

## Household Allocation of Resources to Children Over the Last Fifty Years

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This paper estimates a household collective bargaining model with children, using data spanning from 1965 to 2005, to examine how the economic environment and differences in preferences across generations have led to changes in the division of household responsibilities between parents. More specifically, the responsibilities examined here include income generation and child-care, for which time-use measures suggest substantial changes in gender roles over the last fifty years. First, identifiability results are established for the collective bargaining model with children (Blundell, Chiappori, and Meghir, 2005) using time use data alone, and then the model is estimated using US time-use surveys spanning 1965 to 2005.

Empirical application of the collective labour supply model to households with children has been limited by a paucity of theoretical results and exacting data requirements (Blundell, Chiappori, and Meghir, 2005). Previous studies suggest that identifiability of such a model requires data on both time use and individual consumption. The only paper that has estimated this model using a dataset fulfilling these requirements is Cherchye, De Rock, and Vermeulen (2011); however their dataset contains only 212 observations. Here, using results from Chiappori and Ekeland (2009), we relax the requirements for identifiability such that they are consistent with typical time use datasets. Alternative approaches to estimating collective bargaining models with children subsume children within household production (where parents can use time to produce consumption goods, see Apps and Rees, 2002, 1996, 1997). In our model, parents derive utility from children's' welfare rather than 'consuming' them, which is arguably a more appropriate assumption, especially for examining the intra-household allocation of resources. In addition, Guryan, Hurst, and Kearney (2008) find that parents' preferences for children and home production are fundamentally different.

Although the theoretical results allow estimation of the collective bargaining model on current time use datasets, such datasets dating back to 1965 suffer from a number of limitations. Using data combination techniques (Moffit and Ridder, 2007; Chen, Hong, and Tarozzi, 2004) our model can be successfully estimated by GMM. Sample selection techniques are used to account for those not working, and endogeneity of non-labour income is accounted for using IVs in a similar manner to Lise and Seitz (2010). Our stochastic specification allows for CES preference parameters to vary with observed characteristics and cohorts, and for measurement error in hours worked and time spent with children.