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A Stackelberg model of Social Security acceptance decisions in dual career households

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Abstract

The joint Social Security acceptance decisions of husbands and wives are modeled as a Stackelberg game with male leadership. The analysis focuses on whether an individual accepts reduced Social Security retirement benefits prior to age 65 or full benefits at age 65 or older. Full information maximum likelihood estimates are presented for a sample of dual career households from the Retirement History Survey. The results indicate that Social Security acceptance decisions in dual career households depend on several individual and household characteristics as well as financial incentives. © 1998 Elsevier Science B.V.

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1. Introduction

In recent years, households with two working spouses have become more prevalent than the traditional, single-worker family. As dual career households approach retirement age, they face more complex decisions than do their more traditional counterparts. The complementarity of the couple's non-market time may induce husband and wife to retire together. Alternatively, the decrease in income due to one spouse's retirement may provide an incentive for the other to remain in the labor force.

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Despite the trend toward dual career households, most studies of retirement have focused on the individual. The few existing studies of household retirement behavior demonstrate that each individual's retirement decision depends on the behavior of the spouse. However, the theoretical models typically fail to address the possibility that spouses maximize separate utility functions.[1] In a study of married women's retirement behavior, Pozzebon and Mitchell (1989) circumvent the assumption of a single-household utility function by constraining the wife to make her retirement plans after the husband has planned his retirement. They do not model the husband's behavior but assume that the wife takes the husband's retirement decision as given and maximizes her own utility subject to budget and time constraints. Only Gustman and Steinmeier (1994) model the retirement decisions of both husband and wife in a framework that involves separate utility functions for each spouse. In their model, each spouse maximizes his or her own utility, a function of lifetime consumption and labor supply, subject to the lifetime family budget constraint.

This paper differs from the existing literature in two key respects. First, instead of examining the departure from the labor force – a reversible and often gradual process, I examine an abrupt, irreversible transition – the initiation of Social Security retirement benefits.[2] Second, I account for the interaction of spousal decision making by using a Stackelberg model with male leadership. The use of a non-cooperative model in a household setting is controversial because the equilibrium is not necessarily Pareto-optimal. However, it is unclear empirically whether models based on Pareto optimality dominate non-cooperative models. For example, Kooreman (1994) estimates and compares various models of household labor force participation including models based on non-cooperative solution concepts (Nash and Stackelberg equilibria) and models that presume Pareto optimality (equilibria based on Pareto optimality only and mixtures of Pareto-optimal equilibria and Nash equilibria). All models except the pure Pareto-optimal model converge. The empirical performance of the non-cooperative models is very similar to that of the mixed model. In terms of the Kullback–Leibler information criterion, the Stackelberg models perform better than the mixed model but the mixed model performs better than the Nash model. In terms of the proportion of correct joint predictions, the mixed model outperforms the non-cooperative models.

Using full information maximum likelihood techniques, I estimate the Stackelberg model using a sample of dual career households from the Retirement History Survey (RHS). The results indicate that the Social Security acceptance decisions of husbands and wives depend on several individual and household characteristics as well as financial incentives. Although the Stackelberg framework represents one of several possible models, my results enrich our understanding of the retirement process in dual career households.

[1] Some authors (e.g. Clark and McDermed, 1989, Henretta and O'Rand, 1983, Henretta et al., 1993, O'Rand et al., 1992) do not explicitly model household or individual preferences, while others (e.g. Clark and Johnson, 1980, Hurd, 1990, Rhind, 1990) base their models on the assumption of a single-household utility function.

[2] Although benefits are suspended during periods of excess earnings, an individual's entire stream of benefits depends on his or her retirement age.