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Household behavior and the marriage market ☆

Daniela Del Boca [a,c], Christopher J. Flinn [b,c]

[a] *Department of Economics, Universita di Torino, Italy*
[b] *Department of Economics, New York University, United States*
[c] *Collegio Carlo Alberto, Italy*

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Abstract

There is some controversy in the field of household economics regarding the efficiency of household decisions. We make the point that a flexible specification of spousal preferences and the household production technology precludes the possibility of using revealed preference data on household time allocations to determine the manner in which spouses interact: efficiently or inefficiently. Under strong, but standard, assumptions regarding marriage market equilibria, marital sorting patterns can be used essentially as "out of sample" information that allows us to assess whether household behavior is efficient or not. We develop a new likelihood-based metric to compare marriage market fits under the two alternative behavioral assumptions. We use a sample of households drawn from a recent wave of the Panel Study of Income Dynamics, and find strong evidence supporting the view that household behavior is (constrained) efficient.

JEL classification: D13; J12; J22

Keywords: Bilateral matching; Household time allocation; Efficient outcomes; Likelihood analysis

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1. Introduction

Most analyses of household behavior conducted at the microeconomic level posit cooperative behavior by spouses (for some exceptions, see Chen and Woolley [8] and Del Boca and Flinn [13]). In fact, Chiappori and his coauthors (e.g., Chiappori [10], Browning and Chiappori [5]) have argued that all such models should posit efficiency as an identifying assumption when attempting to estimate individualistic preferences using data on household allocations. Such an assumption, however, leads to other difficult identification issues since the dependent variables, which are household allocations, are not uniquely determined without further auxiliary assumptions regarding how the household selects one particular efficient allocation from the continuum of such choices that typically exist.

Chiappori and his collaborators (e.g., Chiappori [9,10], Browning et al. [6], Browning and Chiappori [5], Bourguignon et al. [4]) have proposed a data-based strategy to estimate the household utility function $\alpha(z)U_1(x) + (1 - \alpha(z))U_2(x)$, where $\alpha(z)$ is the Pareto weight attached to the individualistic utility of agent 1, x is a vector of consumption choices, and z is a vector of personal, household, and environmental characteristics. The solution to this problem lies on the Pareto frontier for $\alpha(z) \in [0, 1]$. Model identification is achieved through restrictions regarding the arguments of the weighting and individualistic utility functions and/or functional form assumptions. Identification is achieved without resort to a specific axiomatic solution, with the data (z and x) given the power to solve the multiple equilibria problem within the particular model structure.

In Del Boca and Flinn [13], we showed that when allowing unrestricted individual heterogeneity in wages, preferences, and household productivity, models of noncooperative and cooperative behavior were nonparametrically identified (i.e., from information on wages, nonlabor incomes, and time allocation decisions of households) and that they were all simply different mappings of the data into the parameter space.[1] In an empirical sense, then, all of these models were equivalent. We constructed a model based on Folk Theorem results that allowed households to choose their mode of behavior (cooperative or noncooperative). We showed that this model was not nonparametrically identified, and proceeded to estimate all of the models under parametric assumptions on the distributions of preferences and productivities. The "endogenous household interaction" model, as we called the model in which households choose to act cooperatively or not, was found to fit the data the best. The estimated parameters indicated that one-fourth of households behave in a noncooperative way with the rest using a cooperative decision rule.

In this paper we further explore the issue of the "mode" of household behavior, and for simplicity focus on only two alternatives, noncooperative Nash equilibrium (NE) and "constrained" Pareto optimal (CPO) behavior, to be defined below. We first show, as in our earlier paper, that after allowing for general forms of population heterogeneity in preferences and household productive ability, it is not possible to distinguish between *NE* and *CPO* solely on the basis of household time allocation data. To do so requires imposing homogeneity restrictions that may not be justifiable and are essentially untestable. We then show how patterns of *marital sorting* observed in the data potentially contain valuable information on the manner in which household members interact. We are by no means the first to point this out. Following the view of Becker [2] that marriage is a partnership for joint production and consumption, several authors have analyzed aspects of the marriage market to explore marital behavior and the gains to marriage (e.g.,

[1] The models are all saturated models in which the number of parameters (fixed preference and productivity draws) is equal to the number of data points. They amount to different parameterizations of a saturated model.