loss of a job.[16]

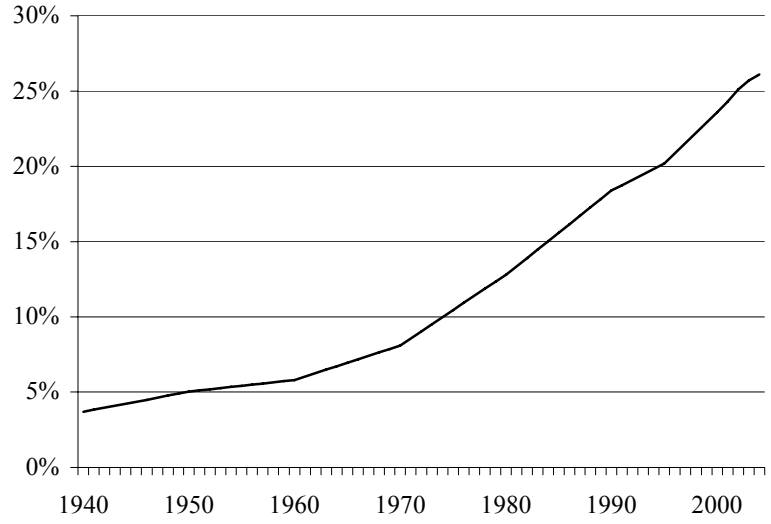
Demographic Characteristics

In addition to the financial incentives and family responsibilities, women have some basic characteristics, which have changed dramatically in the last several decades, that should have a profound affect on their ability and desire to work and their ability to postpone retirement.

Health. Health status is likely an important determinant of a person's labor force activity. Having poor health makes it harder to fulfill work responsibilities and limits job opportunities. However, there is a trend of improved health among women as well as men. For example, the share of women reporting activity limitations dropped from 13.4 percent in 1997 to 12.2 percent in 2003.[17] Improving health conditions should allow older women to stay in the labor force longer.

Education. The percent of women receiving college degrees has increased significantly (Figure 16). In 1970, only 8 percent of women age 25 and older had a college degree. By 2004, this share had increased to 26 percent. A higher level of education means more job opportunities and generally more satisfying careers. Most jobs that require a high level of education do not require physical effort or excellent health, thus allowing older women to stay in the labor force longer.

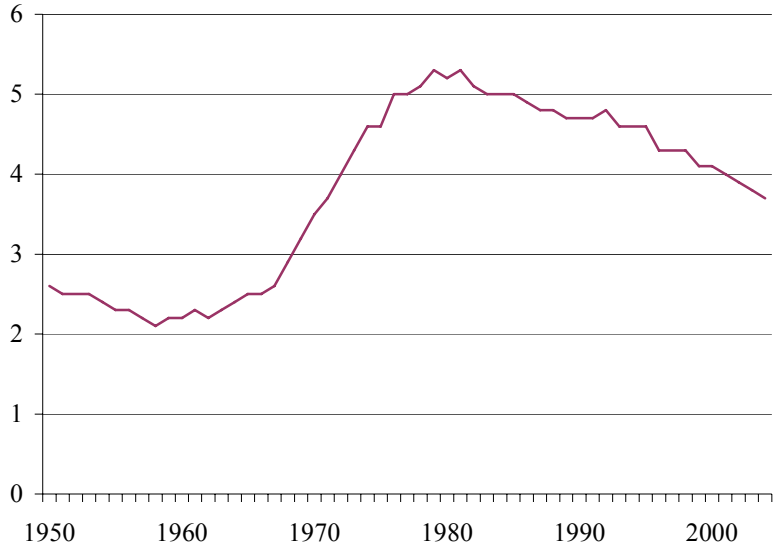
Figure 16. *Percent of Women Age 25 and Over with a College Degree, 1940-2004*



*S*ources: U.S. Census Bureau (1962 and 2006).

Divorce. Divorce ─ either as a theoretical possibility or an actual occurrence ─ may also affect a woman's decision about whether to work and for how long. The dramatic increase in the probability of divorce between the mid-1960s and the late 1970s may explain, in part, the increase in female labor force activity during this period. Between 1962 and 1979, the number of divorces per 1,000 people more than doubled, from 2.2 to 5.3, and has remained high since then (Figure 17). The risk that marriage might end in divorce may encourage more married women to build a career of their own. When divorce does occur, the loss of the husband's earnings often forces the woman to enter the labor force.

Figure 17. *Number of Divorces per 1,000 Total Population, 1950-2004*



Sources: Center for Disease Control and Prevention (1997-2006, 1992-1995, 1995).

4. Empirical Analysis of the Work and Retirement Decisions of Older Women

This section uses the Health and Retirement Study (HRS) to see how the various factors discussed above affect the labor force activity of women at older ages.[18] The HRS is a nationally-representative data set of about 12,650 individuals from about 7,600 households.[19] This study began in 1992 by interviewing people ages 51-61 and their spouses (regardless of age). The survey has been re-administered in 1994, 1996, 1998, 2000, 2002 and 2004. The HRS contains detailed information on labor force participation, earnings, pensions, health status, retirement expectations, and caregiving responsibilities, and is thus ideal for this study.

The following analysis explores three questions. What factors affect the probability that older women will be employed? What factors affect their *expected* retirement age? And what factors affect the probability that they will retire earlier than expected? To explore each question, separate equations were estimated for men, married women, and single women. The equations can be found in the Appendix, the following discussion highlights the main insights regarding the continued employment of older women.

What factors affect the probability that older women will be employed?

This exercise involves estimating an equation ─ for men, married women, and single women ─ that puts the work status of HRS respondents in 1992 as the dependent variable and the demographic characteristics, financial incentives, and family considerations discussed above as the explanatory variables. The goal is to determine the extent to which the various factors described above affect the probability of being at work. The following discussion briefly summarizes the results, focusing on the most interesting findings when considering the work status of older women (Table A1 in the Appendix).

Demographic characteristics. The findings for demographic characteristics are consistent with expectations. Age reduces the probability of being employed for all three groups. Being in fair or poor health lowers the likelihood of employment by about 30-40 percent. In contrast, for both married and single women, having been divorced raises the likelihood of working by between 6-11 percent. Divorce has no impact on the work status of men.

Financial incentives. The analysis of financial incentives includes measures relating to wealth, earnings, a test of the impact of tax incentives, and a variable for examining the influence of the Social Security spousal benefit.

Wealth is represented in the equation by the household's financial assets and homeownership. Having substantial financial resources means there is less of a need for paid employment, and the results indicate that greater financial assets indeed make both married and single women less likely to work.[20] Financial assets have no impact on men. Homeownership may work either way. As a measure of financial wealth, it would indicate less need to work. On the other hand, meeting monthly mortgage payments may require both members of a couple to be employed. The results show that home ownership is positively related to work for both men and women, suggesting that the need to cover mortgage payments outweighs the additional financial wealth that a house represents.

Higher wages would be expected to encourage more work. But with some people working and some not, wage information is not available for everybody so education

serves as a proxy for wages.[21] A college educated person is more likely to have a higher earnings potential and therefore may have a greater incentive to work. The results show that having a college education ─ and presumably higher wages ─ increases the likelihood of work for both men and women, with a somewhat larger impact for women.

In terms of financial incentives, the variables of greatest interest are those that show the impact of taxes and Social Security on employment. To test the impact of tax incentives, the analysis looked at whether the spouse with the highest educational attainment ─ again, a proxy for higher earnings potential ─ is more likely to be employed. The notion is that if a woman's education exceeds that of her husband, she is less likely to be viewed as the marginal earner facing the higher marginal tax rates. The results support this notion, with married women who are more educated than their husbands being 7 percent more likely to work.

To test the impact of Social Security's spousal benefit on work incentives, the analysis compared workers whose benefits are projected to exceed 50 percent of their spouse's benefit with those projected to be at or below 50 percent. Women in the first group should be more likely to work, since they can improve future benefits through employment. In fact, the results support this hypothesis ─ women whose Social Security benefits are projected to exceed 50 percent of their husbands' benefits are almost 14 percent more likely to work than women with lower projected benefits. In short, the tax and Social Security incentives appear to have a real impact on the likelihood of employment among married women.

Family considerations. Family caregiving responsibilities can include care for a child, a parent, or a spouse. The equation includes variables to test for all three cases. Having a child under 14 is quite influential ─ it reduces the likelihood that married women will be in the labor force by 7 percent. In contrast, the other caregiving variables ─ number of biological children, caring for a spouse, and caring for a parent ─ have no significant impact on the employment activity of married women. Caring for a parent does appear to affect the work activity of single women.

As discussed earlier, married women appear to make their employment decisions jointly with their husbands. This study finds that joint decision-making appears alive and well. Having a working spouse increases the probability of working by about 15 percent

for women and by about 10 percent for men. At the same time, the more a person's spouse earns the less need there is to work for pay. The analysis tested for this effect as well and found that every additional ten thousand dollars of spousal income decreases the probability of working by 0.6 percent for women. As will be shown below, the fact that women coordinate their activity with their husband is a major explanation for why they retire early.

What factors explain expected retirement ages?

The second equation identifies the factors that affect the *expected* retirement age for men, married women, and single women who were working in 1992 (Table A3 in the Appendix).[22]

Demographic characteristics. The demographic variables play the predicted role. Age increases *expected* retirement age.[23] Fair or poor health leads to earlier *expected* retirement ages. Men and single women who have been divorced plan to stay longer in the labor force. For previously divorced married women the divorce variable is insignificant, perhaps because the joint decision-making of the current marriage prevails.

Financial incentives. Focusing on individuals who are employed makes it possible to identify the actual wages they are paid and the array of financial incentives they face. The impact of higher wages is theoretically ambiguous. On the one hand, higher wages allow workers to achieve their retirement savings goal in fewer years and retire earlier; on the other hand, the higher level of compensation may encourage workers to stay in the labor force longer. The results show that higher wages encourage early retirement for men and married women, but have no impact on single women.

Men and single women with a college education expect to retire later than those without a college education. Greater financial wealth encourages slightly earlier retirement plans for both married and single women, with no impact for men. Owning a home has a large and significant effect, reducing the *expected* retirement age by about a year and a half for men and married women, and by a half a year for single women. Another financial incentive included in the equation is whether the worker's employer offers health insurance in retirement. Workers ─ both men and women ─ with access to

post-retirement health insurance expect to retire about one year earlier than those without access.

Pensions and Social Security wealth encourage both men and women to retire earlier. For defined contribution plans, this wealth is the value of accumulated assets. For defined benefit plans and Social Security, wealth equals the present discounted value of future benefits.[24] Economic theory says that people with pension wealth of any sort should retire earlier than those without and that those with a defined benefit plan should retire even earlier because of the retirement incentives.[25] The results are consistent with these predictions.

Higher Social Security wealth causes people to have a lower *expected* retirement age. Finally, when a woman's Social Security benefit exceeds 50 percent of her husband's, a variable that is marginally significant, she is likely to plan on a later retirement ─ presumably to increase her benefit amount.

Family considerations. The joint decision-making variables regarding planned retirement age are important for men and married women, whose *expected* retirement ages are highly correlated with each other's. On the other hand, married women whose husbands are in the labor force plan to retire earlier. Regarding the caregiving variables, the presence of children under 21, which was added to reflect the pressure to work from having a child in college, appears to increase men's *expected* retirement ages; and wives with husbands in fair or poor health expect to retire later than those with healthy husbands.

Attachment to the labor force. The variables measuring attachment to the labor force generally have a consistent pattern across the three groups. Part-time work (flexibility) and hours worked (taste for work) lead to later *expected* retirement among men and married women. Physically demanding jobs lead to earlier retirement, but the coefficient is not statistically significant. The big exception to a consistent picture is self employment, which has a very large and statistically significant effect for men, but no effect for women. The flexibility associated with this form of employment increases the *expected* retirement age for men by two years. This avenue for continued employment seems far less open to women.

The Probability of Earlier-than-Planned Retirement

This final equation explores why some men and women retire earlier than expected. Surveys consistently show that people plan to retire around age 65, but the median *actual* retirement age is 62. This is true for both men and women. The question is why.

This analysis starts with all workers in 1992 and identifies those who have retired earlier than expected.[26] The explanatory variables include "initial" variables from the 1992 regression of *expected* retirement age and new "shock" variables (Table A4 in the Appendix). The results show that of the series of "initial" variables, only two are important ─ age and "fair or poor" health status, and they have comparable effects for men, married women, and single women. The older people are the less likely they are to revise their retirement plans and retire early. That result seems reasonable in that the closer people are to *actual* retirement the more accurately they can plan. In contrast, people who initially say that their health is "poor" or "fair" have a greater likelihood of retiring earlier than they said they would. It seems like people with health problems underestimate the extent these problems will affect their ability to work. Having a college education, being self employed, and having retiree health insurance do not have a statistically significant effect when it comes to retiring earlier than planned.

Three "shock" variables have a significant impact on the probability of retiring earlier for all three groups. A change in health status from good to bad significantly increases the probability of retiring earlier for both men and married women, but is not statistically significant for single women. Having switched jobs significantly reduces the probability of retiring earlier than planned. One possible explanation for this result is that people who leave their main job may switch to a "bridge" job that better fits their lifestyle as they approach retirement, which allows them to stay in the workforce longer. Finally, finding oneself caring for a parent greatly increases the likelihood of earlier retirement for men and married women. Interestingly, the effect is largest and most statistically significant for men and less important and only marginally significant for single women.

The results for married couples are interesting. Married women retire earlier than expected if their spouse retires. In fact, the probability of retiring early increases by 12 percentage points. The results also suggest, although the coefficient is not statistically significant, that married women are less likely to retire early if their spouse's health deteriorates.[27] The latter result is consistent with other studies that suggest women respond to a husband's illness by taking over the role of breadwinner. Men's probability of retiring earlier than expected appears unaffected by changes in the health or the retirement of their wives.

Although the pension coverage variables consistently have a negative sign for all three groups (except in the case of single women with defined contribution plans) – suggesting people with pensions can plan better – the coefficients are not statistically significant.

5. Conclusion

Given the pressures on retirement programs and the enormous increase in life expectancy, it will not be possible for people to continue to retire at age 62 and support themselves for 20 or 30 years in retirement. Women are particularly vulnerable to these trends, in that even today many end up in poverty. The reason is that retirement income programs are based on earnings and women generally have low earnings. The way out of the box with the greatest potential payoff is for women to earn their own incomes in their 50s and 60s.

In determining whether or not more work is possible, it is important to remember that women face different financial incentives and family responsibilities than men, and have different demographic characteristics and labor force experiences than their male counterparts. The preceding analysis has highlighted three considerations that may be important.

First, women face less attractive financial incentives to work than men. In particular, women are likely to be viewed within the family as the secondary earner and face higher marginal tax rates under the personal income tax. The empirical analysis suggests that these higher rates may well discourage employment at later ages. In addition, fewer women than men are able to increase their Social Security

benefit by continued work, since even today only 40 percent of women are entitled to benefits based solely on their own earnings record. The analysis suggests that the Social Security incentives may be important. Finally, societal norms make it more acceptable for women not to work, and older women, both married and single, are less likely to be in the labor force if the household has adequate financial resources.

Second, when it comes to retirement, joint decision-making means that wives tend to retire when their husband stops working. Since women are on average three years younger than their husbands, they withdraw from the labor force at an early age. Thus, extending women's careers requires one of two changes – either their husbands start to retire later or women decide that joint retirement may not be the best for them in the long run.

Third, a big difference between men and women is self employment. Self-employed men expect to retire two years later than other men. But self employment has no effect on the *expected* retirement age for either married or single women, probably because a much smaller percentage of older women are self-employed. Another finding that reinforces the importance of the flexibility associated with self employment is that a recent change of jobs reduces the likelihood of retiring earlier than expected. The better that people can match their jobs to their lifestyles the longer they will stay in the workforce. Thus, the major challenge for women may be to find the same flexible employment arrangements that men enjoy at the end of their careers, which enable them to gradually reduce their activity as they age.

In some ways, the future looks brighter than the past for women, since their labor force participation has risen significantly. Increasingly their work decisions and careers look more like those of men. But divorce rates have also risen substantially, so women will have to rely increasingly on their own earnings. Women cannot continue to claim their Social Security benefits at age 62, believing that they will have adequate resources for 20 or 30 years in retirement. Women, like their male counterparts, will have to plan on working at least until their mid 60s. But given their weaker attachment to the labor force, smaller financial incentives, and lesser access to flexible employment, the challenge for women to join and stay in the labor force is greater than that facing men.

Table A1. Marginal Effects from Equation Explaining the Probability of Being Employed, HRS 1992

	Men		Married women		Single women	
Financial Incentives	dF/dx	z-statistic	dF/dx	z-statistic	dF/dx	z-statistic
Financial wealth	-0.0005	-1.25	-0.002	-3.08	-0.004	-2.16
Home ownership	0.083	4.10	0.081	3.30	0.133	4.83
College education	0.063	3.42	0.104	4.75	0.109	2.66
Degree greater than spouse's degree	0.0182	1.04	0.072	4.21	-	-
SS benefit greater than .5 spouse's	-0.019	-1.07	0.139	9.15	-	-
Family Considerations						
Number of biological children	0.005	1.50	-0.007	-1.65	-0.009	-1.44
Children under 14	-0.004	-0.20	-0.066	-2.59	-0.111	-1.39
Help parents (continuous)	-0.0001	-1.71	-0.000	-0.24	-0.0001	-2.52
Married	0.080	2.85	-	-	-	-
Spouse health fair or poor	-0.009	-0.45	0.008	0.41		
Spouse working	0.095	5.59	0.148	8.04	-	-
Spouse's income	-0.009	-1.81	-0.006	-2.33	-	-
Demographic Characteristics						
Age	-0.033	-22.25	-0.019	-11.90	-0.033	-7.72
Fair or poor health	-0.349	-20.17	-0.282	-14.10	-0.415	-14.64
Divorced	-0.010	-0.59	0.056	3.22	0.108	4.06
Pseudo R-squared	0.1869		0.1158		0.1976	
Sample size	5694		4939		1629	

Table A2. Characteristics by Sex and Marital Status (Means), HRS 1992

Variable	Male	Married women	Single women
Number of observations	3146	2618	1023
Expected retirement age[1]	63.75	63.11	63.95
Defined benefit wealth (HH)	$198,277	$210,283	$106,007
Percent of households with DB plan	62%	58%	32%
Defined contribution wealth (HH)	$76,945	$51,639	$31,967
Percent of households with DC plan	39%	36%	23%
Social Security wealth (HH)	$182,179	$214,951	$108,562
Total financial wealth (HH)	$62,716	$60,297	$26,899
Social Security benefit more than 50% of the spouse's	0.68	0.66	-
Wage	$32.22	$15.25	$13.46
Retiree health insurance (own or from spouse's employer)	0.54	0.59	0.33
Age	55.87	55.77	56.01
Fair or poor health	0.16	0.15	0.26
Previously divorced	0.32	0.20	0.54
College education	0.25	0.15	0.18
Degree is higher than spouse's	0.42	0.23	-
Married	0.83	-	-
Married, spouse working	0.54	0.72	-
Spouse health fair or poor	0.11	0.16	-
Expected retirement age of the spouse	62.72	64.64	-
Number of biological children	2.19	3.00	2.74
Child under 14	0.11	0.05	0.03
Child under 21	0.34	0.20	0.16
Help parents (hours)	472	797	1010
Currently working	0.76	0.54	0.65
Hours worked	43.71	35.77	38.50
Self employed	0.19	0.09	0.08
Physically-demanding job	0.33	0.20	0.29
Part-time job	0.04	0.10	0.07
Own a home	0.86	0.92	0.62

[1] The number of observations is smaller for this variable: male – 2218, married women – 1504, single women– 661.

Table A3. Coefficients from Equation Explaining *Expected* Retirement Age, HRS 1992

	Men		Married women		Single women	
Financial Incentives	Coeff.	t-statistic	Coeff.	t-statistic	Coeff.	t-statistic
Wage	-0.001	-5.24	-0.0002	-2.87	0.014	0.90
College education	1.061	4.85	-0.302	-1.07	0.753	1.94
Financial wealth	0.001	0.18	-0.019	-2.16	-0.043	-2.33
Home ownership	-1.205	-4.11	-1.658	-4.51	-0.554	-1.80
Retiree health insurance	-0.875	-5.15	-0.932	-4.89	-0.801	-2.63
Pension wealth: DB	-0.039	-4.16	-0.036	-4.23	-0.093	-4.78
DC	-0.017	-2.08	-0.007	-0.57	-0.011	-0.23
Social Security wealth	-0.024	-2.15	-0.020	-1.62	-0.052	-1.86
SS benefit >.5 spouse's	0.170	0.72	0.402	1.69	-	-
Family Considerations						
Children under 21	0.358	1.97	0.349	1.51	-0.465	-1.09
Help parents (continuous)	0.0002	1.33	-0.0001	-0.32	-0.001	-1.52
Married	0.546	1.49	-	-	-	-
Married, spouse working	0.005	0.02	-0.893	-2.30	-	-
Spouse's income	-0.089	-1.58	-0.040	-0.88	-	-
Spouse's exp. ret. age	0.010	1.90	0.022	3.38	-	-
Spouse health fair or poor	-0.245	-0.99	0.500	1.73	-	-
Demographic Characteristics						
Age	0.148	3.02	0.189	5.38	0.141	1.22
Age 55	0.371	5.31	0.185	2.71	0.077	0.43
Fair or poor health	-0.703	-2.77	-0.400	-1.36	-1.604	-4.90
Divorced	0.536	2.79	-0.023	-0.10	1.046	3.77
Attachment to Labor Force						
Part time	1.416	2.39	0.701	1.76	0.990	1.31
Hours worked	0.032	3.23	0.035	2.85	0.003	0.16
Physically-demanding job	-0.235	-1.35	-0.235	-1.22	-0.010	-0.04
Self employed	2.021	7.69	0.193	0.48	0.870	1.24
Constant	54.110	20.24	52.873	27.43	56.781	9.09
R-squared	0.249		0.141		0.164	
Sample size	2355		1889		591	

Table A4. Marginal Effects from Probit Equation Explaining the Probability of Retiring Earlier than Planned, HRS 1992-2002

	Men		Married Women		Single Women	
	dF/dx	z-statistic	dF/dx	z-statistic	dF/dx	z-statistic
Original Variables						
Age	-0.019	-4.75	-0.028	-6.30	-0.034	-3.12
Health fair or poor	0.134	2.65	0.233	3.32	0.151	1.69
College education	0.015	0.44	0.028	0.59	-0.103	-1.30
Self employed	-0.021	-0.51	-0.039	-0.61	0.001	0.01
Retiree health insurance	-0.011	-0.36	-0.071	-1.83	-0.018	-0.26
"Shock" variables						
Change in own health (from good to bad)	0.106	2.27	0.181	2.61	0.079	0.74
Change in DC wealth	0.0002	0.38	0.001	1.05	-0.003	-0.55
Change in financial wealth	0.0004	0.76	0.001	1.43	0.012	2.97
Switched jobs	-0.125	-4.05	-0.227	-5.14	-0.127	-1.93
Care for parents (from <200 hours to >200 hours)	0.266	5.81	0.203	3.82	0.126	1.52
Change in spouse's health (from good to bad)	0.048	0.82	-0.097	-1.50	-	-
Spouse retires	0.017	0.49	0.116	2.89	-	-
Pension Coverage						
Defined benefit	-0.008	-0.24	-0.058	-1.50	-0.102	-1.50
Defined contribution	-0.041	-1.35	-0.042	-1.09	0.019	0.26
Pseudo R-squared:	0.1208		0.1602		0.1636	
Number of observations	882		662		204	

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[1] Regardless of work history, spouses of covered workers are eligible for a spousal benefit equal to 50 percent of the worker's benefit. If the wife is entitled to a benefit based on her own work history, she will receive whichever benefit is larger. If her own benefit is less than the spousal benefit, she is considered dually entitled and will receive her benefit as well as a "supplement" up to the spousal benefit level.
[2] U.S. Social Security Administration (2005a).
[3] This is cohort life expectancy as of 2005. Cohort life expectancy reflects mortality improvements expected in the future. These data are from U.S. Social Security Administration (2006).
[4] U.S. Department of Labor (2005).
[5] For a detailed analysis of annuity pricing by gender, see Campbell and Munnell (2002).
[6] Munnell and Sass (2005).
[7] According to the 2005 Current Population Survey, just over 50 percent of full-time women and men age 25-64 are covered by an employer sponsored plan.
[8] Under current law, the procedure to calculate initial benefits involves four steps. First, a worker's previous earnings are restated in terms of today's wages by indexing past earnings to wage growth. Second, earnings for the highest 35 years are then averaged and divided by 12 to calculate Average Indexed Monthly Earnings. Third, the Social Security benefit formula is applied to the Average Indexed Monthly Earnings to yield the Primary Insurance Amount (PIA) – the benefit payable at the normal retirement age. Finally, benefits are adjusted to produce permanently lower benefits for those who claim before the normal retirement age, and higher benefits for those who delay retirement.
[9] That is, individuals with average life expectancy of, say, 81 years will receive the same lifetime benefits if they claim actuarially reduced benefits at 62 or full benefits four years later at 66. But women at age 62 have a life expectancy that is about three years longer than that for men – this is not taken into account by Social Security when calculating benefits. Therefore, more women than men are likely to live beyond the "break-even age" and would gain from postponing retirement past age 62.
[10] Munnell and Soto (2005).
[11] This information comes from the Health and Retirement Study (HRS), a nationally representative survey of older Americans.
[12] Metropolitan Life Insurance Company (1999).
[13] Blau (1998), using the Retirement History Survey, found that among 30 to 40 percent of married couples the spouses left the labor force within a year of each other. Hurd (1988), using the Social Security Administration's New Benefit Survey estimated that among one quarter of couples, the husband and wives retired within one year of each other. Johnson and Favreault (2001), looking at married couples in the 1998 wave of the HRS, calculated that between 22 and 40 percent of husbands and wives retired within two years of each other.
[14] Models estimated by Gustman and Steinmeier (2000) and Hurd (1988) support the hypothesis that husbands and wives view their own leisure and that of their spouse as complementary. Coile (2003), using the HRS, found that people not only respond to the financial incentives created from their own Social Security and employer-provided benefits but also to spillover effects from their spouse's incentives. Coile interpreted these results as an indication that spouses are eager to coordinate their retirements.
[15] Hurd (1988) and Gustman and Steinmeier (2000).
[16] Johnson and Favreault (2001).
[17] National Center for Health Statistics (2005).
[18] The following analysis is based on Munnell, Cahill, and Jivan (2003). It differs primarily in the definition of pension coverage. In this study, pension coverage pertains to the individual rather than the household and to the current job only rather than any job.

[19] The HRS is conducted by the Institute for Social Research (ISR) at the University of Michigan and is made possible by funding from the National Institute on Aging. See Juster and Suzman (1995) for a detailed overview of the survey. More information is available at the ISR website: http://hrsonline.isr.umich.edu/.

[20] Total financial wealth is equal to the value of assets in stocks, bonds, checking accounts, certificates of deposit, and any other account, minus household debt. All wealth variables are measured in $10,000 increments.

[21] Although individuals with a stronger taste for work may accumulate more financial assets, we do not control for it. Despite that, in our analysis financial wealth has a negative effect on the probability of being employed and is statistically significant. Controlling for taste would make the effect of financial wealth more negative.

[22] Whenever possible, both the respondents' retirement expectations and the independent variables are defined as of 1992. For a few individuals, information on *expected* retirement age was taken from later waves, and some information on expected Social Security benefits was taken from later waves in order to avoid significantly reducing the sample size. Limiting the sample to those who are currently employed reduces the number of observations from 12,650 to 8,370. Missing information – primarily for benefits under defined benefit plans, defined contribution plans, Social Security and expected retirement age – further reduces the sample to 4,955. Another 652 respondents were missing pension wealth information for their previous jobs. The equation was estimated both with and without these individuals, and the results were virtually identical. Since their inclusion did not change the results, we kept them in the sample.

[23] Unlike the earlier equation, age is entered continuously and with a spline because people are likely to respond differently after 55, the age for early retirement under many private pension plans. Note that older individuals in the sample have a more limited set of options for expected retirement ages than younger individuals. See Munnell, Triest and Jivan (2004).

[24] Defined benefit, defined contribution, and Social Security wealth are household numbers. The reasoning is that retirement incentives apply to the individual but once the wealth has been accumulated it becomes part of the household's pile of assets and affects the retirement decision of others in the household as well as the covered worker.

[25] Pension status (having a defined benefit or defined contribution plan) is based only on the worker's current job.

[26] The explanatory variables include those from the original 1992 regression of *expected* retirement age and new "shock" variables. The original variables are age, fair or poor health, college, self employment status, retiree health insurance, and indicators for the defined benefit and defined contribution coverage. The "shock" variables – deterioration in health status, deterioration in spouse's health status, change in defined contribution wealth, change in financial wealth, spouse retires, switched jobs, and onset of caring for parents – are likely reasons why people might change their retirement plans.

[27] Deterioration reflects a decline in the respondent's assessment from "excellent," "very good," or "good" to "fair"/"poor," or from "fair" to "poor."

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