

Determinants Of Employment Among Older Americans

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Because of the low rate of saving among households and concerns about the solvency of the Social Security trust fund, it is likely that more Americans will have to work beyond the now traditional retirement age of 65. This study uses data from the 1998 Survey of Consumer Finances to examine the factors that account for the differences in the employment status of individuals aged 65 or over. The study classifies individuals as being employed full time, employed part time, or not employed. Logistic regression analysis is then used to examine the factors that affect differences in employment status.

Key words: *Labor force participation, Logit, Poverty, Retirement, Survey of Consumer Finances*

Introduction

Because of the aging of the U.S. population there is an increasing interest in issues surrounding the economic security of older Americans. Currently, approximately 15% of the U. S. population is over age 65. This percentage is expected to increase to over 30% by 2034 (U.S. Bureau of the Census, 1998). At the same time that older Americans continued to increase as a percentage of the total population, the age at which Americans have chosen to retire continuously declined during most of the twentieth century (Quinn, 1999). The result is that an increasing number and proportion of older Americans are dependent on non-labor income for their economic security.

Social security is a major source of income for many retirees, accounting for an average of 40% of the total income of retirees (McDonnell, 2000). For lower income retirees, Social Security is virtually the only source of income. In 1998, individuals in the lowest income quintile of retirees over age 65 were dependent on Social Security benefits for 90% of their income (DeVaney & Chien, 2001). However, because of the aging of the U.S. population and the granting of more generous benefit payments beginning in the early 1970s, the solvency of the Social Security system is being threatened. The Board of Trustees of the Social Security system (1999) projects that the ratio of workers who support the Social Security system with their payroll taxes to the recipients of Social Security benefits will decline from the current level of 3.4 to 1.8 by the year 2075. A proposed solution to this looming problem is to continue to gradually increase the Social Security

retirement age (Mitchell & Quinn, 1995). It is argued that such an increase in the retirement age would enhance the solvency of the fund by: (a) collecting payroll taxes from workers for a longer period, and (b) reducing the period over which retirees would receive benefits. The rationale for this proposal is that Americans are healthier and live longer than when the Social Security retirement program was established in the 1930's (Montalto, Yuh & Hanna, 2000).

Hence, there is a great likelihood that future retirees will have to wait longer to retire if they are going to depend on Social Security for a significant amount of their income during the retirement years. Given this, is it likely that future retirees will be able to tap other sources of non-labor income to provide a significant proportion of their income during their retirement years? Using data for households in which the household head was age 35 to 70 and worked full time, Yuh, Montalto and Hanna (1998) found that, under current Social Security provisions and life expectancies, nearly half of the individuals in their sample would not have adequate resources to retire at the time of their planned retirement age. In order to retire at the time planned, these individuals would have to (a) increase their saving rates during their working years, (b) reduce their consumption levels during their retirement years, or (c) continue to work beyond the planned retirement date.

Given the fiscal condition of the Social Security trust fund and the limited resources that households have accumulated for retirement, there is a great likelihood that a significant number of Americans will face the

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prospect of working beyond the traditional retirement age of 65. To what extent will older individuals be able and willing to work beyond this age? There has been little research that addresses this issue. Most of the related research has been concerned with identifying the factors associated with the actual or planned retirement age of individuals in their mid to late 50's and early to mid 60's. Previous research has focused on identifying factors that differentiate between individuals who choose to retire before age 65 (i.e. who take "early retirement") and those who retire at age 65 or later.

The objective of this study is to identify the factors that account for the differences in the employment status of individuals aged 65 or over. Specifically, the study develops explanatory models to differentiate between: (a) individuals who are employed and individuals who are not employed and (b) individuals who are employed full-time and individuals who are employed part-time.

Literature Review

A variety of factors have been posited to influence an individual's retirement age, including: (a) the individual's eligibility for Social Security and employer-provided pension benefits, (b) the income that the individual is able to earn from non-pension assets, (c) the nature of the employment in which the individual was engaged during his working years, (d) the individual's family situation, (e) the presence of dependent children in the individual's household, (f) the individual's health, (g) the availability of health insurance after retirement and (h) the individual's demographic characteristics.

Quinn (1977) and Burtless and Moffitt (1985) found that higher Social Security benefits tend to lead to earlier retirement, other things being equal. However, they found the effect to be relatively small. Likewise, Samwick (1998) found the effect of the level of Social Security benefits on the retirement age to be marginal.

Higher pension benefits also provide an incentive to retire earlier, other things being equal. Samwick (1998) found that the level of pension benefits had a larger impact on determining the retirement age than did the level of Social Security benefits. Kotlikoff (1979) found a statistically significant relationship between pension coverage and the expected retirement age. He found that individuals covered under a private pension plan expected to retire 1.2 years earlier than those without such a plan. Individuals covered by a government pension plan were expected to retire 1.8 years earlier than individuals not covered by such a plan. Wise (1997)

found that participants in defined benefit pension plans tend to retire earlier than participants in defined contribution plans, other things being equal. This is the case, Wise argued, because many defined benefit plans are structured in such a way so as to penalize workers who work beyond the plan's normal retirement age. Defined contribution plans do not have such work disincentives.

To meet the needs of those who are not covered by employer sponsored retirement plans and self-employed workers, Keogh plans and Individual Retirement Accounts (IRAs) provide an alternative. Although the amount of the annual contribution to an IRA has remained constant at \$2,000 since 1974 (rising to \$3,000 in 2002 as a result of the Economic Growth and Tax Relief Reconciliation Act of 2001), IRAs offer advantages to workers, especially those who are highly mobile. In the early-to mid-1980s, the growth in IRAs was attributed to contributions that were made primarily to reduce income taxes. More recently, stock market gains and rollovers have been the primary source of growth in IRAs (Fronstin, 1998; Sabelhaus, 1999).

The level of financial and nonfinancial assets accumulated outside of pension plans was also found to affect the retirement age. Montalto et al. (2000) found that the level of financial and nonfinancial assets accumulated outside of pension plans lowered the planned retirement age to a greater extent than did the level of assets accumulated in IRA/Keogh accounts or defined-contribution pension plans. However, they found that such assets had a smaller effect on the planned retirement age than did the ownership of a defined benefit plan.

Previous research indicates that the nature of employment in which the individual is engaged during his work life affects the retirement age. Uccello (1998) found that individuals who were employed in physically demanding jobs retire at earlier ages than individuals who were employed in less physically demanding jobs. Montalto et al. (2000) argued that self-employed individuals may work longer than wage and salary employees because individuals who are self-employed are able to extend their working life at their own discretion. However, they did not find a statistically significant relationship between self-employment status and planned retirement age.

Favreault, Ratcliffe and Toder (2000) posited that an individual's family situation affects his retirement

decision. Although they did not specifically test the proposition in their research, Favreault et al. (2000) argued that individuals coordinate their retirement decisions with those of their spouses. They argued that the value of leisure time increases if it can be shared with a spouse. Hence, an individual is more likely to retire if his spouse is retired than if the spouse is working, other things being equal. Boskin and Hurd (1978), using data from a panel study of household heads 58-63 years of age, found that the presence of dependent children in the household delayed the retirement age. They argued that this relationship held because the income needs of the household increased with the number of dependent children.

Most previous studies found that individuals in poor health retire earlier than individuals in good health (for example, Burtless and Moffitt, 1985, Diamond and Hausman, 1984, Kotlikoff, 1979, Quinn, 1977, and Uccello, 1998). However, recent research by Crimmins, Reynolds and Yasuhiko (1999) indicates that the health of older workers has improved since the 1980's and that there has been a decline in the physical demands of work. Hence, they argue that health considerations will be less of an impediment to work in the future.

A number of studies have examined the role of health insurance in the retirement decisions of older workers. Rust and Phelan (1997) estimated that male workers age 58-59 who have employer-provided health insurance but no retiree health benefits are eight times less likely to quit than those who have retiree health insurance, Medicaid, or are uninsured. Karoly and Rogowski (1994) found that access to retiree health benefits increased the probability that men age 55 to 62 would retire in two years by 8 percentage points. Rogowski and Karoly (2000) found that older male workers who had access to post-retirement health insurance are 68% more likely to retire than their counterparts who would lose employment-based health insurance upon retirement.

Previous empirical research dealing with the retirement decision took into account the individual's demographic characteristics. Some studies controlled for demographic characteristics by limiting their analysis to specific demographic groups. Boskin (1977) and Kotlikoff (1979) limited their analysis to males of various age groups. Quinn (1977) limited his analysis to white married males between the ages of 58 and 63. Others studies included personal characteristics as explanatory variables. Uccello (1998) stratified the study sample by gender and age and included race, marital status, and

education as explanatory variables. She found that individuals with higher levels of education are more likely to retire at an earlier age, although she did not provide a rationale for this relationship. She found no statistically significant difference in the retirement decision between married and unmarried individuals. She did not find race to be statistically significant for men but found that white women are more likely to retire at an earlier age than nonwhite women. Montalto et al. (2000) found that Black Non-Hispanics and Hispanics planned to retire at a younger age than Whites. They also found that an increase in age increased the planned retirement age. In contrast to Uccello (1998), Montalto et al. (2000) found that individuals who completed college planned to work longer than individuals who did not graduate from high school. However, individuals who completed high school or some college did not have significantly different planned retirement ages than individuals who did not complete high school.

Methodology

Data and Sample

Data used in the study were drawn from the 1998 Survey of Consumer Finances (SCF).^a Only those cases where the household head was age 65 or older were used in this study. There were 904 households where the head was 65 or older. When a weight variable was applied, 18% of the household heads age 65 and over were in the labor force. Further, 43% of the older household heads who were in the labor force were working full-time while the remaining older workers worked part-time.

A multiple imputation process is used to impute missing data. The multiple imputation approach was suggested by Rubin (1987). Multiple imputation replaces each missing value with a vector of two or more values. Thus, it creates two or more complete data sets. According to Rubin, multiple imputation is superior to single imputation because it increases the efficiency of estimation and it makes references valid by reflecting additional variability due to the missing values. Beginning with the 1989 Survey of Consumer Finances, multiple imputation has been used to replace each missing value with five values. This results in five complete data sets, referred to as *implicates* (Kennickell, 1991). In using multiple-imputed data, two stages of analysis are needed. First, standard methods such as regression analysis are applied to analyze each data set. Then, inferences from each data set should be combined.^b

Conceptual Framework and Dependent Variables

The labor force status of individuals age 65 and over is

hypothesized to be a function of (a) whether or not the individual is receiving Social Security or pension benefits, (b) whether or not the individual has an IRA or Keogh account, (c) the income earned from non-pension assets, (d) the nature of employment in which the individual was engaged during most of his working years, (e) the individual's family situation, (f) the presence of dependent children under age 22, (g) the individual's health and (h) the individual's demographic characteristics.

The type of health insurance that is available to an individual upon retirement relative to the type that is available while employed affects the retirement decision. However, the data set used in the analysis does not contain variables that would allow us to incorporate this construct into the equation.

Two separate models were tested. The first model attempts to differentiate between those individuals who were employed and those who were not employed. In this model individuals who were employed were assigned a value of 1 and individuals who were not employed were assigned a value of 0. The second model considers only employed individuals and attempts to differentiate between those individuals who were employed full-time and those who were employed part-time. In this model individuals who were employed full-time were assigned a value of 1 and individuals who were employed part-time were assigned a value of 0. An individual's employment status was self-reported as being employed full-time, employed part-time or not doing any work for pay. If an individual was laid off or was a seasonal worker, he was asked to report about the nature of his job when he is working. The models are tested using logistic regression analysis because the dependent variables are dichotomous (Kennedy, 1994).

The Explanatory Variables

Table 1 shows the coding of the variables. Other things being equal, eligibility for Social Security and pension benefits provides a source of income to individuals who are retired, thus reducing the need to earn income from employment. Also, at the time the survey was conducted, individuals who were less than age 70 were restricted in the amount of income that they could earn from employment if they wanted to receive full Social Security benefits (Social Security Administration, 2001). Accordingly, it is expected that individuals who are not receiving Social Security or pension benefits are more likely to be employed than individuals who are receiving such benefits. The Social Security variable is specified as

follows: *Receives Social Security* = 1 if the individual is receiving Social Security benefits and 0 otherwise. The pension variable is specified as follows: *Receives Pension* = 1 if the individual is receiving pension benefits and 0 otherwise.

Ownership of IRAs and Keogh plans is included as a variable to capture the effect of resources held by individuals in addition to or in place of employer pensions. It is hypothesized that individuals with savings in IRAs and Keogh plans are less likely to work, other things being equal. However, mandatory withdrawal from traditional IRAs does not occur until after an individual reaches 70 ½. Therefore, individuals might continue to work beyond age 65 in order to contribute to their IRA or Keogh plan and increase their savings for retirement. The IRA or Keogh variable is specified as follows: *IRA or Keogh*=1 if the individual has an IRA or Keogh account and 0 otherwise.

Other things being equal, it is expected that an individual's labor market status depends on the amount of non-labor income, in addition to the income from pensions and Social Security, that is received by the individual's household. An individual is more likely to be employed if the individual's household receives little or no income from non-labor sources. The variable for non-labor income is specified as *Asset Income* and consists of the annual income (in thousands of dollars for the year 1997) that the individual's household received from the following sources: interest income, dividend income, capital gains income, and rental income.

Other things being equal, it is expected that individuals with a history of being employed in occupations that are physically demanding are less likely to be employed after age 65 than those individuals with a history of being employed in less physically demanding jobs. To capture the individual's type of occupation, the dummy variable *Manual Laborer* was constructed based on the individual's occupation in his longest job. The following occupations were considered to be physically demanding:

- a. Farming, forestry, and fishing occupations.
- b. Operators, fabricators and laborers.
- c. Precision production, craft and repair occupations.

Individuals who were employed in their longest job in one of the above occupations were assigned a value of 1 for the variable *Manual Laborer*. All others were assigned a value of 0.

Whether or not an individual has a history of being self-employed or a wage or salary employee is expected to affect his labor market status after age 65. Following Montalto et al. (2000), it is posited that individuals who were self-employed in their longest job are more likely to be employed after age 65 than individuals who have a history of being employees. Montalto et al. (2000) hypothesized that self-employed individuals may work longer than wage and salary employees because individuals who are self-employed are able to extend their working life at their own discretion. To capture the effect of self-employment, the dummy variable *Self-Employed* was constructed based on the individual's occupation in his longest job. Individuals who were self-employed on the longest job during their work history were assigned a value of 1 for the variable *Self-Employed*. All others were assigned a value of 0.

An individual's marital status and the labor market status of his spouse if he is married should affect his labor market status. It is expected that, if an individual is married and his spouse is not working, he is less likely to be employed than if his spouse is employed, other things being equal. Hence, a set of gender-marital status-spouse labor market status variables are constructed as follows:

- a. *Married-Spouse Not Employed* = 1 if the individual is married and his spouse is not employed, otherwise *Married-Spouse Not Employed* = 0
- b. *Married-Spouse Employed* = 1 if the individual is married and his spouse is employed, otherwise *Married-Spouse Employed* = 0.
- c. *Unmarried Female* = 1 if the individual is a female and not married, otherwise *Unmarried Female* = 0.
- d. *Unmarried Male* = 1 if the individual is a male and not married, otherwise *Unmarried Male* = 0.

The variable *Married-Spouse Employed* is omitted from the equation because it is a linear combination of other variables.

Following Boskin and Hurd (1978), it was expected that the presence of dependents under age 22 in the household increases the income needs of the household and, hence, delays the retirement age. Given these higher income needs, the presence of dependent children under age 22 should increase the probability of employment, other things being equal. To incorporate this variable into the equation, the dummy variable *Child at Home* was constructed. If the individual's household contained one or more children under age 22, this variable was assigned a value of 1 and 0 otherwise.

An individual's health is expected to affect his labor market status. Individuals in excellent or good health are more likely to be employed than individuals in fair or poor health, other things being equal. The health variable is specified as the dummy variable *Health*. Individuals who reported their health to be excellent or good are assigned a value of 1 for this variable while those who reported their health to be fair or poor are assigned a value of 0.

In addition to the gender-marital status-labor market status variable, the demographic variables race, age, and education are contained in the equation as control variables. The race variable is specified as the dummy variable *White* (White-Non-Hispanic = 1, other races = 0). The age variable is specified as the continuous variable *Age*. Education is entered into the equation as a set of dummy variables as follows: *Less than High School Graduate* (less than high school graduate = 1, other = 0), *High School Graduate* (high school graduate = 1, other = 0), *Some College* (some college = 1, other = 0), and *College Graduate* (college graduate = 1, other = 0). To avoid singularity, the variable *Less than High School Graduate* is omitted from the equation.

The Findings

The descriptive statistics for the explanatory variables used in the equations to predict the employment status of individuals age 65 or older are shown in Tables 1 and 2. The results of the logistic regression equation to differentiate between individuals who are employed and those who are not employed are shown in Table 3. As hypothesized, individuals who are receiving Social Security and pension benefits are less likely to be employed than those who are not receiving these benefits. Both variables are highly significant. Other things being equal, if an individual receives Social Security benefits, the odds that he will be employed are only 36% of those of an individual who does not receive such benefits. If an individual receives pension benefits the odds that he will be employed are 48% of those of an individual who does not receive pension benefits, other things being equal. The variable *IRA or Keogh* was not statistically significant.

The variable *Asset Income*, which measures the non-labor income received by the individual's household (in addition to the Social Security and pension income received), is significant at the .0016 level. However, the relationship between this variable and the individual's employment status is not as posited. Rather, increases in asset income increase the probability of being employed,

though the effect is very small. Possibly, this relationship holds because individuals who have accumulated wealth that provides asset income continue to work because they have wealth accumulation goals independent of their retirement income needs.

Table 1.

Coding and Weighted Frequencies for All Household Heads Age 65 and Older and for Household Heads Age 65 and Older Who Are Employed

Variable	Coding	Weighted Frequencies (In Percent)	
		All Household Heads (%)	Employed Household Heads (%)
Labor Market Status (dependent)	1 = employed	30.42	
Receives Social Security	1 = receives SS benefit, 0 otherwise	86.11	73.82
IRA or Keogh	1 = has account, 0 otherwise	29.86	36.47
Receives Pension	1 = receives pension benefits, 0 otherwise	46.01	39.89
Manual Laborer	1 = longest job was physically demanding, 0 otherwise	31.63	28.67
Self-Employed	1 = self-employed in longest job, 0 otherwise	10.77	16.01
Married-Spouse Employed	1 = yes, 0 otherwise	9.23	24.42
Married-Spouse Not Employed	1 = yes, 0 otherwise	37.45	32.71
Unmarried Female	1 = single, divorced, or widowed female, 0 otherwise	42.34	31.14
Unmarried Male	1 = single, divorced or widowed male, 0 otherwise	10.98	11.74
Health	1 = excellent or good health, 0 otherwise	58.94	76.99
Child under 22 at home	1 = child < 22, 0 otherwise	1.40	1.45
Race	1 = white, 0 = otherwise	87.25	90.45
< 12 years education	1 = yes, 0 = otherwise	31.82	24.28
High School Graduate	1 = yes, 0 = otherwise	30.75	28.40
Some College	1 = yes, 0 = otherwise	16.61	16.86
College Graduate	1 = yes, 0 = otherwise	20.82	30.46

Table 2.

Coding and Weighted Means and Standard Deviations for All Household Heads Age 65 and Older and for Household Heads Age 65 and Older Who Are Employed

Variable		Mean (Standard Deviation)	
		All Household Heads	Employed Household Heads
Age	continuous	74.84 (7.01)	70.59 (4.52)

Asset income	continuous	\$13,600 (\$145,700)	\$27,200 (\$273,400)
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An examination of the nature of employment in which the individual was engaged for the longest period of his work life indicates that the variable *Manual Laborer* is not statistically significant. This finding suggests that the physical demands of work are not an impediment to employment for older workers. The finding with respect to the variable *Self-Employed* is not as expected. The variable is statistically significant at the .001 level but has a negative sign. An individual who was

self-employed on the job in which he was employed for the longest period of his work life is less likely to be employed at age 65 or older than is an individual who was a wage or salary employee. The odds of a self-employed individual being employed at age 65 or older are only 47% of those of a wage or salary employee. Possibly, individuals who were self-employed during most of their work life view the equity that they have accumulated in their business operations as assets to provide economic security during the retirement years. As they approach their retirement years, these individuals may sell their businesses in order to use the assets as a source of income during their retirement years. In the process they eliminate the source of their employment income. And, since they have a history of being self-employed, they may be disinclined to become employees.

Table 3.

Results of Logistic Regression to Predict Employment among Household Heads 65 and Older

Variable	Parameter Estimate	P-value	Odds Ratio
Receives Social Security	-1.0302	0.0001‡	0.3569
IRA or Keogh	-0.2210	0.2630	0.8017
Receives Pension	-0.7434	0.0001‡	0.4755
Asset income (\$10,000)	0.0021	0.0016†	1.0021
Manual Laborer	-0.4265	0.1799	0.6539
Self-Employed	-0.7496	0.0010†	0.4726
Married-Spouse Not Employed	-0.9405	0.0003†	0.3904
Unmarried Female	-1.7115	0.0001‡	0.1860
Unmarried Male	-0.2695	0.4221	0.7638
Health Excellent or Good	0.9026	0.0001‡	2.4660
Child At Home	-0.9464	0.1329	0.3881
White	0.4676	0.1763	1.5962
High School Graduate	-0.1406	0.7102	0.8688
Some College	0.1239	0.6984	1.1319
College Graduate	0.3540	0.2308	1.4247
Age	-0.0570	0.0001‡	0.9446
Intercept	4.4269	0.0001	

*P-value≤.05, † P-value≤.01, ‡ P-value≤.001

As expected, a married individual with a non-working spouse is less likely to be employed than is a married individual with a working spouse. Other things being equal, the odds of a married individual with a non-working spouse being employed are only 39% of those of a married individual with a working spouse. An unmarried female is less likely to be employed than is a married individual with a working spouse. The odds of an unmarried female being employed are only 18% of those of a married individual with a working spouse. There is no significant difference in the labor market status of unmarried males and married individuals with a working spouse.

An individual's health is a highly significant factor affecting the individual's labor market status. The odds of an individual who is in good or excellent health being employed are 147% greater than the odds for an individual in fair or poor health, other things being equal. Thus, poor health constitutes a significant barrier to continued employment among the sample individuals.

The variable *Child at Home* is not statistically significant. Only 1.4% of the households still had dependent children at home and this variable does not affect the employment status of the household head.

The demographic variable *Age* is a significant predictor of labor market status, but the variables race and education are not. Other things being equal, the odds of an individual being employed declines by 5% for each additional year that he ages.

The results of the logistic regression equation to differentiate between employed individuals who are employed full-time and individuals who are employed part-time are shown in Table 4. The following variables were statistically significant in differentiating between individuals employed full-time and those employed part-time: (a) *Receives Social Security*, (b) *Receives Pension*, (c) *Manual Laborer*, (d) *Self-Employed*, and (e) *College Graduate*.

Individuals who are receiving Social Security benefits are less likely to be employed full-time than are individuals not receiving such benefits. Other things being equal, if an individual receives Social Security benefits the odds that he will be employed full-time are only 44% of those of an individual who does not receive such benefits. This is as expected. At the time of the survey, individuals under age 70 were restricted in the amount of income they could receive from employment if they

wanted to receive full Social Security benefits. Hence, some of the individuals between the ages of 65 and 70 in all likelihood worked part-time rather than full-time in order to receive full Social Security benefits.

If an individual receives pension benefits, the odds that he will be employed full-time are only 31% of those of an individual who does not receive such benefits. This is as expected since the income received from pension benefits reduces the need to work full-time.

The variable *Manual Laborer* is not statistically significant in differentiating between individuals who were employed and those who were not employed, but is statistically significant in differentiating between individuals who were employed full-time and those who were employed part-time. Other things being equal, the odds that an individual who was engaged in a manual labor type occupation during his longest job is employed full-time are only 24% of those for an individual who was not employed in such an occupation. Possibly, because of the physical demands of manual labor type occupations, individuals who have a history of being employed in manual labor type occupations are able to continue in such occupations only on a part-time basis or possibly they switch to less demanding occupations that are available only on a part-time basis. Individuals with a history of employment in occupations that are less physically demanding are more able to continue in their occupations on a full time basis.

Table 4.

Results of Logistic Regression to Predict Full-time Employment among Household Heads 65 and Older Who Are Working

Variable	Parameter Estimate	P-value	Odds Ratio
Receives Social Security	-0.8134	0.0101*	0.4433
IRA or Keogh	0.2256	0.6402	1.2531
Receives Pension	-1.1791	0.0001‡	0.3076
Asset income (\$10,000)	-0.0002	0.2608	0.9998
Manual Laborer	-1.4098	0.0037†	0.2442
Self-Employed	-1.0571	0.0076†	0.3475
Married-Spouse Not Employed	-0.3789	0.4531	0.6846
Unmarried Female	-0.8699	0.4301	0.4190
Unmarried Male	0.3964	0.4382	1.4865

Health Excellent or Good	0.5187	0.2179	1.6798
Child At Home	0.4639	0.6895	1.5903
White	0.2507	0.7013	1.2849
High School Graduate	-1.0020	0.8662	0.3671
Some College	-0.8734	0.1635	0.4175
College Graduate	-1.2223	0.0387*	0.2945
Age	-0.0236	0.3956	0.9767
Intercept	3.7558	0.0802	

*P-value<=.05, † P-value<=.01, ‡ P-value<=.001

The variable *Self-Employed* is statistically significant in differentiating between individuals who are employed full-time and those employed part-time. The odds of an individual who has a history of self-employment being employed full-time at age 65 or older are only 35% of those of an individual who has a history of being a wage or salary employee. Possibly, self-employed individuals who continue their employment find full-time self-employment to be too demanding. And, since these are the self-employed individuals who continue ownership of the business, they may find it easier to transition to part-time employment than do wage and salary employees.

Individuals who have graduated from college are less likely to be employed full-time than individuals who completed less education. The odds of an individual who graduated from college being employed full-time are only 29% of those of an individual who did not complete high school, other things being equal. The variables *High School Graduate* and *Some College* are not significant.

Summary and Implications

The objective of this study was to identify the factors that account for the differences in the employment status of individuals aged 65 or over. Specifically, the study developed models to differentiate between: (a) individuals who are employed and individuals who are not employed and (b) individuals who are employed full-time and individuals who are employed part-time.

Using data from the 1998 Survey of Consumer Finances, the findings indicate that nearly one-fifth of the sample individuals aged 65 or over were employed. Over 40% of those employed were employed full-time.

The labor market status of the sample individuals was influenced by a variety of factors. Health is a highly

significant factor affecting labor market status. Individuals who were in good or excellent health were much more likely to be employed than were individuals in fair or poor health. Individuals who received Social Security or pension benefits were less likely to be employed, other things being equal. Increases in the asset income of the individual's household increased the individual's odds of being employed, although the effect of asset income is quite small. Individuals who were self-employed in the job that they held for the longest period of their work life were less likely to be employed at age 65 or older than were individuals who were employees. Married individuals with a non-working spouse were less likely to be employed than were married individuals with a working spouse, and unmarried females were less likely to be employed than were married individuals with a working spouse. As individuals aged their probability of being employed declined.

What differentiates individuals aged 65 or over who are employed full-time from those employed part-time? As expected, individuals who receive Social Security and pension benefits are less likely to be working full time than are individuals who are not receiving such benefits. Having a history of being employed in a manual labor occupation is not an impediment to employment but it is an impediment to full-time employment after age 65. Individuals who have a history of being self-employed are more likely to be working part time than are individuals who have a history of wage and salary employment. College graduates who are employed are more likely to be employed part time than are individuals with less education.

Implications for Financial Planning

Recently, there has been a considerable amount of discussion in the financial planning profession about the limited assets that households in the U.S. have accumulated to provide economic security in their later years (e.g., Yuh et al., 1998). It is assumed in these discussions that individuals will simply stop working at a certain age. The implication is that in order to provide economic security in their later years, these individuals will have to increase their rate of saving, earn higher returns on their assets, or work longer. Implicit in much of the discussion is the assumption that work is a last resort for those individuals who failed to accumulate the assets necessary to provide for economic security in their later years. However, the findings of this study indicate that continued employment at age 65 and beyond is a viable option for providing household income for a

significant number of individuals. Given these findings, it is appropriate for those who are engaged in providing advice in the area of retirement planning to explore the employment prospects and plans that their clients have for their later years. Given the relatively large number of individuals aged 65 or over who are employed, it is appropriate for the financial planner, when advising individuals on issues related to retirement planning, to assess the stock of human capital that the client has accumulated. In addition, given that health is a highly significant factor affecting the employment status of individuals aged 65 or older, the financial planner should advise the client of the economic value of engaging in healthy lifestyles and pursuing health care practices that serve to maintain the value of the individual's accumulated human capital.

Implications for Public Policy

Given the fiscal condition of the Social Security trust fund and the labor shortages that began to emerge in the 1990's, it is likely that public policymakers will search for ways to provide an environment that encourages older Americans to delay the time that they retire. In fact, a number of policies that facilitate employment among older Americans have already been put in place. The age at which individuals can earn unlimited income from employment without having their Social Security benefits reduced has recently been lowered from age 70 to the full Social Security retirement age (currently age 65). Employment discrimination based on age has been outlawed.

Undoubtedly, the long-term growth in the U.S. economy will continue to be punctuated by periods of recession and unemployment. However, because of the aging of the population and the decline in the relative size of the traditional working age population, the long run trend will likely be one of tighter labor markets and labor shortages. Given the prospect of tighter labor markets in the future, it is likely that private sector employers will have sufficient incentive to configure their work environments in such a way so as to retain older employees. If these tight labor market conditions continue to hold, specific public policies to provide such incentives will not be necessary.

The findings of the study indicate that poor health is a major impediment to continued employment among older Americans. This suggests that the issue of health for older Americans involves more than simply examining the cost effectiveness of alternative health care delivery systems. Improving the general level of health among

Americans may serve to extend their work life and thus increase the size and productivity of the labor force and reduce the cost of transfer payments. Alternative approaches to sustaining good health should be examined. For example, the value of alternative education programs that acquaint the public with the benefits of healthy lifestyles and good health practices, including their effects on work life longevity, should be examined.

Endnotes

- a. The survey is conducted every three years by the National Opinion Research Center at the University of Chicago (Kennickell, 2000). Sponsored by the Federal Reserve Board of Governors, the survey provides detailed information on household assets, and liabilities and demographic characteristics of U.S. households. In 1998, the sample included 4,308 households. The survey is based on a dual-frame sample design. One set of the survey cases was selected from a standard multi-stage area-probability design and the second set was selected from statistical records derived from tax data of the Internal Revenue Service. The two samples consisted of 2,813 and 1,496 cases, respectively. Information on three cases was not released to the public.
- b. Following Rubin's (1987) suggestions, Professor George McCabe in the Department of Statistics at Purdue University developed a program in interactive matrix language (IML) in the early 1990s to merge the output of the regressions from the data sets. The multiple imputation analysis developed by McCabe was used by Sung (1993) in her dissertation and Choi in her thesis (1994) which was subsequently published in Choi and DeVaney (1995).

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