

Economics of the household (family)

Dileni Gunewardena, Gender Training Workshop, Saly, Senegal, Sept 4, 2019

(Based on a note by Shelly Lundberg and Robert Pollack for the Palgrave Dictionary)

<http://apps.olin.wustl.edu/faculty/pollak/Palgrave%20Family%20Decisions.pdf>

Also, Chiappori and Donni (2009) and Quisumbing (2003a, 2003b, 2010).

Structure of presentation

- Economic models of the household or family
 - Unitary model
 - Non-unitary models
 - Cooperative approach
 - Collective approach
 - Non-cooperative approach
- Implications for policy
- Empirical evidence
 - Empirical approaches (identifying)
 - Measures of bargaining power

Models of the household (family)

- 1950s until the 1980s: Unitary approach
 - treating the family as though it were a single decision-making agent, with a single pooled budget constraint and a single utility function that includes the consumption and leisure time of every family member
- The second approach, pioneered by Manser-Brown and McElroy-Horney in the early 1980s, was to model family demands as the solution to a cooperative bargaining game.
- Other non-unitary approaches have been developed, including the "collective" model of Chiappori and various non-cooperative models.

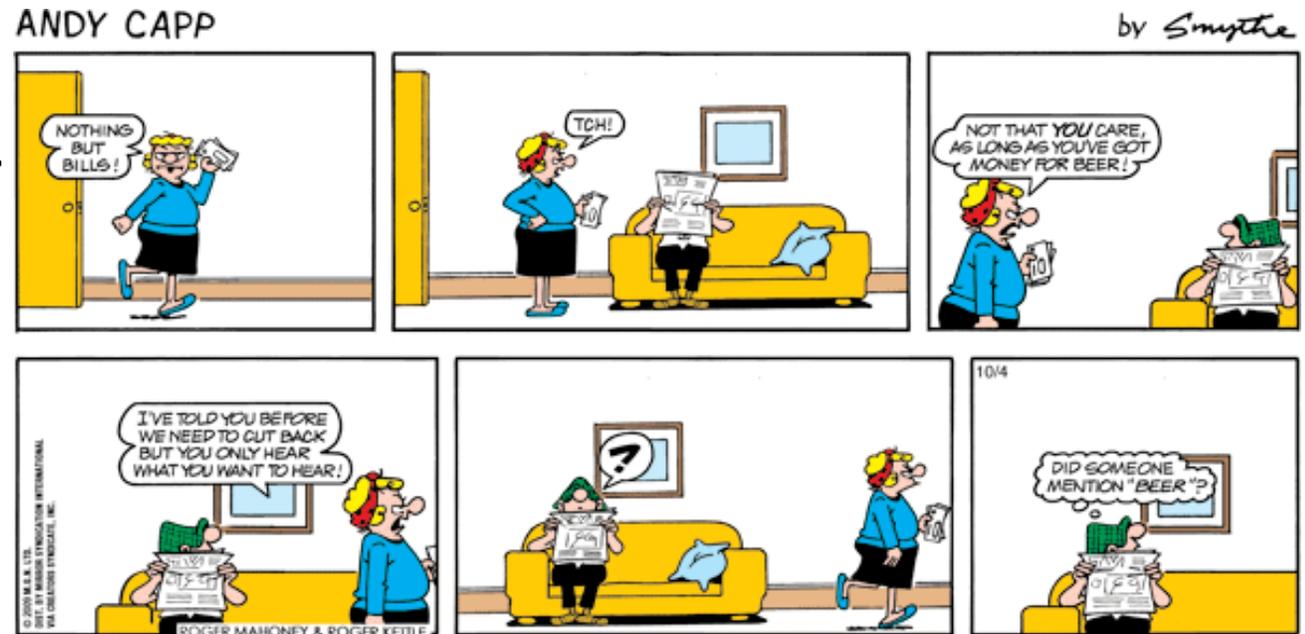
	Bargaining	Non-Bargaining
Cooperative- Pareto efficient	<p>Bargaining power is a function of the outside options of two individuals.</p> <p>Outside option – welfare if not a member of the household.</p> <p>Key policy insight – policies that change outside options affect bargaining power within household. E.g. women’s wages.</p>	<p>Unitary – preferences are identical, and resources are pooled</p> <p>Collective – preferences are different, and modelled</p>
Non- cooperative, Not Pareto- efficient	<p>No enforceable contracts – but actions are conditional on actions of others. HH is the site of largely separate gender-specific economies linked by reciprocal claims on individuals resources (land, goods, labour, income)</p> <p>Net transfers of income (only link) are treated as given; based on that, individual utilities are maximized.</p>	

Unitary models

Two models provide the theoretical underpinning of the unitary, or common preference, approach to family behavior: Samuelson's (1956) consensus model and Becker's (1974,1981) altruist model

Samuelson (1956)

- Two-member family consisting of a husband and a wife.
- Each has an individual utility function that depends on his or her private consumption of goods but, by consensus, they agree to maximize a social welfare function of their individual utilities, subject to a joint budget constraint that pools the income received by the two family members.



Samuelson (1956) contd.

- Their aggregate expenditure pattern can be analyzed as though the family were a single agent maximizing a utility function.
- Household maximizes $U(c^h, c^w)$, where c^h and c^w are the private consumptions of husband (h) and wife (w), subject to the budget constraint $p(c^h + c^w) = y = y^h + y^w$ which pools the individual incomes of husband and wife.
- This problem generates demand functions $c^i = f^i(p, y)$ that depend only on prices and total family income and that have standard properties provided the utility functions are well behaved.
- Samuelson does not explain how the family achieves/maintains consensus.

Becker's altruist model (1974,1981)

- The family consists of a group of purely selfish but rational “rotten kids” and one altruistic parent (‘patriarch’) whose utility function reflects his concern for the well-being of other family members.
 - The presence of an altruistic parent who makes positive transfers to each member of the family is sufficient to induce the selfish kids to act in an apparently unselfish way.
- The altruistic parent must have the ability to monitor and sanction (adjust transfers) so that each “rotten kid” finds it in his interest to choose actions that maximize family income.
 - Issues of information flows as well as control
- The resulting distribution is the one that maximizes the altruist's utility function subject to the family's resource constraint, so the implications of the altruist model for family demands coincide with those of the consensus model.

Problems with the unitary model

- Empirically rejected – income pooling and other features
- Too restrictive for the analysis of a certain number of questions, such as intra-household inequality, economic policies which target certain household members only, or the formation and dissolution of households.
- Dissatisfaction with unitary models on theoretical grounds has been the product of serious study, by economists, of marriage and divorce.
- Models of marriage and divorce require a theoretical framework in which agents compare their expected utilities inside marriage with their expected utilities outside marriage...not possible with the unitary model, because no individual utilities, or they are identical.

Non-unitary models

Each individual in the household has their own individual preferences and a unique household welfare index does not have to be interpreted as a utility function.

Cooperative Bargaining Models

A viable alternative to unitary models of the family must recognize, in a nontrivial fashion, the involvement of two or more agents with distinct preferences in determining family consumption. Bargaining models from cooperative game theory satisfy these conditions.

Cooperative approach

- Individuals have a choice of remaining single or of forming a household or other grouping.
- They choose the latter option when the advantages associated with being in a household outweigh those derived from being single.
- The existence of the household generates a surplus, which will be distributed among its members; the rule governing this distribution is the central issue of the analysis.
 - Unitary models represent a special case of cooperative collective models where preferences are identical and, as a consequence, resources are pooled.

Typical cooperative bargaining model

- A family that consists of only two members: a husband and a wife.
- Each has a utility function that depends on his or her consumption of private goods $U^h(c^h)$ for the husband and $U^w(c^w)$ for the wife.
- If agreement is not reached, then the payoff received is represented by the “threat point” or “exit option”, $(T^h(Z), T^w(Z))$ – the utilities associated with a default outcome of divorce or, alternatively, a noncooperative equilibrium within the marriage.
- The threat point depends, in turn, upon a set of exogenous distribution factors Z .

The Nash bargaining model

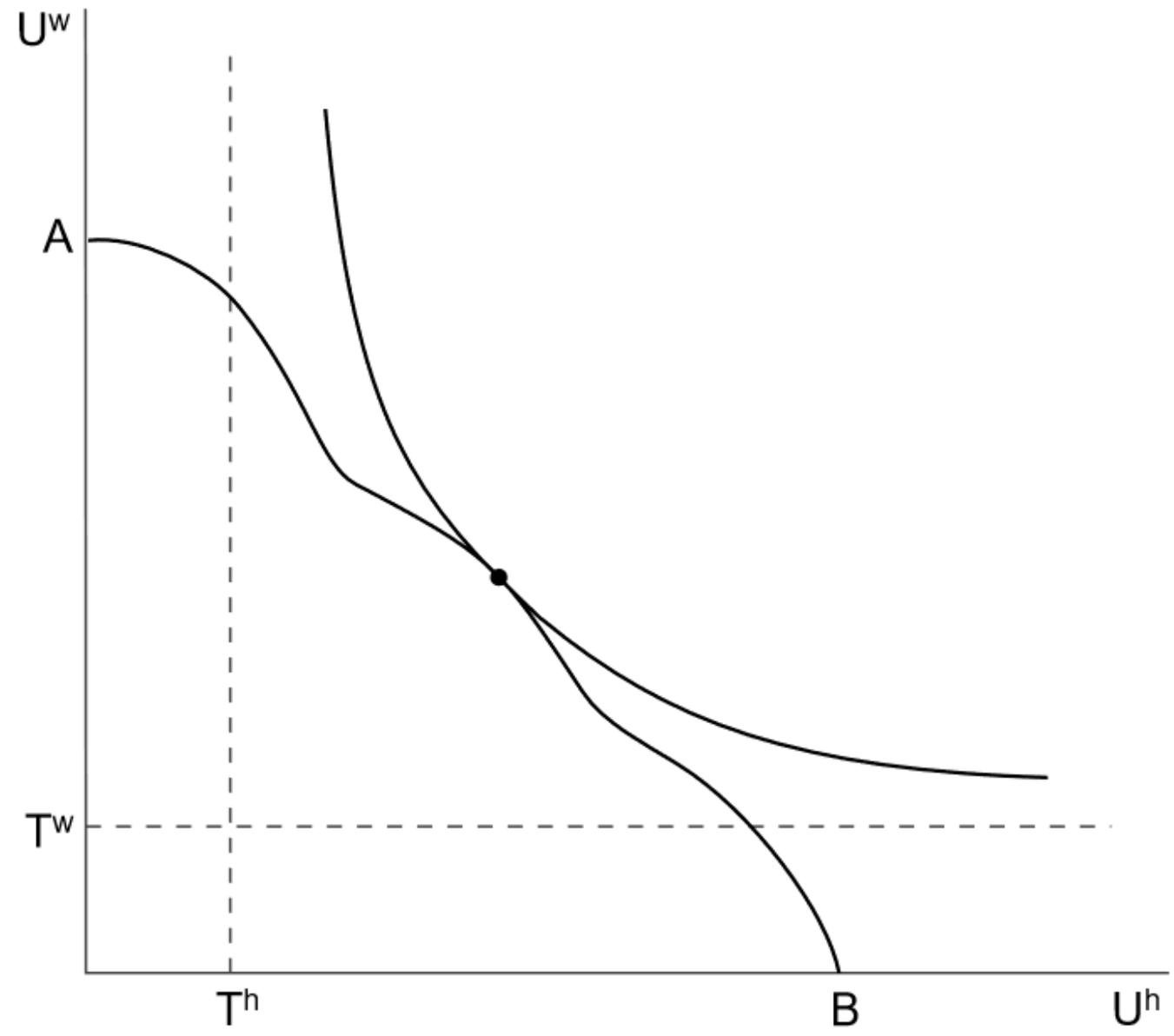
- Provides the leading solution concept in bargaining models of marriage. The couple maximizes the Nash product function

$$N = [U^h(c^h) - T^h(Z)] [U^w(c^w) - T^w(Z)]$$

subject to a pooled budget constraint, and this results in demand functions of the form

$$c^i = f^i(p, y, Z).$$

- Thus, demands and individual utilities depend upon the distribution factors Z , which may include individual incomes y^h and y^w .



Nash bargaining solution and threat point

- Nash (1950) shows that a set of four axioms, including Pareto optimality--which ensures that the solution lies on the utility-possibility frontier-uniquely characterizes the Nash bargaining solution
- The utility received by husband or wife in the Nash bargaining solution depends upon the threat point; **the higher one's utility at the threat point, the higher one's utility in the Nash bargaining solution.**
- This dependence is the critical empirical implication of Nash bargaining models: family demands depend, not only on prices and total family income, but also on **determinants of the threat point.**

Nash's Assumptions

- Symmetricity
- The units don't matter
- Irrelevant outcomes don't matter (outcomes must be feasible)
- Pareto optimality

Relevance of threat point to policy

- Casting allocation among household members as a bargaining problem, Manser and Brown (1980) and McElroy and Horney (1981) have emphasized the influence that outside options (also called “exit options” or “threat points”) are likely to have on spouses’ bargaining power and hence on intrahousehold welfare.
- If this approach is correct, one may hope to affect intrahousehold welfare by improving the exit options of disadvantaged groups.
- To be successful, however, one must first identify the relevant exit options.

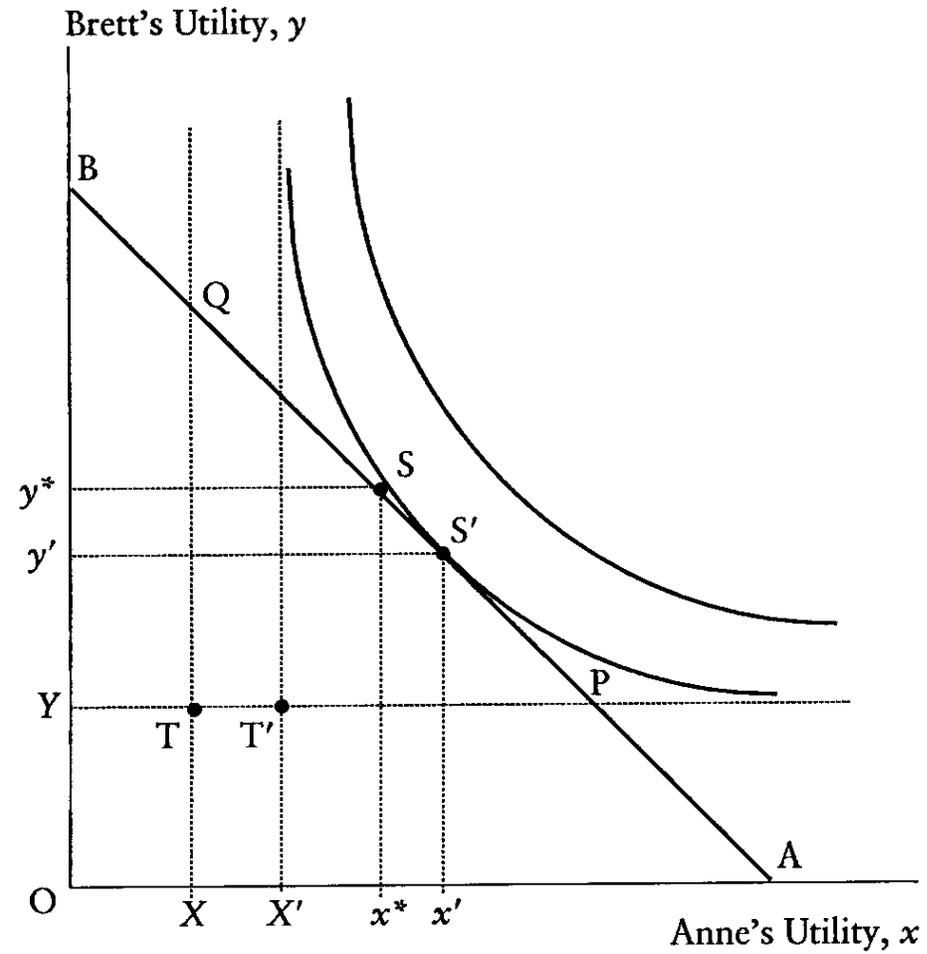


FIGURE 3.5 Illustration of how the Nash bargaining solution changes when Anne's threat utility increases

Outside option 1: Separation from the household (divorce)

- In divorce-threat bargaining models, the threat point is the maximal level of utility attainable outside the marriage.
- If divorcing partners maintain ownership of income received separately within marriage, the demands emerging from marital bargaining will depend not on total family income, but on the income received by the husband and the income received by the wife.
- The divorce threat point is also likely to depend on environmental factors (extrahousehold environmental parameters, or EEP's, in McElroy's (1990) terminology) that do not directly affect marital utility, such as conditions in the remarriage market and the income available to divorced men and women.
- The family demands that result from divorce-threat marital bargaining will therefore depend upon these parameters as well.

Outside option 2: Separate spheres

- In the separate spheres bargaining model of Lundberg and Pollak (1993), the threat point is internal to the marriage, not external as in divorce-threat bargaining models.
- The husband and wife settle their differences by Nash bargaining, but the alternative to agreement is an **inefficient noncooperative equilibrium within marriage**.
- In a noncooperative equilibrium, **each spouse voluntarily provides household public goods, choosing actions that are utility-maximizing, given the actions of their partner**.
- Divorce may be the ultimate threat available to marital partners in disagreement, but a noncooperative marriage in which the spouses receive some benefits due to joint consumption of public goods may be a more plausible threat in day-to-day marital bargaining.

Does it matter? (Eswaran, p. 76)

	Alternative noncooperation scenarios	
Woman's threat utility scenarios	Divorce	Staying in the marriage, but in separate spheres
(a) Good job	Both these scenarios (Z's) will increase her bargaining power and have a similar outcome and not affect the husband's threat utility because they are both going their separate ways Same NBS in both scenarios	Husband's threat utility (level) will increase because wife has stopped doing some of the housework (reduced investment in public goods)
(b) Real estate that earns her nonlabor income		Husband's threat utility (level) decreased because he benefits from some of her nonlabor income – her increased investment in 'public' goods.

Determination of the outside option

- Whether the exit option is of divorce/separation from the household or of the “separate spheres” type depends on extra environmental parameters (EEPs) i.e. **extrahousehold norms such as laws concerning access to common property and prohibitions on women working outside the home.**
 - E.g. Anderson and Eswaran, study in Matlab, Bangladesh

Internal threat point

- Separate spheres bargaining generates family demands that, under some circumstances, depend not on who receives income after divorce, but on who receives (or controls) income within the marriage.
- Lundberg and Pollak assume gender specialization in the noncooperative provision of household public goods, with the husband providing one good out of his own resources, and the wife providing a separate good from her individual resources.
- In this model, certain types of spending belong to the masculine sphere, and others to the feminine sphere. If the couple decides not to cooperate, each household member will carry out the spending in their own sphere, subject to their own budget constraint.

- These decisions lead to a pair of reaction functions that determine a Cournot-Nash equilibrium in which the public goods contributions are inefficiently low, and depend upon the distribution of individual incomes within the family.

Cooperative bargaining does not imply income pooling

- As the divorce-threat and separate spheres models show, cooperative bargaining does not necessarily imply income pooling, i.e. the property that demands depend only on total household income, rather than its separate components.
 - However, unitary models are a special class of cooperative collective models where preferences are identical and as a consequence, resources are pooled.
- Bargained outcomes depend upon the threat point, and the income controlled by husband and wife will affect family behavior (and the relative well-being of men and women within marriage) if this control influences the threat point.

Public policy -- neutral effects?

- This dependence implies that public policy (e.g., taxes and transfers) need not be neutral in their effects on distribution within the family.
- Also, the absence of pooling and the presence of extrahousehold parameters in family demands yield a model that can be tested against the unitary alternative.
- For example, changes in the welfare payments available to divorced mothers, or in laws defining marital property and regulating its division upon divorce, should affect distribution between men and women in two-parent families through their effect on the threat point.

The "Collective" Approach

Pareto optimality and the Unitary model

- Unitary models ensure Pareto optimality by assuming a family social welfare function that is an increasing function of the utilities of all family members: no member can be made better off without making another worse off

Cooperative bargaining models and Pareto optimality

- Cooperative bargaining models characterize the equilibrium distribution by means of a set of axioms, one of which is Pareto optimality.
- Cooperative game theory motivates the assumption of Pareto optimality by assuming that information is relatively good (or at least not asymmetric) and that the players can make binding, costlessly-enforceable agreements.

Pareto Optimality

- Pareto optimality is the defining property of the “collective model” of Chiappori (1988, 1992). Rather than applying a particular cooperative or noncooperative bargaining model to the household allocation process, Chiappori assumes only that equilibrium allocations are Pareto optimal.
- He demonstrates that, given a set of assumptions including weak separability of public goods and the private consumption of each family member, Pareto optimality implies, and is implied by, the existence of a “sharing rule.”

Sharing rule

- Under a sharing rule, the family acts as though decisions were made in two stages, with total family income first divided between public goods and the private expenditures of each individual, and then each individual allocating his or her share among private goods.

Testable restrictions

- The collective framework thus imposes a set of testable restrictions on the observed demands of the household. In essence, the ratio of the marginal propensities to consume any two goods must be the same for all sources of income, because the independent incomes of husband and wife affect consumption only through the sharing rule.
 - A series of empirical tests have found consumption expenditures in households has been found to be generally consistent in this sense with Pareto optimality (eg. Bourguignon, Browning, Chiappori, and Lechene, 1993; Browning, Bourguignon, Chiappori, and Lechene, 1994).

Noncooperative Bargaining Models

Non-cooperative (strategic) models

- Non-cooperative (strategic) models use the Cournot-Nash equilibrium concept. Here, each individual within a household is considered to maximize their own utility, relative to their own budget constraints, taking the actions of other household members as given.
- Noncooperative game theory, in contrast to cooperative bargaining models, does not assume that binding agreements enforce intrahousehold allocations (individuals cannot enter into binding contracts)
- Individuals actions are conditional on actions of others;
- focuses instead on self-enforcing equilibria.

Non cooperative bargaining and Pareto outcomes

- Without binding agreements, much of the motivation for assuming Pareto optimality vanishes.
- It is possible, however, for noncooperative bargaining to yield Pareto optimal outcomes under certain conditions.
 - In general, repeated noncooperative games have multiple equilibria, and Pareto optimal equilibria can often be sustained by the threat of punishment.
- One of the benefits of modeling distribution within marriage as a noncooperative game is the opportunity to treat efficiency as endogenous, potentially dependent upon the institutions and social context of marriage in a particular society and upon the characteristics of the marital partners.

Individuals as autonomous subeconomies

- Households are the sites of largely separate gender-specific economies linked by reciprocal claims on members' income, land, goods and labour.
- Net transfers between individuals are the only link between them.
- When making decisions, individuals takes net transfers as given, and chooses the goods that he or she will consume to maximize individual utility, rather than the utility of the household unit.
- The empirical challenge lies in testing whether or not such differentials are consistent with a unitary model of the household or with a decisionmaking process in which different household members have different preferences and varying abilities to enforce these.
 - If the unitary model does not hold, then policymakers have additional levers with which to influence intrahousehold outcomes.

Are families / households inefficient?

- The prevalence of destructive or wasteful phenomena such as domestic violence and child abuse as well as the demand for marriage counseling and family therapy, suggests that we consider the possibility that family behavior is sometimes inefficient.
- Other researchers have pointed to gender segmentation in the management of businesses or agricultural plots in many countries as evidence of an essentially noncooperative, and possibly inefficient, family environment.
 - One piece of evidence is provided by Udry (1995), who finds that the household allocation of resources to male- and femalecontrolled agricultural plots in Burkina Faso is inefficient.

Intertemporal Models

Dynamic bargaining models

- In dynamic bargaining models with investment, decisions made in one period can alter the relative bargaining power of individual family members in future periods.
 - Several papers have shown that limited commitment in this situation can lead to inefficient allocations of household resources.
 - Lundberg and Pollak [2001] use a two-stage model of a married couple's location decision to show that marital decisions that affect future bargaining power need not be efficient unless the husband and wife can make binding agreements regarding their future actions.
 - Aura [2001] examines a married couple's consumption and savings choices when they are unable to commit to not renegotiate their decisions in the future, and the efficiency implications of different divorce asset division regimes.

Empirical evidence

Empirical evidence against the unitary model

- A body of empirical evidence suggests that the restrictions imposed on demand functions by common preference models are not well-supported.
- Rejections of the family income pooling assumption have been most influential in weakening economists' attachment to unitary models.
 - The fraction of income received or controlled by one family member should not influence demands, conditional on total family income. A large number of recent empirical studies have rejected pooling, finding that earned and unearned income received by the husband or wife significantly affect demand patterns when total income or expenditure is held constant.
 - Some studies find that children appear to do better when their mothers control a larger fraction of family resources (Thomas, 1990; Hoddinott and Haddad, 1991).

Test of pooling hypothesis

- A test of the pooling hypothesis requires a measure of husband's and wife's relative control over resources.
 - Relative earnings would seem to be an attractive candidate for this measure, since labor income is by far the largest component of family income, and earnings data are readily available and reliably measured.
 - The difficulty with this approach is that earnings are clearly endogenous with respect to the household's time allocation decisions, so that households with different ratios of wife's earnings to husband's earnings are likely to face different prices and may have different preferences.

Unearned income

- One might try to avoid these problems by testing the pooling of unearned income rather than earnings.
 - Unearned income is not contaminated by price effects, but most unearned income sources are not entirely exogenous with respect to past or present household behavior.
 - Furthermore, variations in unearned income over a cross-section are likely to be correlated with other (possibly unobservable) determinants of consumption.
 - For example, property income reflects, to a considerable extent, accumulated savings and is therefore correlated with past labor supply and, if those who worked a lot in the past continue to do so, current labor supply.
 - Public and private transfers may be responsive to household distress due to unemployment or bad health, and may be related to expenditures through the events that prompted them (Schultz, 1990).
 - Unexpected transfers such as lottery winnings, unexpected gifts, or unexpected bequests will affect resources controlled by individuals without affecting prices, but are likely to be sporadic and unimportant for most families.

Testing a pooling hypothesis – natural experiment

- The ideal test of the pooling hypothesis would be based on an experiment in which some husbands and some wives were randomly selected to receive an income transfer.
- A less-than-ideal test could be based on a “natural experiment” in which some husbands or some wives received an exogenous income change.
 - Lundberg, Pollak, and Wales (1995) examine the effects of such a natural experiment--the policy change in the United Kingdom that transferred a substantial child allowance from husbands to wives in the late 1970s. They find strong evidence that a shift towards relatively greater expenditures on women’s goods and children’s goods coincided with this income redistribution, and interpret this as a rejection of the pooling hypothesis.

Terms and concepts

Exclusive goods, private goods and public goods

- Private goods are those where consumption can be associated with a specific individual – q_A^k is the quantity of the k^{th} good consumed by individual A, q_B^k by individual B.
- Public goods Q^k are publicly consumed.
- Any good k could have a public or private component.
- good k is purely private if $Q^k = 0$;
- good k is purely public if $q_A^k + q_B^k = 0$.
- If only one person consumes a good in the household, it is then classified as an exclusive good.

Distribution factors

- Distribution factor is any kind of variable that reflects the household environment.
- Similar to extra-environmental parameters (EEPs) in the terminology of McElroy (1990, 1997).
- They affect the household decision making process without affecting preferences or the budget constraint.

Examples of distribution factors

- Indonesian data showed that distribution of income at the time of marriage has an impact on the subsequent health of children (Thomas, Contreras and Frankenberg 2004)
- Changes in the amount of support to single women with children (AFDC) in the U.S. affected consumption and labor supply of couples with children (Rubalcava and Thomas 2005).
- Pension recipient's gender important for consequences of transfer on children's health (Duflo 2000).
- Legislative aspects (right of women to possess land, participate in the labor market, protected against domestic violence etc.) Folbre (1997).

Examples of distribution factors

- Share of male and female labor earnings in total household income – proportionality condition is not rejected in the majority of empirical work.

Measuring bargaining power

Bargaining power is affected by:

- (1) control over resources, such as assets;
- (2) factors that can be used to influence the bargaining process;
- (3) mobilization of interpersonal networks; and
- (4) basic attitudinal attributes.

Resources exogenous to labor supply as major determinants of bargaining power

- Assets (for example, Quisumbing 1994; Doss 1996; Thomas, Contreras, and Frankenberg 1997)
- Unearned income (Schultz 1990; Thomas 1990)
- Transfer payments and welfare receipts (Lundberg, Pollak, and Wales 1997; Rubalcava and Thomas 1997).
- The threat of withdrawing both oneself and one's assets from the household grants the owner of those assets some power over household resources.
- These threats are credible if supported by community norms or divorce laws.

Measures of bargaining power

- Thomas, Contreras, and Frankenberg (1997) use **assets at marriage** as an indicator of bargaining power because in most of Indonesia, spouses can take what they brought into the marriage with them were the marriage to dissolve.

Distribution factors

- Factors that can influence the bargaining process include legal rights, skills and knowledge, the capacity to acquire information, education, and bargaining skills.
- Many of these factors are highly correlated with the individual – e.g. human capital or education.
- Domestic violence can be used to extract resources from spouses or their families, as in the case of dowry-related violence in India (Rao 1997; Bloch and Rao 2002).

Personal networks as distribution factors

- Individuals can also mobilize personal networks to improve their bargaining power.
 - Membership in organizations, access to kin and other social networks, and social capital may positively influence a person's power to affect household decisions.

Attitudinal attributes as distributional factors

- Basic attitudinal attributes that affect bargaining power include self-esteem, self-confidence, and emotional satisfaction.
- While the economic literature has not dealt extensively with this issue, part of the success of group-based credit programs such as the Grameen Bank has been attributed to its group-based empowerment approach.
- Many nongovernmental organizations (NGOs) have explicit empowerment objectives that go beyond economic means to include legal awareness, political participation, and use of contraception (Schuler, Hashemi, and Riley 1997).

Relevance of intrahousehold
issues to policy

Unitary or non-unitary? Why it matters for policy

- If household members in fact have different preferences, resources, and responsibilities, then designing policies while relying on a model of the household that assumes that individuals share the same preferences and pool their resources—the unitary model—may lead to policy failures (Haddad, Hoddinott, and Alderman 1997).
- The effect of public transfers may differ depending on the identity of the income recipient.
- Households may reallocate resources away from the transfer recipient to compensate for the transfer receipt.
- Policy initiatives and information addressed to one person in the household may not be shared with other household members.
- And assuming that households act as one disables many policy levers that could be brought to bear on development problems.

- Both unitary and collective models permit existing intrahousehold resource allocation rules to affect household responses to public policy.
- Although both models allow public policy to change intrahousehold allocations of a good, however, only the collective model permits public policy to affect the **rules** of intrahousehold allocation.

Assuming unitary model leads to policy failure:

- The effect of public transfers may differ depending on the identity of the income recipient.
 - If transfers directed to the husband or the wife have different impacts, for example, targeting transfers to the household may not result in the desired outcomes.
- Public transfers may affect the behavior of nonrecipients of the income transfer.
 - If households reallocate resources away from the transfer recipient to compensate for the transfer receipt, the intended effect of the income transfer may not be realized. E.g. public social security scheme might lead to a reduction in private urban-rural remittances from the young to the old.

Increasing the resources controlled by women has beneficial effects in a number of areas.

- In agriculture, a redistribution of resources in favor of women increases yields or leaves them unchanged, meaning that equity gains can be achieved without sacrificing efficiency.
- Improvements in women's status and increases in the resources that women control raise allocations toward education and improve child health and nutrition.
- Social networks may also be an important resource that women can use to help mitigate the impact of adverse shocks.
- Lastly, investment in women, particularly in education, is key to poverty reduction and improved incomes for families as a whole.

Differential effects of men's and women's resources

- The identity of the transfer recipient does affect the ultimate outcome of the intervention.
- Across countries, the most consistent effect is that relative resources controlled by women tend to increase expenditure shares on education, but the mechanisms through which men's and women's resources affect individual outcomes differ substantially across the case studies.
- The differential effect of parental resources on children of different genders provides further evidence that households in developing countries are not operating within a unitary framework.

Measuring bargaining power (contd.)

- In four countries— Bangladesh, Ethiopia, Indonesia (Sumatra), and South Africa—Quisumbing and Maluccio (2003) find that men bring more assets to marriage, in terms of both physical and human capital, than do women.
- Smith et al. use data from 40 Demographic and Health Surveys in developing countries to construct an index of women's relative decision making power within the household and of societal gender inequality.
 - They find that women tend to be less educated than their husbands, with the difference being greatest in South Asia and the smallest in Latin America. Women marry at younger ages in South Asia and at older ages in Latin America.
 - Differences in the preferred numbers of girls and boys by region are similarly largest in South Asia and smallest in Latin America, and it is also in South Asia where boys are most preferentially treated with respect to preventive health care. This evidence suggests that son preference may be greater in countries where women have lower status.

Gains from Increasing Women's Control of Resources

- Reducing inequalities in human capital, physical capital, and current inputs between male and women farmers in Sub-Saharan Africa has the potential to increase agricultural productivity by 10–20 percent (Alderman et al. 2003)
- The greater a woman's asset holdings at marriage, the larger is the share the household spends on children's education (Quisumbing and Maluccio 2003)
- In Bangladesh a higher share of women's assets is associated with better health outcomes for girls (Hallman 2003)
- Improvements in women's decisionmaking power within the family and society can significantly reduce child malnutrition rates (Smith et al. 2003)

Social capital investments

- Social capital—features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit— differs across men and women.
- Evidence from South Africa suggests that women’s social capital networks are wider than men’s but mobilize fewer resources.
- Women’s contacts also tend to be among women, and men’s among men.
- Returns to men’s and women’s social capital appear to be identical in terms of their effects on household welfare (proxied by per capita expenditure), although household welfare is more responsive to women’s social capital because of the higher level of women’s participation in groups (Maluccio, Thomas, and Haddad 2003).

Women's schooling

- Simulations using data from women farmers in Kenya suggest that yields could be increased by 25 percent if all women attended primary school (Quisumbing 2010).
- Smith and Haddad (2000) using cross-country data found that increases in women's education have made the greatest contribution to reducing the rate of child malnutrition, being responsible for 43 percent of the total reduction.
- Where women do not face barriers to nonfarm employment, investments in girls' schooling result in higher probabilities of employment in the nonagricultural sector and higher lifetime incomes (Quisumbing, Estudillo, and Otsuka, 2003).
- in Bangladesh, there is some evidence that the Food for Education Program led to delayed marriage, with important implications for women's life opportunities (Arends-Kuenning and Amin 1998, cited in Smith et al. 2003).

Property rights

- Property rights are especially important in determining women's fallback options should they be divorced or widowed— and indirectly, their bargaining power within marriage.
 - In Ethiopia, for example, the share of household assets—land and livestock—that a woman brings to marriage is a key determinant of her share should the marriage end in divorce (Fafchamps and Quisumbing 2003).
 - Whereas many countries have promulgated statutory laws to reform discriminatory customary practices, they have often had unintended effects or were never implemented.
 - If women are poor and uneducated, they may not be aware of the provisions of the law.

New crops and technologies

- New crops and technologies that increase the demand for women's labor in agriculture may improve their bargaining power and strengthen their claim over land, as illustrated by the experience of cocoa farmers in western Ghana (Quisumbing et al. 2001a)
 - Such trends can be supported by legislation that strengthens women's land rights.
 - Men and women should be equally qualified to acquire land titles.
 - Women also need to be made aware of their legal rights and empowered to claim them.
- Attempts to increase women's incomes or agricultural productivity, however, by equalizing land rights of men and women will succeed only if other constraints faced by women, such as lack of access to credit and other inputs, limited access to extension services, and low levels of education

Programs and Policies to Increase Women's Resources

- Public policies to increase women's resources and improve women's status are of two types: (1) policies that aim to eradicate discrimination and (2) policies that promote more active "catch-up" in women's status by explicitly targeting women (Smith et al 2003).
- Sometimes, evaluations may miss the bigger picture or unintended consequences
 - Evaluation of the technology transfer programs in Bangladesh found only modest contributions to household income (Bouis, 2003).
 - But it was not the vegetable technology package but credit from the nongovernmental organization (NGO) that increased women's bargaining power within the household; opportunities to earn income outside the home strengthened women's position in society and the community (Naved, 2003).

Qualitative studies

- In the evaluation of a large income transfer program in Mexico (Adato et al., 2003), the findings from the qualitative study were essential to correct interpretation of the results from the quantitative study.
 - The changes brought about by the program were too subtle to be captured fully by the quantitative questionnaire, even if the quantitative analysis found that the program significantly affected couples' decisionmaking in a few key areas.
- unintended consequences of interventions—impact on time use and child care, for example (Paolisso 2003; Cooke St. Clair 2003) that may result even from an intervention that was designed with intrahousehold allocation processes in mind.

Public policies to eliminate discrimination

- The effects of public policies to eliminate discrimination are more difficult to evaluate over the short term.
- A longer-term perspective is essential.
 - A study that tracked gender differences in land inheritance and education over three generations in Ghana, the Philippines, and Sumatra shows that, over the long term, policies to eradicate discrimination may increase lifetime incomes for women and provide benefits to their families (Quisumbing, Estudillo, and Otsuka 2002)

Implications for future research

- Both social norms and control of resources matter in intrahousehold allocation
 - Social norms set the context of intrahousehold negotiation over labour and other resources including the sharing of resources within the household
 - E.g. of Anderson and Eswaran, Matlab in Bangladesh, where control over income mattered more than working outside the home, because (a) of lack of a labor market for women linked to (b) purdah
- Assets are important – for bargaining power as well as development outcomes, but much that is not known about assets:
 - Interactions between different types of assets, ways that men and women obtain access to and control of assets, importance of assets beyond physical assets and human capital

Effect of social norms in otherwise similar cases

- Amartya Sen (1990) *Gender and Collective Choice*
 - Individual self-interest is not often well-defined – socialization can mold preferences and people in a disadvantaged position may not think they are.
- Babcock and Laschever (2003)
 - Women may not ask for what is their rightful due – even if outside options are not different, the outcomes may be different
- Bowles, Babcock and Lai (2007)
 - Payoffs must include the negative reactions that women may face when they violate gender-normative roles
 - *Social norms matter*

Assets are important – for bargaining power as well as development outcomes

- Food security, child nutrition and education, women's own well-being
 - Bangladesh – higher share of women's assets associated with higher expenditure on education and better health outcomes for girls
 - Cross-country data – women's education had the greatest impact on reducing child malnutrition
 - There may be efficiency gains in increasing women's control of resources
- Women's claim to land can increase their security
 - But existing efforts have only served to increase men's claims [more here****]

Much that is not known about assets

- Complementarities/interactions between types of assets
 - Land, physical capital, human capital, social capital
- Gender differences in access to assets/asset endowments
- Marital and inheritance regimes and risk of asset loss at death or divorce
- Governance arrangements
- Infrastructure investments (India – drinking water and roads)

Assuming unitary model leads to policy failure:

- At the project level, the unitary model predicts that it does not matter to whom policy initiatives are addressed, since information, like other resources within the household, will be shared.
 - Numerous examples, however, many from Sub-Saharan Africa, have shown that targeting one individual rather than the other has led to non-adoption of particular policies or to unintended consequences of policies adopted.
- Adherence to a unitary model of the household eliminates many potential solutions to development problems.
 - The unitary model predicts that household behavior can be changed only by changes in prices and household incomes. In contrast, the collective model posits that a large range of policies can be used to affect household allocation outcomes, such as changes in access to common property resources, credit, public works schemes, and legal and institutional rights.

Extra slides