

**The family and development:
Gender, power and the distribution of resources within the household¹**

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1. Introduction

Over the last two or three decades, theoretical and empirical studies of household behavior have taught us a good deal about the relationship between household choices and economic development. The basic paradigm of a household choosing allocations (of goods and labor supply) to maximize its welfare in the face of a series of constraints has proved to be a very powerful tool.²

Many of the studies in economics, along with a large body of literature in sociology, anthropology and demography, have taught us that the relationships between household behavior and public policy are not simple. A key area which has received a good deal of attention is gender differences in the allocation of resources. On one hand, there are an enormous number of studies documenting differences in opportunities and resources available to males and females (in the market, in the social sector and in the household). On the other hand, some studies have examined differences in allocations depending on whether men or women control resources. Elements of both strands of the (economics) literature are discussed below, with a focus on the process underlying household allocation decisions. The next section outlines models of household behavior and is followed by some

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²For example, the economic model of the farm-household (Singh, Squire and Strauss, 1986) has led to several key insights into the role of the family in the allocation of resources, particularly labor (on and off the farm), (Pitt and Rosenzweig, 1986; Benjamin, 1992). Models of migration have demonstrated that decisions to move depend not only on individual characteristics, but also those of households (Stark, 1991) and have suggested a rationale for remittance of income back to the origin, over and above pure altruism. There has also been some research on the role of the (extended) family as a mechanism to share risks (Rosenzweig, 1991, and the references therein).

applications of those models focussing on the role of gender. We then turn to evidence for differences in resource allocations to males and females and interpret that evidence in light of a model of household allocation decisions.

2. *Modelling the allocation of household resources*

Much of the work in the social sciences on household behavior has highlighted (explicitly or implicitly) the importance of *decision-making within the household*. By and large, however, economists have tended to ignore the issue. In fact, the most common economic model of the household treats it as a "black box" (or, more precisely, as a single homogeneous unit). This amounts to assuming either that all household members have identical (or *common*) preferences and so the household is, to all intents and purposes, the elementary decision unit. Put another way, the household may be treated as if all resources are pooled and then allocated according to some (common) rule. The notion not only seems implausible but also flies in the face of the basic assumptions underlying micro-economic theory which treats a decision-maker as a single individual, characterized by his (or her) own preferences. An alternative justification for the "traditional" economic model of the household is the assumption there is one household member (a *dictator*) who determines all allocations (either from the point of view of pure self-interest or behaving as an altruist).

Recently, there has been a resurgence of interest in developing theoretically more appealing models of households which explicitly take account of the fact that individuals within a household may have different preferences. Realism, however, does not come for free: it carries along with it complexity and thus the need for additional assumptions.

One class of models in this literature suggests that household allocation decisions are the outcome of a bargaining process in which household members seek to allocate resources over which they have control to goods they especially care about. While the exact nature of this bargaining process may take a number of forms,³ the intuition underlying all these models is quite simple.

Each household member has some fall-back position (level of utility) and will quit the household if his (her) welfare falls below this "threat point" level. If the sum of utilities associated with these fall-back positions is less than total household welfare, then the household will dissolve. Any utility over and above the sum of the individuals' threat points is shared among household members presumably in accordance with their bargaining strength. We clearly need to assume some kind of structure for this process and thus place additional restrictions on the model. Failure to reject the traditional *common preference* model of the household in favor of this model

³In this framework, it is necessary to define the appropriate concept of equilibrium. Many studies have drawn on the seminal work of McElroy and Horney (1981) who focus on Nash equilibrium; see also refinements in McElroy (1990, 1991). Manser and Brown (1980), Ulph (1989), Bjorn and Vuong (1984, 1985) consider alternative equilibria. Lundberg and Pollak (1992) describe a model in which household members have separate spheres of interest over which they may bargain. Related class-based models of conflict are discussed in Folbre (1986) and Hartmann (1983). For a more structural approach to modelling the household, see Behrman, Pollak and Taubman (1982, 1986).

does not necessarily mean that treating the household as a single unit is appropriate; it may simply mean that these additional restrictions are false (Chiappori, 1988).

Chiappori (1992, 1993) has proposed a different *collective* model of the household in which members allocate resources in such a way that no allocation could result in one member being better off without some other member being worse off: that is resource allocations are *Pareto efficient*. It turns out that this model can simply be re-interpreted in terms of an income-sharing rule. We can treat the household as if all members pool their income and then allocate it according to some sharing rule. Thereupon each household member maximizes his (her) own utility, conditional on making choices about public goods within the household.

This income sharing rule has a very nice intuitive interpretation as an indicator of relative bargaining power of household members: the more powerful and individual, the bigger that person's share of the pie. This suggests a rich set of empirical tests of the model of *common preferences* against the more general *collective* model.

3. Implications for understanding individual and household behavior

Why do we need these models? In the context of the traditional (economic) model of the household, it is not even possible to discuss the welfare of household members in a meaningful way. Yet, public policy is often concerned with the welfare of particular members (children, women, the elderly). Further, it is very hard to explain household formation and dissolution without taking account of individuals' preferences. But, perhaps even more importantly, if public policy is likely to change the balance of power within the household then it is imperative that the implications of these changes be taken into account when designing policy.

As an example, investments in raising the productivity of crops which have been traditionally grown by women in Africa were intended to raise the status of women; what happened, however, was that these crops were taken over by men (see, for example, Dey, 1992; Guyer, 1986; von Braun and Webb, 1999); whether women (and other household members) were better or worse off as a result of these innovations is not entirely clear.

The example suggests that it may not be easy to improve the status of women. It is clear, however, that in order to evaluate the impact of these kinds of programs, we need to take account of the potential behavioral responses of all household members: it is only within the context of a collective model of the household that this issue can even be considered.

There is quite a lot of literature which argues that men and women have different preferences: it is often asserted that, relative to fathers, mothers care more about the health (education and well-being) of their children. If true, then this would suggest that women will seek to allocate more resources towards improving child health than would men.

Some of the evidence for this view seems to be based on the observation that those children whose mothers work are also healthier⁴ (although this is not an universal finding). Even if the empirical facts were clear, their interpretation is not straightforward. The observation may simply reflect a positive correlation between child health and household income if households with working women have higher total income.

Nor is there a simple interpretation in the collective model of the household. Presumably members bargain not only over commodities but also over leisure and time allocation. A woman working outside of the home may bring in income but that does not necessarily mean she gets a bigger share of the pie to allocate⁵. Instead, it is options outside the home which affect her bargaining position (her threat point) and these might be related to, for example, the assets she owns (or controls) and will take away with her if she leaves the household, her options in the re-marriage market and the (expected) wealth of her (future?) extended family.

A theoretically more appealing test of the hypothesis of different preferences of household members would examine the impact on allocations of these sorts of characteristics. Their measurement, however, is not straightforward and this raises another set of thorny problems. Most studies that use data from developing countries have used non-labor income (or the value of assets) as indicators of bargaining power (although some studies have also tried to take account of marriage market opportunities).⁶

4. Empirical evidence on role of gender in household resource allocations

Schultz (1990) finds that in Thailand resources in the hands of women tends to reduce fertility more than income held by men and, furthermore, that the impact of non-labor income has different effects on labor supply outcomes depending on who controls that income; (see, also, Thomas and Strauss, 1992). Using data from Brazil, Thomas (1990) reports that child health (survival probabilities, height for age and weight for height) along with household nutrient intakes tend to rise more if additional (non-labor) income is given to women rather than men. Using the same data, Thomas (1992) reports that non-labor income in the hands of women is associated with increases in the share of the household budget spent on health, education and housing.⁷ See also the work on France and Canada in Bourignon, Browning, Chiappori and Lechene (1991, 1992). Evidence in India indicates that children are more likely to attend school and receive medical attention if the mother has more assets (mostly jewelry) (Duraismy, 1991; Duraismy and Malathy, 1992). Schultz (1991) also reports that marital choice is affected by an individual's non-labor resources.

⁴For a review of the sociological literature, see Blumberg (1988); Behrman (1990) provides an excellent summary of the evidence in economics.

⁵Furthermore, treating income earned in the labor market as predetermined imposes additional assumptions on the model.

⁶See Carlin (1990) for a study in the United States; Rao and Greene (1991) examine Brazilian data.

⁷It turns out that this result holds for total (non-labor and labor) income (measured at the individual level) where labor income is treated as endogenous.

While this literature is small, the results are suggestive that resources in the hands of different individuals within a household do not have the same impact on the welfare of all members. In particular, there is some evidence that changes in the balance of power between men and women may affect household commodity patterns along with the health and welfare of children. The results, however, are certainly not universal: see, for example, McElroy and Horney (1981).

At this point, we need to know a lot more about the practical importance of modelling the household in this more general framework. A better understanding of how household allocations differ by gender of the person controlling the resources is a critical first step. We cannot, however, stop there: from the point of view of policy, we also need to know whether there are feasible and cost-effective mechanisms for affecting the intra-household balance of power. It does seem, at least, that this may be a useful direction for further empirical research especially in the context of complex household formation such as exists in Africa (Lloyd, 1992; Haddad and Hodinott, 1992) or rapidly changing societies, as in Asia and Latin America.

5. Gender differences in household resource allocations

We turn next to examining gender differences in the allocation of resources to household members. The discussion focusses on child investments, although most of the substantive points apply to resource allocations to any household member.

Why might households discriminate against daughters? Firstly, the (expected) returns to investing in sons might be higher. Assuming all household members have the same preferences or a dictator prevails, (the "traditional" model), then it is efficient to invest in the household member with the highest return. We cannot, however, say anything about the utility of each household member. On one hand, the dictator may care not at all about other household members; on the other hand, the dictator may want to ensure all members enjoy the same level utility in which case there would be lump sum transfers from one household member to another to compensate for differences in investments (utility levels). Of course, if these transfers are not possible, then there may be an efficiency-equity trade off (Behrman, Pollak and Taubman, 1986). Indeed, if there are differences in endowments (of health and ability), then equity itself may be a reason for observing differences in resource allocations to household members as the dictator attempts to redress these (natural) differences.

Moving to a collective model of the household, the story becomes slightly more complicated as it is necessary to specify individual utilities and also describe the mechanism underlying household decisions. Consider the perspective of parents. In many traditional societies, parents rely on their sons to look after them in old age (Caldwell, 1979); in this case it would be efficient (for the parent) to invest more in a son, rather than a daughter. Why not invest in only one son? Parents probably care about the welfare of their sons and daughters and they may be risk averse: that son could be a lemon.

Along these lines, however, one variant of this model might assume that it is only expected returns to the parent that matter in their calculation. It is not enough, then, to argue that the fact men earn higher wages (or spend more of their life in the labor force) than women in order to explain gender differences in resource

allocations. Parents must be able to extract more resources from sons than daughters. If investing in a daughter leads to a better marriage and that married daughter provides resources to her parents, then discrimination may not be explained by (market) returns alone. Notice also that returns need not be measured only in terms of income (or remittances) but might also take account of time spent caring for parents. As societies age, these aspects may take on increasing importance.

If life expectancy differs for men and women, then (in the context of the collective model of the household), a mother and father may have different preferences regarding investments in children based purely on the (discounted present value of expected) returns to those investments. This would lead to mothers and fathers wanting to invest different amounts in their children for purely economic reasons. Furthermore, women may receive a greater return in later life from investing in daughters rather than sons and the reverse may be true for men.

A second source of discrimination within the household might be differences in the costs of investments in boys and girls. For example, young girls may provide child care or household services if they did not go to school in which case the perceived cost of schooling a daughter will be higher than the price of schooling a son. The argument can easily be reversed if sons provide help on the farm. In the absence of differentials in returns to investments, however, it is hard to imagine why households would not share these kinds of burdens equally across gender.

The third reason why there might be differences in resource allocations is simply tastes. Parents might just derive more pleasure (utility) from investing in sons, rather than daughters. Permitting heterogeneity in preferences of parents would allow, for example, fathers to prefer to invest in their sons, rather than their daughters.

There are, it seems, a large number of reasons why gender differences might be observed in resource allocations. It is apparent that effective public policies which seek to reduce inequities in resources available to men and women can only be designed with a sound knowledge of the underlying reasons for those inequities.

6. Empirical evidence on gender differences in resource allocations

There can be little doubt that there is discrimination in many societies and that discrimination is often entrenched either through public policy (and legislation) or social norms or both. But what of evidence regarding discrimination within the household?

There are many studies suggesting that fertility preferences are gender specific. Other studies have looked at gender differences in mortality and human capital investments. Broadly speaking, in South and possibly Southeast Asia, females tend to fare worse than males⁹ but the evidence elsewhere seems weaker⁹ except,

⁹D'Souza and Chen (1980) and Rosenzweig and Schultz, (1982) find infant and child mortality in India is lower among boys; Sen, (1984), Sen and Sengupta (1983) and Behrman (1988) argue, on the basis of anthropometric indicators, that boys receive preferential treatment in India. Several studies indicate that boys tend to be favored in the intrahousehold distribution of nutrients (Behrman and Deolalikar, 1989, for India; Evenson *et al.*, 1980,

perhaps, in terms of schooling where there is evidence in a variety of countries that women are significantly less likely to attend school (Schultz, 1992).

While evidence of substantial mortality differentials between boys and girls is unequivocal, other (more subtle) evidence regarding gender differences in health inputs and outputs is less readily interpreted. For example, simple comparisons of nutrient intakes of men and women tell us nothing about differences in resource allocations unless we also know the *needs* of these men and women. Needs, however, are very difficult to measure and are related to all sorts of factors, including activity levels, body size and previous nutrient intakes, all of which are endogenous.

Comparing individual nutrient intakes (to the extent they can be measured) with some international standards for an "average" individual (in some other society) may tell us nothing about intra-household resource allocations but, instead, inform us about the appropriateness of the international standards. Furthermore, there is evidence, that taking account of (typically unobserved) heterogeneity in energy output and body size can completely change inferences regarding evidence of gender differences in nutrient intakes (Pitt, Rosenzweig and Hassan, 1990). This does not mean there is no gender discrimination in the allocation of tasks, but it at least directs us towards the questions that need to be addressed.

Along the same lines, gender differences in resource allocations have been inferred from comparisons of the anthropometric outcomes (height for age, weight for height and sometimes weight for age) of boys with girls. These outcomes, however, are related to age and gender specific standards: clearly if internal standards are produced using the survey data themselves, then there is no basis for making statements regarding gender differences. If external standards are used, then we can only say there are differences relative to those standards. The finding that relative to a well nourished child of the same age in the United States, girls in many developing

and Senauer *et al.*, 1988, for the Philippines; Chen, Huq and D'Souza, 1981, for Bangladesh; Chernikovsky *et al.*, 1983, for India) although part of these differences can be ascribed to different activity levels (Pitt, Rosenzweig and Hassan, 1990, using data from Bangladesh). Alderman and Gertler (1989) report the income and price elasticities of the demand for health care are larger for girls than boys in Pakistan. Finally, Subramanian and Deaton (1990) argue there is evidence in Indian NSS data that parents make more room in their household expenditures for boys rather than girls. Strauss, Gertler, Rahman and Fox (1992) present evidence that women are more likely to have functional disabilities than men; this is true for older people in Malaysia and at all ages in Bangladeshi and Jamaican families.

*There is little evidence other than in Asia for gender differences in infant and child mortality outcomes; gender differences in levels of anthropometric outcomes are small and often not significant; see, for example, Strauss, (1989), and Svedberg, (1990), on Africa and Schofield, (1979), on Latin America. In many countries, school enrolment ratios are higher for boys: Schultz (1987) argues that gender bias in schooling enrollments and attainments tends to decline with income. Psacharopoulos and Arriagada (1989) present evidence for discrimination against boys in school attendance and performance in Brazil; Chernikovsky (1985) argues there is discrimination against girls in school attendance in Botswana. In the equivalence scale literature, there is little evidence for gender bias in the allocation of expenditures in the Côte d'Ivoire and Thailand, (Deaton, 1989), or in the United States, (Gronau, 1985). See Behrman (1990) for a comprehensive review.

countries tend to be taller and heavier than boys of the same age may simply reflect differences in growth curves of boys and girls and not tell us anything about resource allocation.

Rather than compare levels of outcomes between boys and girls, we might ask whether additional resources given to a household are allocated differently to boys and girls. That is, if the household were to be given more income, who would benefit most?

This suggests comparing the impact of household (and community) resources on welfare indicators of boys and girls. There is evidence that price and income elasticities of human capital investments are higher for girls, relative to boys.¹⁰ That is, if prices are raised, then girls are more likely to drop out of school (or not receive medical attention) than boys.

There is a lot of evidence supporting the view that parental (and particularly maternal) education is positively associated with human capital outcomes of children. Some studies have demonstrated that mother's education has a bigger effect on the health or schooling of a daughter than that of a son whereas father's education has a bigger impact on the son.¹¹

This surely reflects, at least in part, the technology of child rearing.¹² In many societies, children participate in work within the family and typically sons work with their fathers, daughters with their mothers. There is some evidence that returns to investments are gender specific. For example, in the United States, Spitze and Logan (1990) report that daughters are more likely to be in contact with and assist their parents (with money, time or both) in old age and that a single mother is significantly more likely to be in contact with her children if at least one is a daughter. After the father's death, daughters tend to give more attention to their widowed mothers and sons give less (Hess and Waring, 1978).

¹⁰de Tray (1984), Gertler and Glewwe (1990) examine the demand for schooling in Malaysia and Peru respectively; Schultz (1984) uses cross-national data on schooling; Behrman and Deolalikar (1988) examine anthropometric outcomes and Alderman and Gertler (1992) look at the demand for health care.

¹¹Bhuiya *et al.* (1986) use data on weight for age in Matlab, Bangladesh; Duraisamy and Malathy (1992) use data on medical care and schooling of children in India; King and Lillard (1987) and King and Bellew (1989) examine schooling in Peru and among Malays in Malaysia; Desai *et al.* (1989) consider intellectual or cognitive ability in the United States as do Sabot *et al.* (1990) using data from Pakistan. Thomas (1990) presents evidence using height for age in the United States, Brazil and Ghana. Child mortality is examined in Bangladesh by Bhuiya and Streatfield (1991) and in India by Bourne and Walker (1991).

¹²Durkheim (1893) called this the sexual division of labor. Over the last two decades there has been a good deal of research by psychologists indicating that fathers play a bigger role in the development of their sons than their daughters. Fathers spend more time with their sons and sons show preference for their fathers at an early age (at least from the second year of life) (Lamb, 1976; Morgan, Lye and Condran, 1988). Mothers, on the other hand, tend to spend more time with their daughters and have a closer relationship with a daughter than a son. For a synthesis of this research, see Lamb (1976, 1987). Longitudinal data on child development indicates that the absence of a father (because of divorce) has a more severe and enduring impact on boys than girls (Hetherington, Hetherington and Cox, 1978). Similar differences by gender are reported for the impact of divorce on child health (Mauldon, 1990).

The data also suggest that gender specific investments by mothers and fathers reflect differences in preferences. In the Philippines, better educated mothers tend to allocate greater inheritances to their daughters than to their sons, and better educated fathers favor sons (Quisumbing, 1993). In the United States, the birth interval between first and second born is independent of gender of the first child among white women but, among black women, it is smaller if the first child is a son. Black women apparently prefer daughters (Teachman and Schollaert, 1989). In several developing countries, the data suggest that fathers with sons are more willing to limit their family size than fathers without sons, (Caldwell and Caldwell, 1978; Mason and Taj, 1987). Sociologists and demographers have pointed out that the probability of marital dissolution in the United States is lower if a couple has a son (Spanier and Glick, 1981). It is argued that this reflects a higher price of marital dissolution to the father with sons (with whom he spends more time) (Morgan, Lye and Condran, 1988).

In terms of the impact of parental characteristics on child health, we find that in Brazil, women devote nonlabor income towards improving the health of their daughters but not their sons. In Ghana, if a woman is better educated than her husband, then her daughter benefits more and her son benefits less from her education than if the husband is better educated than his wife. Neither result is easily explained without assuming heterogeneity of preferences. They can, however, be readily interpreted in the context of the collective model of the household if nonlabor income and relative educational status are indicative of power in the household bargaining game. In this case, the results suggest that more powerful women are able to assert their own preferences in the allocation of household resources.

7. Summary

There is, then, evidence for gender differences in household resource allocations and these differences may reflect differential returns to investments as well as differences in preferences. As social scientists, we need to delve more deeply into understanding the process underlying household decision-making. How are decisions made and who is likely to gain or lose as the (economic and social) environment changes? Understanding interactions among household members is far from straightforward and it is not at all clear what policy tools may be used to tinker with intra-household allocations. In addition, we know virtually nothing about the relative costs and benefits of these sorts of policies.

Whereas there have been several theoretical advances in this literature over the last decade, empirical evidence is sorely lacking, especially in developing countries. Data that can inform us do exist and need to be examined; to address some questions, new data collection efforts will be necessary. Without a sound understanding of mechanisms affecting the welfare of individuals within the household, however, policies aimed at improving their lot are unlikely to be very successful.