Job Search Behavior of Older Americans[†]

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Abstract

This paper presents an empirical analysis of job search behavior among older Americans using the Health and Retirement Study. Increasing longevity, improving health conditional on age, increasing labor supply flexibility stemming from an increase in part-time work, self-employment and the use of technological advances to promote second careers, and increasing labor force participation, make the study of search behavior at the end of the life cycle an important research topic. The analysis shows that older Americans actively search for new jobs, both on-the-job and when out of work, and that previous work attachment and health limitations are key to understanding the different job search behavior of employed and non-employed individuals, as well as males and females.

Keywords: Job Search Behavior, Binary Choice Models, Health and Retirement Study.

JEL classification: J14, I28, D0

1 Introduction

This paper analyzes the job search behavior of older Americans using data from the Health and Retirement Study (HRS), presenting one of the first empirical studies of this behavior among this population. Job search behavior among older Americans, although mentioned in the literature for almost two decades, has been less formally modeled than, for example, retirement incentives and their policy implications.

Several factors currently compound to make this topic an important one. Increasing longevity, improving health status conditional on age, increasing labor supply flexibility stemming from an increase in the use of part-time work and the use of technological advances to promote second careers, and increasing labor force participation, make the study of search behavior at the end of the life cycle an important contribution in order to eventually achieve what a key researcher in the study of older Americans already emphasized more than a decade and a half ago: *"If in the next century the nation is to effectively use older workers' skills and experience, the development of new retirement and employment policies must begin today."* (Sandell 1987, p.p. 245).

In Sandell (1987), and also in Borus et al. (1988), the focus was on the problems that older workers face in the labor market. The contributors to those volumes identified four aspects that would help improve the situation of older individuals in the labor force: improving economic conditions; increase in labor market flexibility; investment in training and retraining; and improving job search. A decade and a half after those remarks were made the economic conditions have improved for both younger and older workers, and labor market flexibility has increased substantially among older workers if we consider the increasing trend towards part-time work and self-employment among older individuals. However, there has been relatively little improvement in the understanding of the processes that lead to and foster job search behavior and human capital accumulation at the end of the life cycle. In this study I present a theoretical framework and I introduce empirical evidence that backs the assertion that job search among older Americans is worth

analyzing.

The theoretical framework I introduce builds upon the work of Seater (1977) to account for the fact that search can be a productive use of time within a utility maximizing framework with endogenous decisions regarding consumption and labor supply, and also to consider that older individuals might care about more than their wages when they consider changing jobs or finding a job, depending on their demographic, physical, psychological, and socio-economic characteristics. I complement this theoretical discussion with an empirical analysis of job search behavior at the end of the life cycle using data from the HRS.[1]

The empirical analysis of search behavior at the end of the life cycle presented here represents one of the first efforts to characterize job search as an important issue to consider for older individuals. Up to now most of the research in the Economics of Aging has not paid much attention to search behavior since relatively few people return to work after retirement or work beyond the traditional retirement ages. However, increased life expectancy and improved health, along with new technological opportunities, allow individuals to consider second careers and to search for what researchers have called *bridge jobs* or part-time jobs, as a way of phasing out of the labor force (Quinn 1998, and Friedberg 1999a). This makes the study of the search decision of this population an interesting and novel project. Only a few research efforts, including Hutchens (1988, 1993) and the volumes by Sandell (1987) and Borus et al. (1988), deal directly with the issue of aging and search behavior. However, even those researchers only concentrate on the problems that older workers face to find jobs comparable to those of younger individuals.

Turning to the search literature, the emphasis has mostly been on the empirical analysis of young and middle-aged individuals. Also, theoretical search models have not investigated the implications of the searching parties' distinct characteristic of approaching or having reached retirement age.

The estimation results using cross-section and panel data models show the importance of age, marital status, education, and especially previous work attachment and health limitations in the decision to search for a new job. I find clear differences on the effect of these characteristics, depending on whether the individual

is employed or non-employed, and also observe significant differences between males and females with respect to the importance of the driving forces behind job search decisions.

In the next section I present the theoretical framework. Section 3 presents the data set I am using and evidence of the importance of job search among older Americans. Section 4 analyzes cross-section and panel data estimates of the decision to search for a job by employed and non-employed older Americans. Section 5 concludes.

2 Theoretical Framework

The literature on search models goes back several decades and has been a fertile ground for the introduction of new theories about how labor markets work and evolve, and about how information is used in this and other markets, as discussed, for example, in Stigler's (1961 and 1962) seminal work. Most of the initial efforts were directed at understanding the behavior of unemployed searchers, essentially introducing a theory of voluntary unemployment (McCall 1970, Mortensen 1970, Gronau 1971, Peterson 1972, Whipple 1973, Barron 1975, and Feinberg 1977). That theory tackled the problem from different angles (firms, workers, institutions), and has eventually evolved into the equilibrium models of the labor market that the growing search literature builds upon (Jovanovic 1979, Albrecht and Axell 1984, Burdett and Mortensen 1998, Van den Berg and Ridder 1998). The empirical research has been instrumental in making job search theory a topic of growing interest, as shown by the importance of the work by Kiefer and Neumann (1979), Sandell (1980a, 1980b), Wolpin (1987), Stern (1989), Eckstein and Wolpin (1990), and the empirical literature reviewed in Devine and Kiefer (1991), and Van den Berg (1999).

Researchers have also recognized the importance of on-the-job search, and have studied it in order to better understand the evidence on turnover, quit behavior, and job mobility (Black 1981, Miller 1984, Parsons 1991, Topel and Ward 1992, Neal 1999). Also, the debate on whether individuals actually quit in

order to search for jobs, and whether this is an optimizing behavior has also fostered an interesting body of work with mixed empirical results (Barron and McCafferty 1977, Kahn and Low 1982, Holzer 1987, and Blau and Robins 1990).

Both the theoretical and empirical literature has focused on young or middle-aged individuals.[2] The small literature on older workers that I discussed in the introduction has concentrated on the problems that older workers face to find comparable jobs to those of younger individuals.

The objective of the rest of this section is to theoretically motivate in the tradition of the reviewed literature the analysis of job search behavior among older individuals. I believe the analysis of job search behavior among a cohort of individuals approaching or having reached retirement age deserves a separate description.

In most of the literature individuals are income maximizers, but utility maximization does not change the nature of the problem and can complicate the solutions, and as Whipple (1973) emphasizes, this can affect policy recommendations. Seater (1977) was the first to set up a unified model of consumption, labor supply, and job search, a model that interestingly closely relates to the human capital literature, for example in Ben-Porath (1967) and Heckman (1976a, 1976b), and is the framework used in the analysis here.[3]

It is important to point out that in this section and in the empirical work, I assume, given the results of the exploratory analysis, that we observe a distribution of employed and non-employed individuals exogenously determined with respect to the job search behavior I am studying. In other words, I am going to ignore the fact that it is possible that some individuals quited their jobs in order to search for jobs. This might not be a major drawback of my analysis for various reasons: the population analyzed and the general sense that it is risky for older workers to quit their jobs given the potentially tougher labor market that they face; the very different observable characteristics of the population of employed and non-employed searchers that I present in the next section; the controversy regarding whether is more productive to quit in order to search for jobs (see for example Blau and Robins 1990).

Think of an individual that derives utility from consumption and leisure, and consider that search is a productive use of time that subtracts from an individual's productive time and leisure time. Employed individuals choose how many hours to work (L), how many hours to search (S), and how much to consume (C). Non-employed individuals choose whether to search and how much to consume. In both cases I can assume that consumption is not necessarily equal to earnings because individuals can save, and there might be other sources of income, or some endowment in the form of financial wealth.

Individuals get disutility from work and from time searching, and I am going to assume these are functions of a number of (possibly random) variables such as wages, health, wealth, and also other individual characteristics like age, gender, race, and marital status, and job characteristics. Of the latter set, the variables not explicitly included are represented by X in the equations below. Notice that this is one of the main innovations I introduce here given that I believe older individuals care about more than the wage when making their employment and search decisions, for example they might be interested in jobs that allow them more flexible hours, or a better adjustment to a deteriorating health condition, or that provide a better health coverage. Job search costs include direct monetary costs, foregone earnings and leisure.

Utility for an individual can be written as follows:

$$u(C_t, L_t, S_t) = \frac{\left[C_t^{\eta}\left(1 - L_t(\omega_t, h_t, X_t) - S_t(\omega_t, h_t, X_t)\right)^{1-\eta}\right]^{1-\gamma}}{1-\gamma}, \tag{1}$$

where γ is the coefficient of *relative risk aversion,* and η is the valuation of consumption versus leisure. Total available time for a given period has been normalized to 1. Consumption and leisure are substitutes or complements depending on the value of γ as discussed in Heckman (1974) and Low (1998 and 1999), with the cutoff approximately equal to 1. In the discussions below I will assume γ larger than 1, implicitly assuming substitutability between consumption and leisure.

The individuals face a number of constraints. Firstly, there is a budget constraint

$$w_{t+1} = \tilde{r}\left(w_t + \omega_t\left(L_t\right) - C_t - K_s + z\right), \tag{2}$$

where ω represents wages, K_s is the monetary cost associated with job search, balances can be accumulated at a potentially uncertain rate of return $\tilde{r}$, and z is non-labor income. Secondly, there is a restriction excluding the possibility of dying in debt, $w(T) \geq 0$. Notice that the last expression allows for the possibility of introducing bequests. And finally, a condition that relates investments in search with future possible changes in wages and other job characteristics.

In order to be more precise about the last constraint I need to make some additional simplifying assumptions. I will assume that if an individual does not search, their income will follow a known profile, which can, for example, be a function of age. I will also assume the individual controls future wages and future job characteristics through the process of job search, since job search is chosen under the expectation that it will potentially improve the situation (utility) of the individual when a good job offer comes along. A number of the variables that affect the disutility of work and the leisure cost of search are given but the way they interact with the new job characteristics to affect utility is not necessarily given. Following the search literature, I can assume individuals know the distribution of characteristics, among them wages, that the offers from the market contain, and they make their utility maximization decisions taking this distribution as given, and knowing how these characteristics will affect the disutility from work that individuals will have. In short, the third constraint relates a measure of expected changes in wages and other job characteristics to current variables and the search decision. One way of making this constraint explicit is to rewrite the term in (1) corresponding to the disutility of work as a function of last period's search decision:

$$L_t(\omega_t, h_t, X_t, g(S_{t-1}, \omega_{t-1}, h_{t-1}, Z_{t-1})), \tag{3}$$

where $g(\cdot)$ represents the fact that whether search is successful is probabilistic since the individual has to receive an offer and accept it in order to change jobs or become employed. Notice that S_{t-1} is in itself a function of wages, health, and other characteristics as of period $t-1$, and that $g(\cdot)$ is also directly a function of wages and other characteristics, with Z above representing a subset of X. This formulation means that the

job search decision in the previous period should be carried over as a state variable, and so are the relevant characteristics linked to the individual or the type of job. Also, for the purposes of the analysis, and to better link it to the empirical work, I assume search is a binary indicator, which can be understood as indicating that everyone puts the same intensity into searching for a new job.

I will not present here the optimal solutions of this model given that it would be necessary to make further assumptions, especially regarding the effects that some characteristics have on utility and search.[4] In fact the empirical efforts of the next section can be understood as uncovering some of the implicit relationships presented in this theoretical framework by estimating a reduced form model of the decision to search for a job by employed and non-employed individuals.

The main idea behind this theoretical framework, which follows Seater (1977) but in a discrete time setting, is that both employed and non-employed individuals when making their search decision will take into account how their current situation is affecting their utility. An employed individual might want to look for a better job that provides higher utility (lower disutility of work) both because it might provide higher wages but also because it has other attractive characteristics, and will compare the potential gains from search (lower disutility of work and higher potential consumption through higher wages) with the potential costs which are both direct monetary costs and utility costs. For the non-employed it will be a comparison between current resources and the potential income stream from working. In this case it might be convenient to assume non-employed individuals have access to some benefits which could be unemployment benefits or retirement benefits. For example, it is easy to see that if we believe that a given health condition can increase the disutility of work, it is possible that employed individuals will try to find a new job where this health condition results in a lower loss of utility, but their condition can in turn affect the probability of receiving an offer that could improve in utility terms upon their current position. On the other hand, for a non-employed individual a health problem can prevent them from entering the market altogether and result in being a discouraging factor, or a factor that decreases the probability of receiving an offer worth

accepting. A given job characteristic, for example access to health insurance, might have a similar effect on workers and non-employed individuals, since both groups are likely to highly value this access.

3 Data and Summary Statistics

The HRS is a nationally representative longitudinal survey of 7,700 households headed by an individual aged 51 to 61 as of the first round of interviews in 1992-93. The primary purpose of the HRS is to study the labor force transitions between work and retirement with particular emphasis on sources of retirement income and health care needs. It is a survey conducted by the Survey Research Center (SRC) at the University of Michigan and funded by the National Institute on Aging.[5] Up to now data of the first five waves of the survey are available. The last four waves of the data were conducted by phone using the computer assisted technology (CATI) which allows for much better control of the skip patterns and reduces recall errors.

Figure 1 shows the percentage of individuals by age who said they were searching for a job. I consider employees and self-employed individuals to be searching for a job if they answered yes to the question: *Are you currently looking for another job?* For non-employed respondents they answered yes to the question: *Have you been doing anything to find work during the last four weeks?* The same graph also shows the responses of the employed and the non-employed. Given the nature of the HRS I essentially have data for individuals between the ages of 50 and approximately 75.[6] Notice the relatively large percentage of individuals in their fifties who are still actively searching for jobs, a fact that encourages us to investigate further the nature of this activity by older Americans.

Figures 2 and 3 present the information about search behavior for non-employed and employed individuals using the HRS and show that job search is undertaken by a substantial proportion of individuals in the sample, and that their responses to a variety of questions regarding job search show that they are active job seekers. The data presented in the figures is consistent with the theoretical setup presented in the previous

section in that there appear to be a number of variables underlying the decision to search for jobs that go beyond the simplified characterization most of the literature presents where wages are summary statistics in the decision to search for jobs.

Figure 2 shows that 6.5% of non-employed individuals were searching for a job in the month before the interview, and that more than half of those were searching exclusively for a full-time job, and around 25% only wanted a part-time job. Both types of searchers rely quite heavily on direct contacts to try to find a job, and full-time seekers more frequently use employment agencies and informal channels. The chart also shows that among non-searchers a non-trivial proportion actually wants a job, and that almost 60% of them want a part-time job.

Figure 3 presents a similar breakdown for employed workers. Employed individuals search in a higher proportion, 8.3%, and almost 2 out of 3 of them were searching for a full-time job. Both part-time and full-time searchers rely more on direct contacts and informal channels to search for their new job. Among non-searchers, more than 70% said they would not consider other jobs, mainly because of their fear of losing their pension and health insurance benefits.

Additional evidence supporting the enterprise of my work comes from research that finds that the job search indicator has behavioral meaning in a multivariate setting due to its strong impact on the labor supply decisions of older individuals. Benítez-Silva and Heiland (2000), using the HRS, make the case for job search to be an important variable in a reduced form study of labor force transitions. This variable has a sizable effect on transitions from non-employment to employment, and also in transitions from employment to new jobs or self-employment. The first part of this latter result is interpreted as indicating that the distinction between unemployment and out of the labor force is behaviorally meaningful among older individuals, extending the result of Flinn and Heckman (1983) who used data on young men. Also, the result is consistent with the findings of Barron and Mellow (1981), who, using the CPS, find that more search intensity leads to a higher probability of finding a job for non-employed individuals. The second part of the result comes to

emphasize the importance of on-the-job search among this population.

Summary Statistics

The HRS provides the researcher with a large array of socio-economic and demographic variables, health indicators, ADLs, IADLs, and even some variables that measure expectations. Table 1, in panels A and B, presents an exploratory analysis of the data. If we compare the subpopulation of those that report searching for a job with the full sample of respondents, we can observe that they are more likely to be younger, male, and with a higher level of education, and less likely to be white and married. The searchers are likely to have a much lower level of net worth and housing wealth, but a higher level of income in the previous year. Searchers have worked more hours in the year before the interview and worked a higher percentage of the months in the year preceding the interview. They are also more likely not to have health insurance, and less likely to be receiving Medicare or Medicaid. Searchers are in overall better general health, and are less likely to have health limitations, but are more likely to be smokers and moderate drinkers.

It is important, however, to make a clear distinction between those searching on-the-job and non-employed searchers. Compared with those searching on-the-job, non-employed searchers are older, less likely to be male, married, and white, and substantially less likely to hold a bachelor or professional degree. They are on average less wealthy than their employed counterparts, and with lower income levels. Consistent with their employment status they have worked much less during the year preceding the interview, both in terms of hours of work and months of work. Non-employed searchers are also more likely not to have any type of health insurance, and they rely more on Medicare and Medicaid. Finally, non-employed searchers are in overall worse health, and a higher proportion of them has health limitations compared with those searching on-the-job.

4 Cross-Section and Panel Data Estimates

The objective of this section is to show in a multivariate analysis framework what are the determinants of the job search decision among employed and non-employed older Americans. I will use both cross-section and panel data specifications of a binary choice model, where the dependent variable is the decision to search for a job. The usual latent variable model applies convincingly in this case since I will assume that, although there can be many levels of job search intensity, an individual reports searching for a job only if he or she has done enough to be considered a job searcher. That a particular person considers him or herself a job searcher will usually be linked to a given action, such as inquiring about a job, responding to an advertisement in the newspaper, or even spreading the word among a certain network of individuals. The threshold of what it means to be an active job searcher can potentially be very different depending on the individual. I will be able to take into account some of this (observed and unobserved) heterogeneity through the multivariate specifications presented below.

Tables 2 to 8 show the results of my empirical analysis. All of them have a similar structure, the first three columns of each table show the Maximum Likelihood estimates of a Probit model with their standard errors and marginal effects. The last three columns show the Maximum Likelihood estimates of a Random Effects Probit model with standard errors and marginal effects, where I exploit the longitudinal nature of the data to control for unobserved heterogeneity.

It is well known that using the standard probit model with pooled data produces consistent but inefficient estimates (Maddala 1987). However, as shown by Guilkey and Murphy (1993), in finite samples, and if the number of time periods is larger than two, the standard probit model performs quite poorly compared with the Random Effects probit model. For all the models presented below, a Likelihood Ratio test, comparing the pooled probit estimator and the random effects probit estimator, always rejected the pooled estimator in favor of the panel characterization. The LR tests whether the panel variance component is of relevance in

the model.

The Probit estimates are the result of fitting the following standard Probit model:

$$S_i = \alpha + \beta' X_i + v_i, \tag{4}$$

where S is a dichotomous variable indicating whether the individual had searched for a job in the month preceding the interview, if out of work, or was currently searching for a job, if employed. X is a vector of exogenous explanatory variables including a constant, β is a vector of coefficients, and v is a normally distributed disturbance with mean zero and variance σ_{vv}.

The Random Effects Probit model adds an individual random effect to the equation above, and takes into account the multi-period nature of the data. For a given individual i ($i = 1, \ldots, N$) and time period t ($t = 1, \ldots, T$) the model can be written as follows:

$$S_{it} = \alpha + \beta' X_{it} + u_i + v_{it}, \tag{5}$$

where u_i is the random individual specific effect, which is normally distributed with mean zero and variance σ_{uu}. The remaining error term, v_{it}, representing unobserved individual characteristics that vary with time, is also assumed normal with mean zero and variance σ_{vv}. I will take u_i, and v_{it} to be independent of each other and of the X_{it} explanatory variables. I integrate out the unobservable component using Gauss-Hermite quadrature with 12 nodes. Increases in the number of nodes had basically no effect on the estimates shown below. The maximum number of time periods we observe in the data is five.

Table 2 presents estimates, standard errors, and marginal effects, of the decision to search for a job by the full sample of employed and non-employed individuals. Being married has a fairly large negative and significant effect, we will later see that this is driven mainly by the effect of marriage on women's decisions. Also, males are more likely to search for jobs. Individuals with a college degree, compared with individuals with a lower (or higher) educational level are also more likely to search. Whites, other things equal, are less likely to search for jobs, and age has the expected negative effect, which is consistent with the notion that

as individuals have less years of active work ahead of them they are less likely to want to incur job search costs.[7]

Net worth has a negative and significant effect on the probability of searching for a job, something consistent across specifications, and also consistent with a theoretical framework where higher individual wealth allows a person to maintain a higher consumption level and reduces the incentives for job search. The latter argument is similar to the result in a search model like that of Sargent (1987), where higher non-human wealth translates into a higher reservation wage, or a more detailed model like that of Lentz and Tranaes (2000).

Table 2 also shows that past attachment to the labor force represented by the `Workpre` variable, which reflects the proportion of months worked out of the last 12, has a positive and significant effect, with a large marginal effect. However, currently being an employee has, other things equal, a negative, and fairly high, marginal effect on the probability of searching for a job, and so does being self-employed. As we will see in Tables 3 and 4, the positive effect of the attachment to the labor force variable is driven by non-employed respondents, which seems to indicate that those out of work for longer periods are less likely to search for (and probably eventually find) a job. This is not too surprising if we believe that some individuals might have withdrawn from the labor force and others might be discouraged to search because of the deterioration of their human capital. This means that once we control for variables like health, age, insurance status, etc., non-employed respondents are more likely to search than employed ones. The effects of the `Workpre` variable are conditional on the total number of hours the individual worked in the year prior to the interview. The independent effect of the total number of hours worked is smaller but still positive like the attachment indicator, and significant. I conclude from this that each of these indicators captures an aspect of the recent history of labor force participation of individuals, with `Workpre` as an indicator of work extensity, and `Thwkd` as an indicator of work intensity.

Not having access to health insurance has a large positive and significant marginal effect on the prob-

ability of searching for a job among this sample of individuals, a result consistent with the large literature that emphasizes the importance of health insurance among older people (Currie and Madrian 1999). Having private health insurance also has a positive and significant effect but not as large. Another relevant variable that I introduce in the tradition of Stigler (1962) and McCall (1970) is a proxy for the expected period of employment, the self-reported probability of living to age 85. We would expect it to be positively correlated with the likelihood of searching for a job and, the results confirm that conjecture. However, the results are only marginally significant, probably suggesting that the age indicators capture most of this effect.

A dummy variable indicating whether the individual has a health limitation for work has a negative effect on the decision to search for a job. Interestingly it will be shown below that the sign, and especially the lack of significance, is driven by the effect of this variable on the decision of non-employed respondents, and the pooling of individuals obscures the positive effect that this variable has on the search decision of employed individuals, as will be clear from Table 3. A binary indicator for self-reported psychological problems has a very large positive effect on the probability of searching for a job, which might reflect that some of these problems are likely to be work related (e.g. stress, bad working environment), or related to being out of the labor force (e.g depression, anxiety regarding financial security). Self-reported indicators of general health show that those in worse health are substantially less likely to search for new jobs, this result being especially strong for non-employed individuals. Finally, indicators of the last two interview periods, 1998 and 2000, have a positive (but not very significant) effect on the probability of searching for a job, something expected given the excellent labor market conditions of the late 1990s, and the substantial increase in labor force participation among individuals 55 to 64 (and also for individuals 65 and over) in the same period, as discussed in Benítez-Silva and Heiland (2000) and Burtless and Quinn (2000, 2002).

Table 3 presents the same type of estimation results but only for employed individuals. There are some interesting differences with the previous table; first, the health limitation indicator has now a *positive* effect on the probability of searching for a job, indicating that employed individuals that have a limitation

to perform their work are more likely to search for another job that might accommodate better their partial disability.[8] This is also true for individuals with a psychological problem, but reverses for the self-reported indicators of general health, which have a negative effect as individuals report being in fair or poor health. However, the latter indicators are not significant for this sample. The differential effect of the health limitation indicator and the self-reported health indicators comes to support the argument (Dwyer and Mitchell 1999) that health limitation indicators, such as `hlimwk`, measure functional limitation for work which is different from overall health, which is what the self-reported measures capture.

Another important result is the negative and significant effect of the labor force attachment variable on the probability of searching for a job, a result that might seem counterintuitive but that can be explained by the fact that those that have worked more continuously in the last year are more likely to have a stronger attachment to their current job and have had less time to explore other options outside their current job. It is also worth noticing the positive and significant effects that indicators for hourly workers and multiple job holders have on the job search decision, both these results are reasonable, since both types of individuals are more likely to search for better jobs that will deliver more job stability or better pay, or that might allow them to avoid having to hold multiple jobs. Black (1981) using the 1972 cross-section of the PSID also finds that multiple job holders are more likely to search for jobs.

Table 4 shows the estimates of the search decision for non-employed individuals. The first clear difference with Table 3 is the *positive*, and very large, effect of the work attachment variable, `Workpre`, which indicates that those that worked more, prior to their non-employment spell, are much more likely to search for new jobs. The effect of the hours of work variable, `Thwkd`, is also positive and significant, indicating that more work intensity in the previous year also proxies for a stronger work attachment, and results in a higher likelihood to search for a job. These work attachment variables can be interpreted, in the context of Whipple's (1973) theoretical framework, as proxies for how much skills have depreciated while out of work. Individuals that worked more in the previous year will have seen a lower depreciation of skills and therefore

their search is likely to be more successful and provide better outcomes. These results are also consistent with an empirical model that distinguishes two different labor force states among this sub-sample, those unemployed and those out of the labor force. In this dimension my results are consistent with the work of Flinn and Heckman (1983) when considered along with the results already mentioned of Benítez-Silva and Heiland (2000) regarding the higher probability that searchers have of becoming employed.

The second clear difference is the *negative* effect that having a health limitation for work has on the probability of searching for a job, meaning that those with some kind of disability are less likely to try to come back to the labor force. In this case this negative effect is in line with the effects of self-reported measures of health. Interestingly, having psychological problems still has a positive effect on the likelihood of searching for a job, maybe linked to the fact that those problems (possibly some type of anxiety or depression) could be the result of the stresses of being out of work when work is needed to maintain a family or a given standard of living. Finally, notice the much better explanatory power of this model compared with the model for on-the-job search.

Tables 5 and 6 separately estimate the on-the-job search decision for males and females. One very interesting result is the asymmetric effect of marriage for these two populations. For males, marriage has a small, positive, but insignificant effect on the decision to search for a new job, but for females, it has a large, negative, and significant effect on the decision to search for new jobs. This result might be a hint of a behavioral difference between males and females regarding their approach to on-the-job search, with females being more 'loyal' to their employers, maybe due to a better job match or due to different attitudes towards work. Parsons (1991) finds the same asymmetry in his study of young adults from the NLSY in the early 1980s. Another evidence of gender asymmetries is the effect of income (mostly earnings from work in the previous year), which again is positive but insignificant for males but negative and significant for women. This negative effect is consistent with the theoretical characterizations of Gronau (1971) which justifies it with the intuitive argument that current earnings are a proxy for the cost of search in the same way

that they are a proxy for the cost of leisure. Stigler (1962) argues that employment agencies might charge proportionally higher fees the higher the earnings of the job searcher. It is also possible that higher earnings are, for women, an additional proxy for attachment to a given job or the labor market, complementing the negative effect that the work attachments variables have on the probability of searching for a job.

We can also observe that the work attachment indicator has an equally large and significant marginal effect for both genders, but the positive marginal effect of having a work limitation is only significant (and large) for males, and the same is true about the positive effect of the second job indicator. It is clear from these results that the separate analysis provides an interesting picture of the different on-the-job search behavior of the two genders.

Finally, Tables 7 and 8, show the Probit and Random Effects Probit Maximum Likelihood estimates for non-employed males and females. Again, we can observe the asymmetric effect of marriage among these two populations, from being an insignificant regressor for males, to having a fairly large negative effect for females. We can also observe the larger marginal effect among females of the work attachment indicator, and the larger marginal effect for males of the health limitation indicator. Notice also the different effect of the indicator of psychological problems between these two populations, for males it has an insignificant and small effect on the probability of searching for a job, but for females it is also positive, but fairly large and statistically significant.

5 Conclusions

This paper has shown the importance of analyzing the job search behavior of older Americans. Using the HRS and cross-section and panel data models I have characterized the decision to search for a job by employed and non-employed individuals, emphasizing the importance of age, wealth, work attachment, health insurance, and health indicators. Special attention is paid to the sources of the differences between

employed and non-employed older Americans and also between males and females in both groups. The empirical results are broadly consistent with the theoretical framework that builds upon the seminal work of Seater (1977), who constructed a unified model of consumption, labor supply, and search behavior. In the theoretical discussion I emphasize the importance of a number of variables, including wages, in the decision of older individuals to search for a job.

Interestingly, this analysis of job search behavior at the end of the life cycle, represents one of the few and more recent efforts I am aware of to characterize job search as an important issue to consider for older individuals. Previously most of the research in the Economics of Aging has not paid much attention to search behavior. However, increased life expectancy, improved health conditional on age, and new technological opportunities allow individuals to consider second careers and to search for more flexible jobs.

There are a number of extensions of this study worth considering as avenues of future research. Firstly, job search can be extended to have more than two states, allowing us to discuss not only the fact that an individual searches for a job but also the intensity of that search, with probably different effects in terms of wage rewards and lower disutility of labor. Secondly, a separate analysis of job search strategies by older Americans can provide useful policy insights regarding labor force participation in a labor market environment that will consistently contain a higher proportion of older workers.

Thirdly, the theoretical framework presented here can be used to analyze human capital formation among older Americans. The links of the theoretical model with the work of Ben-Porath (1967) and Heckman (1976a, 1976b) were already emphasized by Seater (1977). In the same way that older workers are responsive both to the cost of job search and the rewards resulting from that investment of time and tangible resources, they are also likely to be responsive to the cost and rewards of human capital investment. Therefore, a framework of analysis can be developed to assess public policies that can affect the costs of human capital investment later in life, or the rewards from it. For example, policies that facilitate adult education to allow older individuals to keep up with technological change will make it easier for older workers to be

more active in the labor market and eventually work longer. This is especially true in an economy that might need those workers to ease a labor shortage that, if not covered by immigration, could ignite inflationary pressures. This increased labor force participation could also ease the pressures on a struggling social insurance system.[9] McCall (1970) discusses the trade-offs between policies that facilitate job search through lowering information costs, and policies that promote training in the context of reducing the proportion of discouraged workers. Whipple (1973) introduces the concept of Skill Maintenance Clinics as a way of avoiding the depreciation of skills that can negatively affect the employability of individuals and the efficacy of job search. Mortersen (1970) discusses the possibility of using retraining programs to reduce the duration of search, which can result in lower unemployment among a given population. The study of these substitutabilities and complementarities between search and training among older workers is likely to become an important policy research issue.

Finally, it is realistic to think that the framework presented can be a stepping stone in the process of estimating the underlying parameters of a unified model of consumption, savings, labor supply and job search of older Americans.

Figure 1: **Search in the Health and Retirement Survey**

Figure 2: **Search By Non-Employed Respondents**

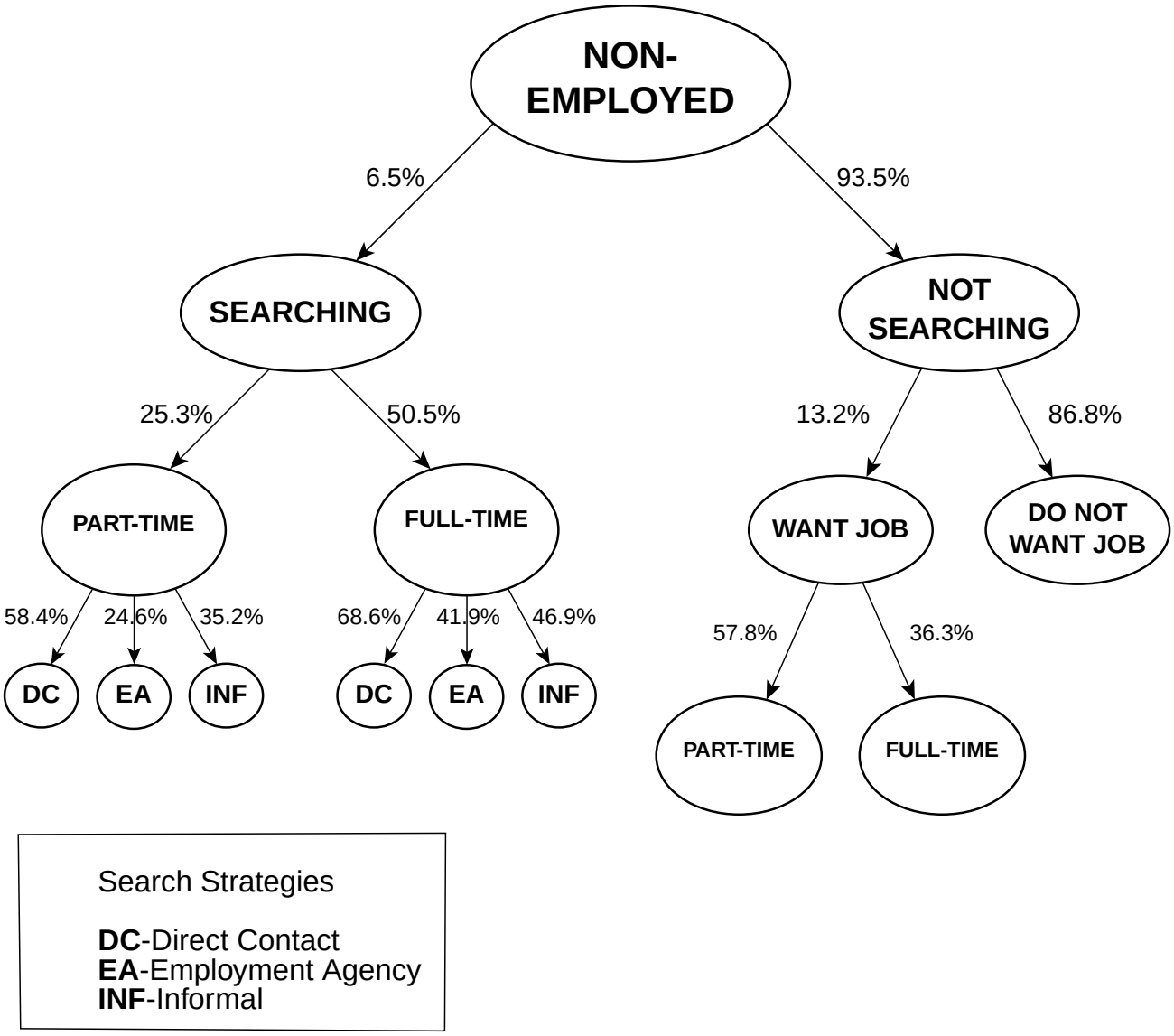

Figure 3: **Search By Employed Respondents**

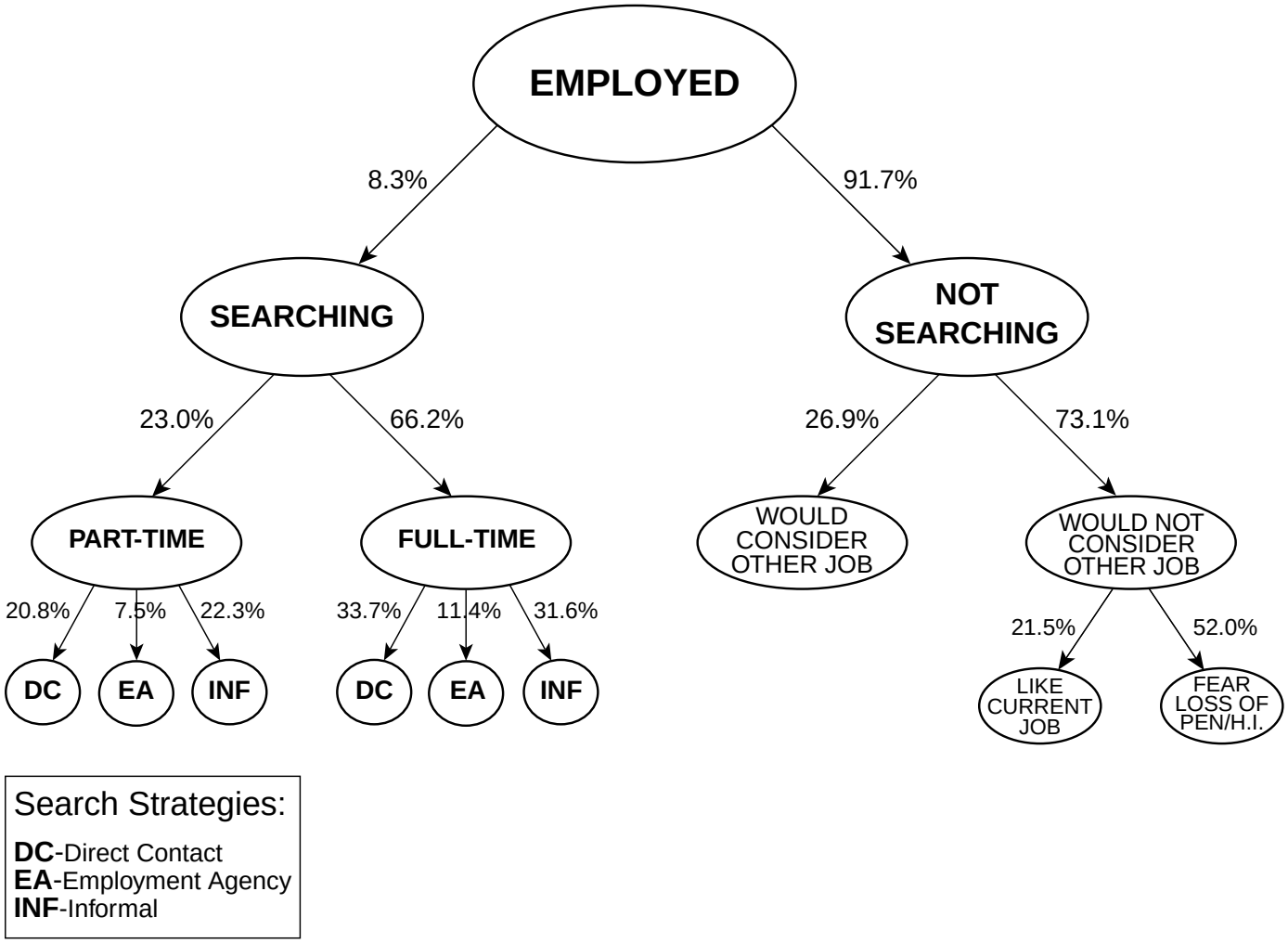

Table 1. Panel A: Means and Standard Deviations

Variable	Full Sample	Searchers Sub-Sample	Employed Searchers	Non-Employed Searchers
N	49,037	3,255	2,182	1,073
Age	59.79	57.16	56.65	58.19
	5.26	4.28	4.01	4.64
White	.7304	.6829	.7172	.6132
	.4437	.4653	.4504	.4872
Male	.4674	.5231	.5307	.5079
	.4989	.4995	.4991	.5001
Married	.7699	.7130	.7213	.6961
	.4208	.4524	.4484	.4601
Bachelor Degree	.2084	.2543	.2956	.1705
	.4061	.4355	.4564	.3762
Professional D.	.0754	.0838	.1044	.0419
	.2640	.2772	.3059	.2005
Net worth	237.297	150.658	157.385	136.220
(in $1,000 of 1992)	535.607	310.179	322.770	280.874
Housing wealth	73.306	57.604	59.140	54.471
(in $1,000)	118.671	82.113	78.980	88.113
Family Inc.	50.004	53.835	58.098	44.715
(in $1,000)	162.621	274.005	303.445	196.595
Resp. Inc.	19.324	24.556	27.032	19.272
(in $1,000)	52.567	127.096	86.859	185.771
Total Hours Worked	1132.64	1449.17	1667.33	980.484
(Thwkd)	1088.12	1017.86	944.91	1011.32
% Months Worked	.5960	.7286	.9052	.3763
(Workpre)	.4533	.3796	.2199	.3858
Searchj	.0663	1	1	1
	.2489	0	0	0
Employee	.4483	.5631	.8400	0
	.4973	.4960	.3666	0
Self-employed	.1102	.1072	.1599	0
	.3131	.3094	.3666	0
Non-employed	.4414	.3296	0	1
	.4965	.4701	0	0
No Health Ins.	.0925	.2211	.1784	.3077
	.2898	.4150	.3829	.4617
Gov. Health Ins.	.2968	.1214	.0751	.2162
	.4568	.3266	.2637	.4119
Employer Health Ins.	.5141	.5213	.6361	.2346
	.4998	.4996	.4812	.4241
Private Health Ins.	.2177	.1634	.1744	.1411
	.4127	.3698	.3796	.3483

Table 1. Panel B: Means and Standard Deviations

Variable	Full Sample	Searchers Sub-Sample	Employed Searchers	Non-Employed Searchers
N	49,037	3,255	2,182	1,073
Health limitation	.3295	.2614	.2218	.3420
	.4700	.4394	.4155	.4746
Hlimwk	.2589	.1840	.1333	.2870
	.4380	.3875	.3400	.452
Hlimpw	.1438	.0218	.0013	.0633
	.3509	.1460	.0371	.2437
Diabetes	.1148	.0807	.0737	.0950
	.3188	.2725	.2614	.2934
High blood press.	.3629	.3155	.3056	.3355
	.4808	.4647	.4608	.4723
Heart problems	.0568	.0402	.0362	.0484
	.2315	.1965	.1868	.2148
Stroke	.0184	.0055	.0036	.0093
	.1345	.0741	.0604	.0961
Cancer	.0406	.0251	.0219	.0316
	.1973	.1567	.1467	.1752
Diff. Walk. Mb.	.1932	.1263	.1081	.1635
	.3948	.3322	.3106	.3700
Prob. Living to 85	.4701	.4753	.4681	.4911
	.3149	.3234	.3198	.3307
Cognitive test	6.20	6.35	6.60	5.83
	2.96	2.95	2.91	2.99
Psych. problems	.1133	.1324	.1264	.1444
	.3169	.3389	.3324	.3517
Excellent Health	.1697	.1975	.2131	.1658
	.3754	.3982	.4095	.3721
Very Good Health	.2940	.2964	.3240	.2404
	.4555	.4567	.4681	.4275
Good Health	.2940	.3238	.3157	.3402
	.4556	.4680	.4649	.4739
Fair Health	.1625	.1471	.1255	.1910
	.3689	.3543	.3314	.3933
Poor Health	.0796	.0350	.0215	.0624
	.2706	.1838	.1452	.2421
Smoker	.2208	.2829	.2699	.3094
	.4148	.4505	.4440	.4625
Drinker	.5316	.6129	.6301	.5778
	.4990	.4872	.4828	.4941

Table 2: Estimates of the Search Decision for the Full Sample

No.	Variable	Probit			Random Effects Probit		
		Estimate	St.Error	Marg.Eff.	Estimate	St.Error	Marg.Eff.
1	Constant	-1.3160	0.0603	—	-1.6454	0.0778	—
2	White	-0.0986	0.0328	-0.0118	-0.1548	0.0420	-0.0075
3	Male	0.2137	0.0293	0.0247	0.2801	0.0387	0.0128
4	Married	-0.1362	0.0330	-0.0166	-0.1863	0.0423	-0.0093
5	Bachelor Degree	0.2147	0.0377	0.0269	0.2813	0.0498	0.0147
6	Prof. D.	-0.0745	0.0584	-0.0081	-0.1276	0.0742	-0.0051
7	Age 55-57	-0.1359	0.0317	-0.0146	-0.1752	0.0406	-0.0070
8	Age 58-59	-0.1986	0.0369	-0.0204	-0.2514	0.0471	-0.0094
9	Age 60-61	-0.3205	0.0400	-0.0307	-0.4179	0.0519	-0.0139
10	Age 62	-0.5477	0.0600	-0.0429	-0.7431	0.0786	-0.0177
11	Age 63-64	-0.7175	0.0577	-0.0525	-0.9261	0.0750	-0.0208
12	Age 65+	-0.7554	0.0625	-0.0551	-1.0213	0.0819	-0.0225
13	Income ($1,000)	0.0002	0.0004	0.0000	0.0005	0.0003	0.0000
14	Net worth ($10^5)	-0.0301	0.0064	-0.0034	-0.0366	0.0058	-0.0016
15	Thwkd (100)	0.0052	0.0019	0.0006	0.0056	0.0022	0.0003
16	Workpre	0.4455	0.0688	0.0509	0.5473	0.0762	0.0243
17	Employee	-0.4420	0.0563	-0.0520	-0.6133	0.0587	-0.0296
18	Self-employed	-0.5187	0.0679	-0.0431	-0.7003	0.0759	-0.0184
19	No Health Ins.	0.5406	0.0393	0.0869	0.6377	0.0496	0.0497
20	Priv. Health Ins.	0.0729	0.0320	0.0086	0.0941	0.0407	0.0044
21	Prob. Liv. 85	0.0785	0.0419	0.0090	0.1043	0.0525	0.0046
22	Diabetes	-0.0789	0.0493	-0.0086	-0.1270	0.0617	-0.0051
23	Diff. Walk-MB.	-0.0694	0.0451	-0.0076	-0.1207	0.0543	-0.0049
24	Psych. Prob.	0.2788	0.0428	0.0380	0.3412	0.0523	0.0204
25	Hlimwk	-0.0243	0.0405	-0.0027	-0.0545	0.0488	-0.0023
26	Fair Health	-0.0860	0.0408	-0.0093	-0.1035	0.0511	-0.0042
27	Poor Health	-0.4101	0.0796	-0.0349	-0.5346	0.0975	-0.0147
28	Fourth Wave	0.0099	0.0327	0.0011	0.0038	0.0423	0.0002
29	Fifth Wave	0.0910	0.0434	0.0110	0.0710	0.0553	0.0033
	Log L/Obs./Avg. Prob.	-7123.76	30,059	0.0568	-6824.89	30,059	0.0180
	Pseudo-R^2			0.0765			0.0668

Table 3: Estimates of the Search Decision for Employed Individuals

No.	Variable	Probit			Random Effects Probit		
		Estimate	St.Error	Marg.Eff.	Estimate	St.Error	Marg.Eff.
1	Constant	-0.7606	0.1088	—	-1.1183	0.1462	—
2	White	-0.0567	0.0393	-0.0074	-0.0935	0.0511	-0.0051
3	Male	0.1966	0.0350	0.0252	0.2510	0.0464	0.0131
4	Married	-0.1246	0.0383	-0.0168	-0.1729	0.0504	-0.0099
5	Bachelor Degree	0.2285	0.0433	0.0316	0.3109	0.0583	0.0187
6	Prof. D.	-0.0028	0.0629	-0.0004	-0.0140	0.0821	-0.0007
7	Age 55-57	-0.1261	0.0362	-0.0153	-0.1655	0.0465	-0.0078
8	Age 58-59	-0.2346	0.0422	-0.0267	-0.2956	0.0553	-0.0126
9	Age 60-61	-0.3308	0.0474	-0.0355	-0.4311	0.0619	-0.0167
10	Age 62	-0.5169	0.0752	-0.0464	-0.7021	0.0994	-0.0200
11	Age 63-64	-0.6604	0.0750	-0.0550	-0.8970	0.0984	-0.0230
12	Age 65+	-0.6579	0.0802	-0.0544	-0.8713	0.1083	-0.0224
13	Income ($1,000)	0.0000	0.0005	0.0000	0.0002	0.0004	0.0000
14	Net worth (10^5)	-0.0239	0.0067	-0.0030	-0.0293	0.0065	-0.0015
15	Thwkd (100)	-0.0004	0.0020	-0.0001	-0.0024	0.0025	-0.0001
16	Workpre	-0.6400	0.0923	-0.0817	-0.6809	0.1236	-0.0351
17	Self-employed	-0.0676	0.0504	-0.0083	-0.0976	0.0648	-0.0047
18	Hourly Worker	0.0711	0.0368	0.0091	0.1055	0.0466	0.0055
19	Second Job	0.2072	0.0428	0.0298	0.2112	0.0549	0.0129
20	No Health Ins.	0.4270	0.0493	0.0709	0.4997	0.0635	0.0396
21	Priv. Health Ins.	0.0776	0.0375	0.0103	0.0951	0.0486	0.0052
22	Prob. Liv. 85	0.0754	0.0499	0.0096	0.0789	0.0635	0.0041
23	Diabetes	-0.0602	0.0626	-0.0074	-0.1098	0.0814	-0.0051
24	Diff. Walk-MB.	0.0650	0.0552	0.0086	0.0712	0.0689	0.0039
25	Psych. Prob.	0.3395	0.0533	0.0536	0.4133	0.0649	0.0305
26	Hlimwk	0.1281	0.0477	0.0177	0.1639	0.0628	0.0097
27	Fair Health	-0.0410	0.0498	-0.0051	-0.0293	0.0642	-0.0015
28	Poor Health	-0.1451	0.1208	-0.0166	-0.1830	0.1545	-0.0079
29	Fourth Wave	0.0477	0.0384	0.0062	0.0457	0.0505	0.0024
30	Fifth Wave	-0.0047	0.0455	-0.0006	-0.0279	0.0600	-0.0014
	Log L/Obs./Avg. Prob.	-5160.61	20,292	0.0655	-4930.64	20,292	0.0215
	Pseudo-R^2			0.0554			0.0449

Table 4: Estimates of the Search Decision for Non-Employed Individuals

No.	Variable	Probit			Random Effects Probit		
		Estimate	St.Error	Marg.Eff.	Estimate	St.Error	Marg.Eff.
1	Constant	-1.0711	0.0968	—	-1.3639	0.1386	—
2	White	-0.2244	0.0546	-0.0166	-0.2906	0.0724	-0.0069
3	Male	0.2604	0.0519	0.0179	0.3395	0.0695	0.0072
4	Married	-0.1896	0.0593	-0.0139	-0.2591	0.0761	-0.0062
5	Bachelor Degree	0.1661	0.0708	0.0121	0.2189	0.0957	0.0051
6	Prof. D.	-0.3354	0.1214	-0.0166	-0.4236	0.1600	-0.0053
7	Age 55-57	-0.2307	0.0693	-0.0130	-0.2871	0.0921	-0.0044
8	Age 58-59	-0.1996	0.0746	-0.0114	-0.2799	0.0983	-0.0043
9	Age 60-61	-0.3959	0.0755	-0.0202	-0.5153	0.1016	-0.0068
10	Age 62	-0.8223	0.1098	-0.0296	-1.0692	0.1427	-0.0086
11	Age 63-64	-0.8905	0.0966	-0.0347	-1.1588	0.1311	-0.0108
12	Age 65+	-0.9204	0.0983	-0.0398	-1.2184	0.1363	-0.0136
13	Income ($1,000)	0.0025	0.0019	0.0002	0.0035	0.0024	0.0001
14	Net worth (10^5)	-0.0450	0.0163	-0.0030	-0.0567	0.0120	-0.0011
15	Thwkd (100)	0.0253	0.0046	0.0017	0.0319	0.0061	0.0006
16	Workpre	0.6231	0.1056	0.0409	0.7232	0.1399	0.0140
17	No Health Ins.	0.5675	0.0616	0.0577	0.7232	0.0879	0.0300
18	Priv. Health Ins.	-0.0050	0.0627	-0.0003	0.0031	0.0786	0.0001
19	Prob. Liv. 85	0.0820	0.0753	0.0054	0.1143	0.0958	0.0022
20	Diabetes	-0.1760	0.0851	-0.0102	-0.2307	0.1086	-0.0036
21	Diff. Walk-MB.	-0.1910	0.0713	-0.0115	-0.2626	0.0893	-0.0044
22	Psych. Prob.	0.1390	0.0712	0.0101	0.1854	0.0919	0.0043
23	Hlimwk	-0.1700	0.0658	-0.0109	-0.2142	0.0786	-0.0040
24	Fair Health	-0.1368	0.0734	-0.0083	-0.1915	0.0882	-0.0032
25	Poor Health	-0.4883	0.1099	-0.0227	-0.6578	0.1397	-0.0074
26	Fourth Wave	-0.3608	0.0764	-0.0192	-0.4238	0.0967	-0.0061
27	Fifth Wave	0.0931	0.0743	0.0065	0.1095	0.0934	0.0023
	Log L/Obs./Avg. Prob.	-1888.48	10,974	0.0287	-1864.54	10,974	0.0070
	Pseudo-R^2			0.2303			0.2121

Table 5: Estimates of the Search Decision for Employed Males

No.	Variable	Probit			Random Effects Probit		
		Estimate	St.Error	Marg.Eff.	Estimate	St.Error	Marg.Eff.
1	Constant	-0.7265	0.1640	—	-1.1733	0.2272	—
2	White	-0.0335	0.0575	-0.0046	-0.0714	0.0781	-0.0038
3	Married	0.0401	0.0637	0.0053	0.0424	0.0860	0.0021
4	Bachelor Degree	0.2017	0.0599	0.0289	0.2973	0.0838	0.0171
5	Prof. D.	0.0095	0.0845	0.0013	-0.0362	0.1123	-0.0018
6	Age 55-57	-0.1023	0.0527	-0.0133	-0.1428	0.0697	-0.0067
7	Age 58-59	-0.1769	0.0597	-0.0220	-0.2551	0.0805	-0.0111
8	Age 60-61	-0.2627	0.0659	-0.0312	-0.3855	0.0888	-0.0153
9	Age 62	-0.4948	0.0997	-0.0483	-0.7075	0.1366	-0.0200
10	Age 63-64	-0.5824	0.0980	-0.0551	-0.8256	0.1306	-0.0224
11	Age 65+	-0.6420	0.1015	-0.0589	-0.8886	0.1425	-0.0234
12	Income ($1,000)	0.0002	0.0004	0.0000	0.0004	0.0004	0.0000
13	Net worth ($10^5)	-0.0207	0.0081	-0.0028	-0.0262	0.0079	-0.0013
14	Thwkd (100)	-0.0001	0.0026	0.0000	-0.0018	0.0034	-0.0001
15	Workpre	-0.6704	0.1349	-0.0906	-0.6646	0.1858	-0.0338
16	Self Employed	-0.0810	0.0648	-0.0106	-0.1306	0.0860	-0.0062
17	Hourly Worker	0.0506	0.0531	0.0069	0.0849	0.0690	0.0044
18	Second Job	0.2692	0.0565	0.0421	0.2835	0.0741	0.0180
19	No Health Ins.	0.3956	0.0722	0.0679	0.4833	0.0956	0.0374
20	Priv. Health Ins.	0.0297	0.0526	0.0041	0.0471	0.0709	0.0025
21	Prob. Liv. 85	0.0348	0.0733	0.0047	0.0445	0.0912	0.0023
22	Diabetes	-0.0235	0.0824	-0.0031	-0.0736	0.1087	-0.0035
23	Diff. Walk-MB.	0.1509	0.0815	0.0224	0.1668	0.1072	0.0098
24	Psych. Prob.	0.4203	0.0848	0.0740	0.5208	0.1036	0.0425
25	Hlimwk	0.1361	0.0657	0.0199	0.2249	0.0883	0.0138
26	Fair Health	-0.0615	0.0672	-0.0080	-0.0656	0.0933	-0.0032
27	Poor Health	-0.0958	0.1559	-0.0121	-0.1858	0.2063	-0.0079
28	Fourth Wave	0.0776	0.0546	0.0109	0.0987	0.0752	0.0054
29	Fifth Wave	-0.0216	0.0685	-0.0029	-0.0450	0.0916	-0.0022
	Log L/Obs./Avg. Prob.	-2684.73	10,063	0.0706	-2541.46	10,063	0.0212
	Pseudo-R^2			0.0528			0.0437

Table 6: Estimates of the Search Decision for Employed Females

No.	Variable	Probit			Random Effects Probit		
		Estimate	St.Error	Marg.Eff.	Estimate	St.Error	Marg.Eff.
1	Constant	-0.6107	0.1485	—	-0.8478	0.1919	—
2	White	-0.0736	0.0542	-0.0089	-0.1085	0.0675	-0.0059
3	Married	-0.2415	0.0518	-0.0304	-0.3148	0.0638	-0.0184
4	Bachelor Degree	0.2883	0.0632	0.0380	0.3687	0.0826	0.0232
5	Prof. D.	0.0214	0.0937	0.0025	0.0678	0.1231	0.0037
6	Age 55-57	-0.1559	0.0505	-0.0171	-0.1926	0.0627	-0.0089
7	Age 58-59	-0.3234	0.0619	-0.0319	-0.3758	0.0777	-0.0151
8	Age 60-61	-0.4445	0.0710	-0.0406	-0.5335	0.0893	-0.0190
9	Age 62	-0.5648	0.1170	-0.0439	-0.7298	0.1486	-0.0198
10	Age 63-64	-0.8283	0.1244	-0.0549	-1.0761	0.1590	-0.0235
11	Age 65+	-0.7031	0.1385	-0.0493	-0.8978	0.1778	-0.0212
12	Income ($1,000)	-0.0061	0.0020	-0.0007	-0.0078	0.0022	-0.0004
13	Net worth ($10^5)	-0.0308	0.0097	-0.0036	-0.0367	0.0120	-0.0019
14	Thwkd (100)	0.0018	0.0031	0.0002	-0.0004	0.0040	0.0000
15	Workpre	-0.5855	0.1284	-0.0683	-0.6327	0.1662	-0.0322
16	Self Employed	-0.0463	0.0837	-0.0053	-0.0605	0.1007	-0.0029
17	Hourly Worker	0.0617	0.0522	0.0072	0.0925	0.0643	0.0047
18	Second Job	0.1118	0.0660	0.0140	0.1071	0.0829	0.0060
19	No Health Ins.	0.4200	0.0688	0.0641	0.4728	0.0857	0.0362
20	Priv. Health Ins.	0.1263	0.0535	0.0157	0.1476	0.0669	0.0083
21	Prob. Liv. 85	0.1292	0.0675	0.0151	0.1282	0.0888	0.0065
22	Diabetes	-0.1257	0.0974	-0.0134	-0.1742	0.1239	-0.0076
23	Diff. Walk-MB.	-0.0004	0.0758	0.0000	0.0049	0.0897	0.0003
24	Psych. Prob.	0.2896	0.0696	0.0406	0.3489	0.0826	0.0238
25	Hlimwk	0.1085	0.0695	0.0135	0.0919	0.0898	0.0051
26	Fair Health	-0.0385	0.0732	-0.0044	-0.0170	0.0888	-0.0009
27	Poor Health	-0.2460	0.1935	-0.0237	-0.2417	0.2405	-0.0097
28	Fourth Wave	0.0451	0.0549	0.0054	0.0364	0.0689	0.0019
29	Fifth Wave	0.0377	0.0619	0.0045	0.0306	0.0802	0.0016
	Log L/Obs./Avg. Prob.	-2447.50	10,229	0.0584	-2364.90	10,229	0.0212
	Pseudo-R^2			0.0677			0.0547

Table 7: Estimates of the Search Decision for Non-Employed Males

No.	Variable	Probit			Random Effects Probit		
		Estimate	St.Error	Marg.Eff.	Estimate	St.Error	Marg.Eff.
1	Constant	-0.6934	0.1607	—	-0.8008	0.1969	—
2	White	-0.2660	0.0797	-0.0189	-0.3146	0.1004	-0.0106
3	Married	0.0880	0.0973	0.0051	0.0865	0.1157	0.0022
4	Bachelor Degree	0.3448	0.0988	0.0260	0.4114	0.1264	0.0152
5	Prof. D.	-0.3633	0.1647	-0.0167	-0.4069	0.1956	-0.0076
6	Age 55-57	-0.3246	0.1240	-0.0157	-0.3762	0.1510	-0.0074
7	Age 58-59	-0.1783	0.1262	-0.0097	-0.2486	0.1538	-0.0055
8	Age 60-61	-0.4342	0.1248	-0.0200	-0.5338	0.1595	-0.0097
9	Age 62	-0.9286	0.1598	-0.0294	-1.1331	0.2000	-0.0129
10	Age 63-64	-1.0504	0.1470	-0.0374	-1.2867	0.1925	-0.0178
11	Age 65+	-1.2130	0.1525	-0.0585	-1.4723	0.1979	-0.0322
12	Income ($1,000)	0.0049	0.0022	0.0003	0.0058	0.0028	0.0002
13	Net worth (10^5)	-0.1000	0.0209	-0.0062	-0.1167	0.0239	-0.0032
14	Thwkd (100)	0.0162	0.0064	0.0010	0.0195	0.0081	0.0005
15	Workpre	0.4328	0.1573	0.0267	0.4609	0.1982	0.0126
16	No Health Ins.	0.8392	0.0945	0.1009	1.0008	0.1327	0.0740
17	Priv. Health Ins.	0.0023	0.0980	0.0001	-0.0071	0.1141	-0.0002
18	Prob. Liv. 85	0.0506	0.1119	0.0031	0.0695	0.1352	0.0019
19	Diabetes	-0.2152	0.1218	-0.0115	-0.2360	0.1433	-0.0054
20	Diff. Walk-MB.	-0.2980	0.1177	-0.0162	-0.3720	0.1336	-0.0085
21	Psych. Prob.	0.0490	0.1259	0.0031	0.0630	0.1528	0.0018
22	Hlimwk	-0.2278	0.0994	-0.0138	-0.2551	0.1117	-0.0068
23	Fair Health	-0.2837	0.1123	-0.0150	-0.3719	0.1316	-0.0081
24	Poor Health	-0.5938	0.1601	-0.0245	-0.7507	0.1898	-0.0117
25	Fourth Wave	-0.4709	0.1317	-0.0213	-0.5294	0.1525	-0.0097
26	Fifth Wave	-0.0253	0.1187	-0.0015	-0.0368	0.1380	-0.0010
	Log L/Obs./Avg. Prob.	-814.83	4,548	0.0267	-808.89	4,548	0.0103
	Pseudo-R^2			0.2946			0.2768

Table 8: Estimates of the Search Decision for Non-Employed Females

No.	Variable	Probit			Random Effects Probit		
		Estimate	St.Error	Marg.Eff.	Estimate	St.Error	Marg.Eff.
1	Constant	-1.1299	0.1258	—	-1.5589	0.2041	—
2	White	-0.1817	0.0760	-0.0126	-0.2475	0.1050	-0.0037
3	Married	-0.2979	0.0781	-0.0223	-0.4126	0.1074	-0.0072
4	Bachelor Degree	0.0029	0.1013	0.0002	0.0224	0.1500	0.0003
5	Prof. D.	-0.3337	0.1996	-0.0158	-0.4962	0.2659	-0.0036
6	Age 55-57	-0.2093	0.0852	-0.0116	-0.2744	0.1209	-0.0028
7	Age 58-59	-0.2825	0.0966	-0.0148	-0.3852	0.1365	-0.0035
8	Age 60-61	-0.4402	0.0985	-0.0213	-0.5804	0.1397	-0.0047
9	Age 62	-0.7313	0.1526	-0.0267	-0.9882	0.2086	-0.0052
10	Age 63-64	-0.8315	0.1351	-0.0311	-1.1052	0.1876	-0.0063
11	Age 65+	-0.6839	0.1332	-0.0279	-0.9781	0.1972	-0.0060
12	Income ($1,000)	0.0028	0.0039	0.0002	0.0054	0.0051	0.0001
13	Net worth ($10^5)	-0.0247	0.0154	-0.0016	-0.0329	0.0142	-0.0004
14	Thwkd (100)	0.0305	0.0069	0.0019	0.0397	0.0095	0.0005
15	Workpre	0.7304	0.1433	0.0462	0.9136	0.2021	0.0114
16	No Health Ins.	0.3890	0.0845	0.0332	0.5146	0.1225	0.0114
17	Priv. Health Ins.	0.0002	0.0823	0.0000	0.0289	0.1099	0.0004
18	Prob. Liv. 85	0.1007	0.1035	0.0064	0.1561	0.1377	0.0020
19	Diabetes	-0.1466	0.1201	-0.0083	-0.2558	0.1663	-0.0025
20	Diff. Walk-MB.	-0.1383	0.0920	-0.0082	-0.2115	0.1234	-0.0023
21	Psych. Prob.	0.1485	0.0869	0.0104	0.2096	0.1201	0.0032
22	Hlimwk	-0.1562	0.0907	-0.0096	-0.2194	0.1119	-0.0026
23	Fair Health	-0.0472	0.0969	-0.0029	-0.0409	0.1233	-0.0005
24	Poor Health	-0.4485	0.1537	-0.0204	-0.5856	0.2057	-0.0043
25	Fourth Wave	-0.3085	0.0958	-0.0165	-0.3839	0.1291	-0.0037
26	Fifth Wave	0.1308	0.0981	0.0090	0.1629	0.1312	0.0024
	Log L/Obs./Avg. Prob.	-1030.45	6,426	0.0275	-1013.33	6,426	0.0042
	Pseudo-R^2			0.2009			0.1834

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Notes

[1]My focus is on individual behavior, this is a partial equilibrium perspective and a starting point in the analysis of job search of older Americans.

[2]Lippman and McCall (1976) provide an excellent literature review of the early contributions to the economics of job search. More recent discussion of the theory of job search with a macroeconomic emphasis can be found in Sargent (1987), Ljungqvist and Sargent (2000), and Wright (2000). Bhattacharya, Mulligan, and Reed (2001) present a standard model of labor market search which analyzes the effects of retirement policies that foster early retirement on the employment of young individuals.

[3]Siven (1974) presents a similar model where individuals choose between search in the labor market to obtain higher wages, and search in the commodities market to obtain lower prices, also labor supply is fixed and individuals cannot save. More recently Benítez-Silva (2000) extended Seater's work to a discrete time setting, and to account for uncertainty and public pensions in the presence of discrete differential costs. As Seater (1977) argues, most other partial equilibrium search models can be understood as special cases of his unified theoretical framework.

[4]In the absence of these additional characteristics Seater (1977) presents the solution to the underlying model in continuous time, which Benítez-Silva (2000) extends to the stochastic discrete case. The work of French (2000), van der Klaauw and Wolpin (2002), and Rust, Buchinsky, and Benítez-Silva (2002) can be understood as solutions to a similar set up but ignoring the search decision and its implications for future wages and future employment decisions, but carefully modeling the retirement incentives from public social insurance programs.

[5]For more detailed information on the HRS see Juster and Suzman (1995), and Gustman, Mitchell, and Steinmeier (1995).

[6]There are a few individuals in the sample older than 75, but they were not searching for a job. Since the HRS was supposed to be representative of the U.S. population of individuals 51 to 61 as of the first round of interviews (in the field during 1992 and the beginning of 1993) we do not really lose much information by ignoring those respondents.

[7]The introduction of demographic variables is justified by the fact that I want to control for this type of characteristic to better assess the effect of the other variables of interest.

[8]See Benítez-Silva et al. (2003) for a discussion of the relationship between self-reported health limitation and disability status.

[9]See Friedberg (1999b) for a discussion of investment incentives in computer skills among older workers. See Burtless and Quinn (2000) for a discussion of policies to encourage labor force participation of older Americans.