Social security and the retirement and savings behavior of low-income households

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ABSTRACT

In this paper, we develop and estimate a model of retirement and savings incorporating limited borrowing, stochastic wage offers, health status and survival, social security benefits, Medicare and employer-provided health insurance coverage, and intentional bequests. The model is estimated on a sample of relatively poor households from the first three waves of the Health and Retirement Study (HRS), for whom we would expect social security income to be of particular importance. The estimated model is used to simulate the responses to changes in social security rules, including changes in benefit levels, in the payroll tax, in the social security earnings tax and in early and normal retirement ages. Welfare and budget consequences are estimated.

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Executive summary

With the oldest cohort of the baby-boom generation just beginning to reach retirement age, the impending wave of retirements during the next two decades is expected to place mounting budgetary pressures on the federal government. Consequently, the reform of Social Security and Medicare has become a central policy issue, with policy makers facing the difficult task of choosing from among a large set of alternative policy proposals. To help this debate, we develop and estimate a rich dynamic model of retirement and savings decisions for a low-income subsample of households from the Health and Retirement Study. This subset of households is expected to rely heavily on government benefits in retirement, and includes both unmarried individuals and married couples.

Our model of labor supply and consumption choices includes a detailed specification of social security rules, borrowing constraints, stochastic wage offers, uncertain health and survival, Medicare and employer-provided health insurance coverage, as well as a bequest motive. We use the estimates of our model to simulate the impact of several counterfactual experiments corresponding to changes in social security rules on household labor supply, income and consumption. These include reductions in benefit levels, the removal of the earnings test, elimination of early retirement, and postponement of the earliest retirement age to 70.

In all cases, the model predicts sharp increases in average annual hours of work and in full-time employment at ages 62–69, and smaller variable responses in hours before age 62. There is considerable heterogeneity in responses, with those of singles generally exceeding those of married individuals, and those of husbands being considerably larger than those of wives. The employment responses are accompanied by modest, but not inconsequential, changes in net assets holdings, indicating that both labor supply and savings decisions play important roles in mitigating these reforms' impacts on consumption and welfare. Our experiments illustrate the existence of potentially important trade-offs faced by policy makers in balancing consumer welfare losses against revenue increases.

1. Introduction

The literature on retirement behavior has grown rapidly during the last twenty years. Much of that growth has been due to recent methodological advances in the structural estimation of dynamic discrete choice models of behavior under uncertainty. Unlike earlier static lifetime models (e.g., Fields and Mitchell (1984)), dynamic models account for the sequential nature of the retirement process in which individuals adjust their behavior as events unfold. Structural estimation of the fundamental parameters of preferences and constraints as opposed to "reduced form" analyses permits the simulation of policy experiments that act directly on constraints and which may be outside of current or prior policy regimes.

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Much of the focus in the initial attempts to formulate and estimate a forward-looking model of retirement behavior has been on explaining the empirical regularities of a declining full-time employment rate with age (for males), with particularly large drops at ages 62 and 65, as well as the substantial heterogeneity in retirement behavior across individuals (see Gustman and Steinmeier (1986), Stock and Wise (1990), Berkovec and Stern (1991), Phelan and Rust (1991), Lumsdaine et al. (1992, 1994, 1996), Rust and Phelan (1997) and Blau and Gilleskie (2006, 2008)). Besides establishing the importance of health, wealth and labor market opportunities in explaining retirement patterns, these studies also point to the significance of capital and health insurance market imperfections and social security and private pension rules.

Social security rules may affect work decisions through the structure of the benefits schedule, the earnings tax and its actuarially unfair delayed retirement credit associated with postponing retirement beyond the normal retirement age. Private pensions often include substantial incentives to remain with a firm until a given age, combined with substantial incentives to leave the firm at an older age. Therefore, even in an economy with perfect capital markets where individuals can smooth consumption by borrowing against future pension and social security income, public and private pensions can produce delays in retirement and spikes in retirement rates at certain ages. However, their importance for labor supply decisions is likely to be substantially greater in the presence of borrowing constraints, which may prevent many low-wage individuals, who optimally accumulate relatively little tangible wealth, from retiring before reaching the age at which they first become eligible to receive benefits. A similar role can be attributed to the Medicare program when health insurance markets are imperfect. Limited private health insurance options could make it too risky for individuals who do not have access to employer-provided retiree health insurance to retire prior to being eligible for Medicare at 65.

Rust and Phelan (1997) provide empirical evidence of the importance of market imperfections, attributing a large part of the drop in employment at age 62 to social security eligibility and at age 65 to Medicare eligibility. Blau and Gilleskie (2006, 2008) also find significant, although more modest, employment effects of employer-provided health insurance. However, there is an important reason to believe that the roles attributed to social security and employer-provided health insurance in these studies may be overestimated. The models on which these results are based do not allow households to save, thereby removing an important instrument through which to smooth consumption (and facilitate early retirement) and to self-insure against future health expenditures. Gustman and Steinmeier (1986, 1994) instead make the alternative extreme assumption of perfect capital markets, in which individuals can freely borrow against future earnings and pension income, an assumption that is likely to lead to an underestimation of the importance of social security and employer linked health insurance.

Other empirical studies have found the effect of assets other than social security and pension annuities on the timing of retirement to be weak (Blau, 1994; Diamond and Hausman, 1984; Sickles and Taubman, 1986). However, these studies do not capture completely the complex interactions that exist between savings, health status, social security benefits, health insurance coverage and work decisions. Moreover, many of these studies take accumulated savings or assets to be exogenous in their analysis. Several studies, such as those by Feldstein (1974) and Bernheim and Levin (1989) have found social security to depress savings, which suggests that the exogeneity assumption may be incorrect.

An accurate assessment of the magnitude and manner in which social security benefits influence behavior is crucial for credibly forecasting the impact of changing the social security

program, a major goal of this paper. We, therefore, develop and estimate a model of retirement and savings incorporating limited borrowing, stochastic wage offers, health status and survival, social security benefits, Medicare and employer-provided health insurance coverage, and intentional bequests. The model is estimated on a sample of relatively poor households from the first three waves of the Health and Retirement Study (HRS), for whom we would expect social security income to be of particular importance. The estimated model is used to simulate the responses to several counterfactual experiments corresponding to changes in social security rules. These include changes in benefit levels, in the payroll tax, in the social security earnings tax and in early and normal retirement ages.[1]

Our model shares features with many recent papers that have estimated models of retirement behavior, but is more comprehensive and introduces a number of new elements. It incorporates savings behavior with limited borrowing as in Gustman and Steinmeier (2005), French (2005) and French and Jones (2007), and also models the joint labor supply decision of married couples as in Gustman and Steinmeier (2000) and Blau and Gilleskie (2008). The flexibility to augment household income through spousal work is potentially an important instrument to insure against wage and health shocks, as well as a tool for smoothing consumption. We explicitly incorporate the social security benefit rules which apply to couples, allow for health insurance coverage through the spouse and incorporate the possibility of direct preferences for shared leisure and of assortative mating on preferences and on health and market skill endowments.

Wages in our model are stochastic as in French (2005), but also depend on accumulated work experience and tenure and we allow individuals to change jobs which may or may not offer health insurance. Like Berkovec and Stern (1991), in characterizing employment choices we distinguish between part-time and full-time work, model job-to-job transitions and instead of treating retirement as an absorbing state, allow returns from non-employment into the labor force. However, we do not explicitly consider the purchase of private health insurance and medical expenditure decisions (Blau and Gilleskie, 2006), private pensions on current jobs (Lumsdaine et al., 1992, 1994, 1996; French, 2005; Blau and Gilleskie, 2006) nor do we model disability insurance applications and benefit receipt (Rust et al., 2003).

Our model accommodates observed and unobserved heterogeneity in preferences, wages, health transitions and mortality risks. In addition, individuals in our model have expectations over changes in social security policy. Myopic beliefs about the social security system may be unrealistic given the long history of changes in the social security rules and benefit levels which have been enacted over the 1969–90 period, with major changes in 1972, 1977 and 1983. As Moffitt (1987) has argued, the magnitude of behavioral responses to policy changes will depend strongly on the extent to which these policy changes were anticipated. In an analysis of data from the Survey of Economic Expectations on subjective expectations of future social benefit receipt, Dominitz et al. (2003) in fact conclude that a sizeable proportion of their sample, and especially among the young, consider it fairly likely that the social security program will no longer exist at the time they retire.

A final contribution of this paper is that we make explicit use of subjective expectations in the estimation of our model. The Health and Retirement Study contains a set of probabilistic questions on, among others, retirement and longevity expectations. For example,

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[1] Recent studies of the effects of similar changes in social security rules have been inconclusive. For example, French (2005) predicts no effect of raising the early retirement age on simulated work choices at age 62, but Gustman and Steinmeier (2005) forecast a large increase in full-time employment at that age.