Response to ESRC:

**A brief review of some economic literature on intra-household allocation and decision-making**

In the “unitary” model\(^1\) of household decision-making, households are modelled as if they were single utility-maximising units. Numerous empirical studies have rejected this model’s testable implications, that household demand is independent of the intra-household distribution of income (income pooling) and satisfies the Slutsky conditions (for examples of such studies see, among others, Bourguignon et al 1993, Browning et al 1994, Browning and Chiappori 1998, Fortin and Lacroix 1997, Lundberg, Pollak and Wales 1997, Thomas 1990, Behrman 1988, Dauphin and Fortin 2001, Attanasio and Lechene 2002). These studies do not reject the implications (Browning and Chiappori 1998, Vermuelen 2002) of an alternative “collective” model of household decision-making, first introduced by Chiappori (1988, 1992) and Apps and Rees (1988), whose only restriction is that households arrive at a Pareto-efficient outcome (see Donni 2008, Bargain et al. 2006, Browning, Chiappori and Lechene 2006, Behrman 2003 and Vermuelen 2002 for recent overarching discussions and surveys).

Where on the Pareto frontier this outcome lies can be modelled as the result of maximisation of a household social welfare function that is the weighted sum of the utility functions of the individuals that make up the household, in which the Pareto-weights reflect the relative power of individuals within the household over household decision-making. Thus for a two person household, the collective model has an explicitly one-dimensional notion of power, captured by the Pareto-weights in the household social welfare function. These weights can be influenced by income, prices and “distribution factors”. Any variable, internal or external to the household, provided that it has no direct influence on preferences or on the household’s budget constraint, can be considered as a potential distribution factor. Shifts in distribution factors therefore have consequences for household decisions and the welfare of individuals within the household even though they do not shift its utility possibility frontier.

Variables tested in the literature for their effects on intra-household expenditure shares and the composition of total household expenditure include household members’ relative share of non labour income, their wage rates and some other prices, total household expenditure, class, caste and education variables and partners’ age difference (Vermeulen 2005, Churi 2000, Behrman 1988, Fortin and Lacroix 1997). “Extra-household environmental factors” (McElroy 1990), such as the availability of future partners of the opposite sex and divorce legislation (Chiappori, Fortin and Lacroix 2002), family policy variables and the treatment of married couples, singles and lone parents by the tax-benefit system (Bargain et al. 2006) have also been investigated as possible distribution factors.

Collective models have developed over the years to incorporate new features and relax their initial restrictions, so that the models now can account for household public

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\(^1\) See Samuelson (1956), Becker (1973) and Becker (1991) for various specifications of the unitary model.

There are two main estimation strategies for collective models in the absence of price variation. The first is to identify at least one assignable good, or equivalently two exclusive goods. Usual candidates for an assignable good are leisure time (Chiappori 1992 and 1997), and expenditure on men’s and women’s clothing (Browning et al. 1994). Leisure time is problematic in the presence of home production, without making the questionable assumption that all home produced goods could have been bought in the market (Apps and Rees 1996). This could be rectified by using time-use data, but few data sets contain both time-use data and enough potential distribution factors (Apps and Rees 2004). Clothing is problematic because it is strictly assignable only under the unlikely assumption that members of a couple are indifferent to what each other wears.

An alternative estimation strategy is to use data across both single and couple households and, by parameterising how preferences might change, if at all, when men and women move into or out of couples, to estimate those parameters along with other features of the model (Browning, Chiappori and Lewbel 2003, Couprie 2007, Lewbel and Pendakur forthcoming). Alessie, Crossley and Hildebrand (2006) simplified the estimation procedure developed by Browning, Chiappori and Lewbel (2003), by using answers to income satisfaction questions in panel data. In our proposal we follow their approach but in a different framework.

Collective models are a generalisation of earlier “household bargaining” models that use tools from cooperative game theory to model the bargaining process (Manser and Brown 1980, McElroy and Horney 1981, as well as Lundberg and Pollak 1993 and more recently Pollak, 2005). Bargaining models, like collective models, assume that any outcome is Pareto-efficient, but they provide more structure to the process by which a particular allocation on the utility possibility frontier is determined. To do this each member of the household is assumed to have a threat point to which they can unilaterally retreat. This rules out allocations that are not at least as preferred as their threat point by all members of the household, and means that the role of bargaining is to allocate the gains that can be made in moving beyond the threat point to arrive at a particular allocation on the Pareto-frontier. In these models, the bargaining power of an individual is determined by their utility at the threat point: the better off individuals are at the threat point, the better the outcome will be for them. To allow the threat point to determine a unique outcome a bargaining solution is required. Most household bargaining models use the Nash bargaining solution, based on a cardinal notion of utility, which maximises the product of gains above the threat point (Manser and Brown 1980, McElroy and Horney 1981).

Bargaining models differ in what they see as the threat point. There are broadly two types. “Divorce threat” models, for which the threat point is household dissolution,

\(^2\) This is the only case in which the conditions of the collective model were rejected, that is, outcomes appeared not to be Pareto efficient.
see distribution factors as those that affect the well-being of household members living on their own (McElroy and Horney 1981, Manser and Brown 1980). An alternative threat point is the breakdown of cooperation within the household; this can be the non Pareto-efficient outcome of a non-cooperative bargaining model (Grossbard-Shechtman 1984, Lundberg and Pollak 1993, Konrad and Lommerud 2000, Chen and Woolley 2001). An example of such a model is the explicitly gendered “separate spheres” model of Lundberg and Pollak (1993), in which at the threat point each partner contributes to the household public good in the sphere traditionally allocated to their gender, but only at the level that is utility maximising for themselves alone. In this situation, the source of current financial resources can matter to the outcome of bargaining. Lundberg, Pollak and Wales (1997) test this model by showing that a change in policy which resulted in the transfer of state payments for children from fathers to mothers in intact households in the UK in the late 1970s affected the household allocation of resources. The policy change would not have such an effect under the unitary model or even the divorce threat model, since on divorce the parent with custody of the child would have received such payments both before and after the change. However other researchers have not found such an effect for Australia (Bradbury 2004) and even for the UK, Lundberg, Pollak and Wales’ interpretation of their results has been questioned (Hotchkiss 2005). Sen’s cooperative conflict model (1990) builds on these household bargaining models, but he criticises them for using too restricted an informational base, in particular for ignoring the influence of perceptions on the household bargaining process. Collective models require the usual assumption of (stable) well-defined individual preferences determining individual behaviour by utility maximisation (Sen 1990, Nussbaum 2003). But Sen argues that, even if such preferences existed, we could not associate well-being with such utility, as individuals may “prefer”, and act to achieve, solutions that are not necessarily beneficial to themselves. Further, he claims that within the household it is (shared or individual) perceptions of individual contributions, of fallback positions and of interests, rather than these factors’ objective values that affect the intra-household allocation. For example, the value of contributions to the household may be differently assessed according to their source (outside employment versus home-based employment) or the gender of the contributor. Because of this “social technology” outcomes may not be efficient.

We are interested in examining the impact of factors on well-being in a number of different domains and in being open to the possibility that power may be multi-dimensional, with entitlements within different domains influenced by different factors, and/or that there might be trade-offs between different domains. As we have seen, for a household in which two people have an influence on allocative decisions, the collective model has an explicitly one-dimensional notion of power, captured by the Pareto-weights in the household social welfare function. Any aspects of life not considered within such a model must be assumed to have quite separable effects.

To implement a model within this framework we do not assume a utility maximising specification. We are interested in entitlements, the resources that enable people to reach outcomes in different domains, rather actual expenditure of goods, services or

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3 Browning, Chiappori and Lechene (2006) develop a model in which preferences and the division of income within the household, rather than gendered social norms, determine the public goods to which the man and woman contributes.
time. In that sense, our research builds on the capability approach: what matters is what people can do or be rather than what they actually do or have. Because entitlements are not directly observable, we shall measure them indirectly, by their effects on individual answers to questions concerning different domains of satisfaction.

There are a number of possible ways we can try to allow for the difference between perceptions and the objective factors behind these perceptions. The one that we shall start with in this project is to allow all individual level explanatory variables potentially to have an influence that varies by gender, on both own and partner’s entitlements. Thus, for example, our framework allows for the possibility that the man’s unemployment might be differently perceived from the woman’s unemployment, and that those different perceptions might also differ between the man and the woman. Other ways of allowing for differing perceptions would be to allow for earnings from different types of employment to have different coefficients, with these again potentially varying by gender. Household and extra-household level variables may also impact in gendered ways, not only through perceptions, but through their impact on norms and opportunities within and outside the household. Folbre (1997) prefers to call such extra-household variables “gender specific parameters” because so many of them are gendered, that is, given dominant gender norms, in practice they affect men and women differently.

Many studies using a collective framework reveal outcomes of their empirical specifications that are broken down by gender (Alessie et al. 2006, Browning, Chiappori and Lewbel 2003; Lewbel and Pendakur forthcoming, Couprie 2007). However, fewer studies test whether the effects of individually based distribution factors are asymmetric by gender, for example, whether the share of income has non-linear asymmetrical effects (Couprie 2007 is an exception). Household level variables, such as children (Bourguinon 1999, Blundell, Chiappori and Meghir 2005), and extra-household variables, such as the sex ratio in the population (affecting opportunities on the marriage market), divorce legislation, or different tax-benefit regimes have been included in collective models (Chiappori, Fortin and Lacroix 2002, Myck et al. 2006, Lundberg, Pollak and Wales 1997) and, as the authors note, these could be picking up gendered effects.

We will allow for the potentially, multidimensional aspects of power by examining entitlements in different domains, for example free time as well as expenditure. This is an advantage of using satisfaction measures as our dependent variables – the data sets we shall use contain a number of different satisfaction measures, corresponding to different areas of entitlements, and we will be able to examine the factors affecting each. We should therefore be able to test whether intra-household power is in fact one-dimensional and examine possible trade-offs between domains.

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4 An example for the divorce threat model is legislation on child support which will affect the future financial autonomy of men and women differently within the marriage if it is known that in the case of divorce the woman is more likely to retain custody of any children and the man to have to pay child support. Childcare subsidies could similarly be gender specific parameters in a perceived contributions model, if mothers rather than fathers are expected to pay for childcare out of their earnings (Himmelweit and Sigala 2004).
By building on Sen’s theoretical framework we will therefore provide an alternative way to explore issues about intra-household allocation to collective models, that does not need all of the latter’s assumptions, in particular the existence of well defined individual preferences. Inevitably we will have to make some strong assumptions of our own. Nevertheless, having a different method of examining intra-household inequalities and the theoretical and empirical results that it generates will be of benefit in themselves.

Throughout this project, we will ensure that we keep ourselves well informed about developments in collective, and any other economic, models of intra-household allocation. As time has gone on, such models have become more powerful, overcome previous limitations and tackled new issues. Indeed, the use of satisfaction scores by Bonke and Browning (2003), that informed the collective model approach of Alessie et al. (2006) was the inspiration for our approach. The distribution factors that we will initially use are those that are suggested by the collective and bargaining literature, as well as qualitative studies on intra-household power and money management. Similarly, there may be knowledge transfers in the opposite direction; our findings may suggest new distribution factors that could be examined in the collective framework.
References


