

# Intrahousehold Bargaining and Resource Allocation in Developing Countries

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## Abstract

Many key development outcomes depend on women's ability to negotiate favorable intrahousehold allocations of resources. Yet it has been difficult to clearly identify which policies can increase women's bargaining power and result in better outcomes. This paper reviews both the analytical frameworks and the empirical evidence on the importance of women's bargaining power. It argues that there is sufficient evidence from rigorous studies to conclude that women's bargaining power does affect outcomes. But in many specific instances, the quantitative evidence cannot rigorously identify

causality. In these cases, a combination of quantitative and qualitative evidence may suggest policy levers. Taken together, there are sufficient data in place to support a greatly expanded focus on intrahousehold outcomes and bargaining power. Additional data at the individual level will allow for further and more detailed research. A growing literature supports the current conventional wisdom—namely, that the patterns of evidence suggest that women's education, incomes, and assets all are important aspects of women's bargaining power.

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# **Intrahousehold Bargaining and Resource Allocation in Developing Countries<sup>i</sup>**

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## **Intrahousehold Bargaining and Resource Allocation in Developing Countries<sup>ii</sup>**

Over the past several decades, development policy makers have grown increasingly aware of gender issues in development. One of the central messages they have absorbed from research on gender is that many key development outcomes seem to depend on women's ability to negotiate favorable intrahousehold allocations of resources. The development literature suggests that women's bargaining power within households is linked to variables such as the health and education of children and the general well-being of women and girls. In addition, women's bargaining power may affect many aspects of household production, including the allocation of labor to various activities, including home work, agricultural work, and wage work. Since the 1980's, researchers and practitioners have been making the case that the dynamics of household decision making and resource allocation play a central role in mediating the impact of many projects and policies.

In response to these concerns, academics have developed a number of theoretical models of the household and have done extensive empirical work to understand intrahousehold bargaining processes. But policy makers find it difficult to digest this literature -- and in particular to absorb the implications for project planning and evaluation. This paper examines the quantitative empirical literature on intrahousehold resource allocation. The paper explains why the literature has struggled to arrive at definitive conclusions, and it identifies lessons and implications for policy makers.

The paper begins by reviewing the analytical frameworks for intrahousehold issues. Because this intrahousehold literature is quite heterogeneous, it is useful to look in each instance at the "players" in the bargaining negotiations. In addition to bargaining between spouses, there

can be bargaining between parents and children and various other members of the household. The academic literature has focused on finding rigorous ways to demonstrate causality, and the next section focuses on the challenges of proving causation rather than simply correlation. Next, the paper turns to the empirical measures of bargaining power that have been used, followed by a discussion of the types of outcomes that have been shown to be affected by women's bargaining power. A central question is how different outcomes are affected by women's bargaining power. The paper concludes by explaining how the findings can be used by policy makers.

### **Frameworks for empirical work on intrahousehold issues:**

A range of empirical research focuses on issues of intrahousehold bargaining, resource allocation, and decision-making. While some research *explicitly* analyzes intrahousehold bargaining, other research *implicitly* considers bargaining while examining the impact of a variety of factors on household outcomes. In broad terms, the research falls into four categories: 1) tests of the unitary model of the household; 2) tests of efficiency in household allocations; 3) empirical estimates of the determinants of resource allocation within the household; and 4) experiments that are designed to provide understanding on the processes of intrahousehold decision-making. Each of these different strands of literature asks different questions and thus offers different information.

#### *Testing the Unitary Model of the Household*

Early models of the household assumed a unitary framework; in other words, they treated the household as a single production or consumption unit. This simply assumes away all of the dynamics of decision-making within the household. Generally speaking, a unitary model implies

that the distribution of income or assets or other measures of bargaining power within the household (holding all else constant) does not affect outcomes. Qualitative research and field experiences challenged these notions, and theoretical models were developed that use a bargaining framework. An extensive literature developed to demonstrate the variety of circumstances under which the unitary model did not hold.<sup>iii</sup>

Initial work focused on demonstrating that the unitary model was not appropriate by testing its predictions. Typically, these papers presented evidence that the outcomes of households' decisions were affected by the allocation of resources within the household in ways that violate the predictions of the unitary model. For example, the unitary model predicts that outcomes of household decisions should depend only on total household income and should not be affected by individual shares of income. In 1995, Alderman, Chiappori, Haddad, Hoddinott and Kanbur argued that it was time to "shift the burden of proof." At that point, they claimed that there was sufficient evidence against the unitary model of the household that anyone who used it should be expected to justify that it was appropriate for that particular situation.

New theoretical work developed three broad categories of models of household decision-making: cooperative bargaining models, collective models and noncooperative bargaining models.<sup>iv</sup> Cooperative bargaining models use a game theoretic model of the household in which bargaining power is a function of the outside options of the two individuals bargaining. The individual's outside option is the welfare that he or she would receive if not a member of the household. The critical insight that these models offer is that policies that change the outside options of individuals will affect their bargaining power within the household -- and thus affect outcomes. For example, a policy that increases women's wages may increase women's bargaining power within the household, whether or not the woman actually works in the paid

labor force. Similarly, strengthening women's rights upon divorce gives women more bargaining power within marriage.

Cooperative bargaining models are a subset of models broadly labeled collective models. They assume that households can at least achieve Pareto efficiency; in other words, that the outcome is one in which no one could be better off without making someone else in the household worse off. In collective models, the sharing rule can be identified from the data, allowing for different preferences and various outside factors to affect this rule. These collective models provided insights into how to test and reject unitary models.

#### *Testing for Efficiency*

A final broad category of household models consists of noncooperative models. These do not assume that the household reaches Pareto efficient allocations in either production or consumption; instead this literature offers a framework for testing whether or not households attain these efficient allocations. A series of empirical papers have tested the efficiency assumptions of both the cooperative bargaining models and the collective models. Some of these papers explicitly use a noncooperative bargaining model to motivate the tests; others skip the noncooperative models and go directly to testing for Pareto efficient or cooperative outcomes. The tests may focus on either production or consumption decisions.

A general finding from this literature is that the unitary model typically fails to explain household decisions; bargaining power and other factors within the household frequently affect the outcomes of household decisions. The unitary model is not always rejected completely. Studies in some contexts support collective models that assume efficiency in allocation (e.g., Bobonis 2009, Chen 2009, Quisumbing and Maluccio 2003); other analyses would only be

consistent with noncooperative bargaining models (e.g., Udry 1996, McPeak and Doss 2006, Katz 1995).

#### *Determinants of household decision-making and resource allocation*

A larger set of empirical papers examine the determinants of resource allocation within the household. Most of these do not explicitly use a theoretical model of household bargaining to frame their questions. Frequently, these studies simply include gender-linked variables as potential determinants of household outcomes. Many of these studies include measures that would be considered indicators of women's bargaining power, such as land rights (Allendorf 2007) or asset ownership (Beegle et al 2001; Quisumbing 1994). They provide empirical evidence on the influences on intrahousehold resource allocation.

#### *Experimental games:*

A relatively new area has been to use experimental games to understand how decisions are made within households. These games allow researchers to test how different levels of resources and communication can affect decisions. While it may be a challenge to extrapolate from the experimental setting to predict real world outcomes, these do provide some insights into the processes of decision-making, which can be difficult to observe outside an experimental setting.

One such game is reported by Iverson et al (2006), who examine trust and contributions between a husband and wife in Uganda. Initially, each couple received US\$ 4000. For each participating couple, it was randomly decided whether the amount was given entirely to the husband, entirely to the wife, or split evenly. Then each partner made a contribution to a



common pool, and the total contributions to the pool were increased by 50%. The pool was then allocated between the spouses. It was randomly chosen whether the husband or wife got to decide how to allocate the money or whether it was split evenly between them. The two random assignment components of the game make it possible to identify the effects. The authors find that couples do not maximize surplus; a greater proportion of the surplus was realized when women are in charge of the cooperative account.

Another study randomizes the level of communication between the spouses in a game setting in the Philippines (Ashraf 2009). Subjects were given a sum of money and asked either to deposit the money in an individual account or to receive a certificate for spending on a particular category of goods. Couples were randomly assigned to one of three groups. In one group, information on financial decision-making was kept private from the spouse. In a second group, spouses knew one another's options and eventually learned their decisions, but they made their decisions simultaneously without communication. In the third group, spouses were able to discuss and negotiate before making their decisions. The researchers found strong evidence of strategic behavior between spouses. This study suggests ways that, in a controlled setting, researchers can randomize the information that each spouse has and thus make direct observations of the intrahousehold bargaining process.

The evidence that spouses behave strategically demonstrates that it is important for policy makers to consider how policies and projects will affect behavior within households. It should not simply be assumed that households will make a decision that maximizes total household resources.

## Who Is Bargaining?

Although households, especially in rural areas in developing countries, often include multiple adults involving several generations, the theoretical models usually only include two decision-makers. And while these two decision makers would not have to be a husband and wife, often there are elements of the model which implicitly or explicitly assume that this is the case. The same is true in empirical studies, which often look only at bargaining between two individuals, usually husband and wife. Other dimensions of household structure are simply absorbed by control variables for household characteristics. Thus, the literature often implicitly assumes that within multi-member households, the only bargaining is between the husband and wife; other members are assumed to be passive or unimportant to the bargaining process.

Frequently, households that are *not* headed by a couple are dropped from the sample. This is expedient in that it allows for analysis of bargaining between the husband and wife, but it may critically assume away many other important facets of women's bargaining power. Men and women who never marry or are divorced might be expected to be different from those who are married and to have different access to resources. For example, in an analysis of improved maize technology adoption in Ghana, Doss and Morris (2000) find that while women farmers are less likely to adopt improved varieties of maize and fertilizer, the gender differences in adoption are explained by gender-linked differences in access to complementary inputs. However, in female-headed households, women are less likely to adopt improved varieties, even after controlling for these other factors. Thus, women farmers in male-headed households appear to be able to bargain within their households to obtain some of the unobservable factors that are needed to adopt these technologies. Those in female-headed households are not able to

do so. If only couple-headed households had been included in the analysis, this insight would not have emerged.

Although it would be possible to use a bargaining framework to analyze households that had two decision makers who are not a couple, such as an adult child and older parent, or two siblings, another set of implicit assumptions makes this difficult. When examining the impact of bargaining power on outcomes, the patterns are only visible if we have a way to compare across groups. Ideally, we are interested in whether the individual who has more bargaining power is able to obtain his or her preferred outcome, but information on preferred outcomes is rarely available. Instead, analyses typically assume that men and women have different preferences regarding outcomes and empirically demonstrate that outcomes differ depending on the levels of women's bargaining power. If men and women had the same preferences, then differential bargaining power between men and women would not affect outcomes. Thus, in order to analyze the impacts of bargaining, people must be grouped by preferences. Since preferences are not readily observed, the literature is relying on the assumption – not obviously well-founded -- that preferences are systematically related to gender. It could be possible to make similar assumptions for adult children and a parent, given sufficient sample sizes; adult children and their parents may have different preferences, even when they live together. For the most part, however, the literature focuses only on gender differences as a proxy for differences in preferences.<sup>v</sup>

The literature on intergenerational transfers is one of the few areas where the analysis does not always focus on bargaining between husband and wife. For example, Jensen (2004) analyzes what happened to transfers from adult children to elderly parents after the end of apartheid in South Africa – a moment when elderly blacks began receiving a state pension.

Although he does not explicitly discuss this as a bargaining issue between children and parents, he analyzes the extent to which children continue to provide transfers to their parents once the parents receive a state support. He finds that each rand of public pension to the elderly reduced the transfers from their children by 0.25-0.30 rand. Thus, one interpretation is that parents and children bargain over transfers and the benefits of the program are shared.

Yet, much of the research that focuses on bargaining within married couples has significant intergenerational implications. The decisions about how much education or health care to provide to individual children or how to bequeath other assets across generations have significant implications for the intergenerational transmission of poverty and the potential for upward mobility across generations. But the children are not typically modeled as actors in these scenarios.

A number of researchers have emphasized that simply analyzing the bargaining power of women within the household ignores the bargaining that takes place at the broader level, within the kinship network, community, or nation. Folbre (1994) encourages us to examine the broader structures of constraint that shape the choices that men and women make: “Constraints are defined here as the assets, rules, norms and preferences that delimit what people want and how they can go about getting what they want” (p.54). Time and money are the most basic assets in her understanding. But she insists that rules and norms are important to understanding the choices that people make. Similarly, Agarwal (1997) lists four dimensions that have been neglected in the bargaining literature, including “the inter-related nature of bargaining within and outside the household, the embeddedness of households within a wider institutional environment, and the role of groups/coalitions as determinants of bargaining power” (p. 37). Goldstein and Udry (2008) examine the power of individuals within the community and demonstrate that

power impacts whether the individual has secure tenure to land and thus, whether they fallow the land at efficient levels. Changing community norms and institutions will impact household decisions, whether or not they are explicitly included in an empirical analysis. If they are not included in the analysis, the results may be incomplete or misleading.

### **Identifying bargaining power**

It is not possible actually to measure women's bargaining power. Bargaining power is fundamentally unobservable. At best, we can find good proxies for women's bargaining power. Which proxies are useful depend on the questions at hand. There are many good indicators of women's bargaining power; i.e., measures that are correlated with bargaining power. But often we want to understand the causal relationships, so that we know how to effect change. The challenge is to understand when we have identified causal relationships and when we have only identified correlations.

One goal of the empirical literature on women's intrahousehold bargaining power is to provide policy guidance on effective policy instruments that can strengthen women's position or achieve other desired outcomes. This is a task that requires unraveling the complicated channels of causation that link interventions to outcomes, so that we determine which measures can influence policy. A clear picture of the causal relationships fundamentally depends on the rigor of the estimation techniques applied. To identify the causal effects of policy or other interventions on outcomes through women's bargaining power, three approaches are used.

### *Institutional Changes*

The first approach is that of a “natural experiment.” Specifically, the researcher uses a change in policy or some factor outside of the control of the household or community as a “before and after” experiment to reveal the impact of the intervention on outcomes. Women’s legal rights are one such set of changes. For example, Rangel (2006) considers a change in marriage law in Brazil. The new law extended alimony rights and obligations to couples living in consensual unions. Rangel treats this legal change as redistributing bargaining power in favor of women. The author compares hours worked by female adults and investment in children’s education in households composed of married couples (which were not affected by the law) with the same variables in households composed of cohabiting couples (which were affected by the law), before and after the implementation of the law. The change in the law resulted in more leisure for women and a reallocation of resources towards the schooling of older girls.

Deininger et al. (2010) study a change in inheritance law in two Indian states, Maharashtra and Karnataka, which elevated the status of daughters with respect to inheritance of family land, making their rights equal to those of sons. The educational attainment of women whose fathers died before the change in the law was compared to those of women whose fathers died after the reform. The change in the inheritance regime had a positive impact on girls’ schooling. Adam et al. (2003) compare suicide rates among married and unmarried women before a family law reform in Ontario, Canada, that improved women’s financial position upon divorce. The change in legislation reduced suicide rates among older, married, women, while not affecting younger, unmarried women. There was no impact on male suicide rates.

Thus, all three of these studies demonstrate a causal relationship between a policy that increased women's bargaining power and desired outcomes, including increased children's education and lower suicide rates.

Prices and other market forces can also generate exogenous changes. Qian (2008) analyzes exogenous changes in men's incomes from orchard-based crops and women's incomes from tea in China. She compares the sex ratios and educational attainment of boys and girls in cohorts born in tea planting communities with the same variables in non-tea planting communities, before and after the agricultural reforms. Counties with more tea had higher ratios of girls to boys; those with more orchards had lower ratios. Thus the survival rates of girls were higher when women had more bargaining power due to higher incomes.

Changes in sources of income that are outside of the realm of household decision-making are also used. Duflo (2003) explores the fact that eligibility to participation in a cash transfer program in Africa targeted at elder citizens was discontinuous at age 60 for women and 65 for men. Comparing children's health status in households with an eligible elder to those with an elder member not yet eligible, the author finds that income directed to women has positive effects on children's well-being, whereas income that goes to men has no effect. Jensen (2004) uses the same policy shift to examine transfers from adult children to elderly parents.

In all these cases, the exogenous shift in female bargaining power translated into positive outcomes for women and their children. These case studies provide important demonstrations of the pathways through which increases in women's bargaining power has a positive impact.

### *Instrumental Variables Approach*

A second methodological approach is to find instrumental variables that correlate with the measure of bargaining power but not directly with the outcome measure. Many of the studies discussed throughout this paper that use income or assets as an indicator of bargaining power use this approach. Several authors use rainfall patterns as an instrument for agricultural production (Doss 2001b; Duflo and Udry 2004). Brown (2003) investigates how the size of a woman's dowry affects the intrahousehold allocation of time between household chores and leisure and the share of household spending that goes to women's goods. To account for unobservable confounding factors that affect both dowry and women's bargaining position in the household, the author instruments dowry using regional grain shocks in the year preceding marriage and sibling sex composition of the bride and groom. Higher dowries are associated with more potential leisure time for wives. One of the advantages of this approach is that often large sample household survey data sets include variables that can be used as instruments.

### *Randomized Experiments*

The third and final methodological approach is to use experimental games or randomized control trials (RCTs) to isolate the relationships between bargaining power and outcomes. The experimental games discussed above are a means to analyze the processes of decision-making. In RCTs, participants are randomly assigned to a treatment or control group. In practice, the randomization may be at the community level, such as when programs are rolled out over time; but the choice of which communities receive the program first is randomly assigned. Many RCTs, but relatively few of them are designed explicitly to analyze bargaining within the household.



Many of the conditional cash transfer programs have been implemented using a randomized rolled out so that the effects can be studied. The include programs in Mexico (Bobonis 2009, Behrman and Hoddinott 2005), India (Lim et al, 2010) and Nicaragua (Maluccio and Flores, 2005) among others. All find a positive impact of these transfers on child health and education outcomes.

As randomized control trials (RCTs) have become viewed as the “gold standard” for project evaluation, a number of concerns have been raised about their limitations and usefulness.. A general consensus is emerging that randomized experiments are powerful tools of evaluation under some circumstances, but that they must be used as one element of the toolkit along with other evaluation approaches. (See Ravallion 2009 and Barrett and Carter 2010 for reviews of the usefulness of RCTs.)

### **Indicators and Proxies for Bargaining Power**

In many cases, researchers find variables that seem plausibly to be related to women’s bargaining power and that are highly correlated with good outcomes – but in settings where no causal relationship can be convincingly demonstrated. This raises complicated questions: are we merely observing associations or are we observing variables that are in fact causally related to desirable outcomes? We cannot reject a causal relationship just because we cannot convincingly demonstrate causality; weak econometric identification does not imply the absence of a causal relationship.

In this vein, there are many examples of gender-linked policies and variables that are correlated with good outcomes and may, in fact, be good policy instruments.

## *Income and Employment*

Women's earned income is a measure that we would expect to be clearly related to women's bargaining power. Earning money may give women direct bargaining power; if women control the money that they earn, then they may have the ability directly to influence outcomes that require expenditures. In a cooperative bargaining framework, even the *potential* to earn money increases women's outside options and thus gives them more bargaining power.

It can be difficult to show that women's earned income is causally related to outcomes, because income is generally an endogenous variable. Estimations that use earned income usually use either changes in policy or an instrumental variables approach to deal with the endogeneity issues. Luke and Munshi (2011) estimate the impact of women's earned income from tea estates in India and find that higher women's income reduces the likelihood that children will marry a relative or be schooled in the ancestral location. The variation in tea estate elevation is used to predict women's income, since tea is picked by women and elevation impacts the value. Qian's (2008) analysis, discussed above, demonstrates that the exogenous increase in income from changes in the relative prices of men's and women's crops in China increases the survival rate of girls relative to boys.

Working outside the home and earning an income may provide bargaining power in another form. Women who work outside of their home may learn social and other skills needed to navigate the work environment. These may translate back into increased bargaining power within the home.<sup>vi</sup> Yet, it may also be that women who possess these skills are the ones who successfully seek jobs. Connelly et al (2010) study women in China who have migrated to the city to work and returned home. They find statistically significant effects from women's migration, but without a clear pattern of whether the impacts are positive or universal.

In addition, women's labor force participation may directly affect many of the outcome variables of interest, for reasons unrelated to bargaining power. For example, household expenditure patterns may differ depending on whether or not the wife works outside of the home. Participating in the labor force changes the value of time and household expenditure patterns; more money might be spent on transportation, food that is less time intensive to prepare, and clothing appropriate for work. These changes in expenditure would not necessarily be caused by increases in the woman's bargaining power.

Work itself may be empowering or disempowering. The income from working may give women the bargaining power to affect household decisions. Employment may also expose women to new situations and new information which may further increase their bargaining power. But it may also increase their overall workload and may put them in unsafe or difficult situations.

One way to identify the differences between income and work is to consider unearned or transfer income. Unearned income should be less related to labor supply. For example, Schultz (1990) used transfers and income from property as a measure of unearned income to identify bargaining-linked determinants of labor supply and fertility; an individual's unearned income reduced his or her labor supply, but it had less of an effect on spouse's labor supply. This approach resolves the issues of confounding work and bargaining power, but it raises some additional concerns. Women who receive transfers may be substantially different from those who do not; there may be unobservable differences among them that are determining the outcomes. And income from property or some types of pensions may be related to previous labor decisions.

Evaluations of conditional cash transfer programs, which transfer money to women as an incentive for children to attend school and receive health care, indicate that these transfers to women do improve school attendance and children's health care. (Berhman and Hoddinott 2005, Maluccio and Flores, 2005, Lim et al 2010, Bobonis 2009). However, it should be noted that the comparison is with households that received no transfers, rather than households in which men received the transfers.

The studies that meet the criteria for rigorous empirical analysis demonstrate that increasing women's income does influence women's bargaining power and improves household outcomes. Many additional studies indicate that increasing women's incomes, whether employment income or transfer income, may improve outcomes.

### *Assets*

The ownership of and control over assets may also be related to bargaining power. Intuitively, we would expect that owning assets provides women with more bargaining power. One mechanism would be through providing women with a higher outside option. In addition, assets may provide income, both directly through rents and indirectly through their use in production activities, and may also provide a sense of security (perhaps itself related to outside options).

Land is the most important asset in most developing countries. Thus, land ownership has often been used as a proxy for bargaining power. Yet, the concept of "ownership" for land is complicated, especially in developing countries. In many places, land is not formally titled. The full legal bundle of rights, including the right to sell, bequeath, mortgage, and use may not be held by one person (see Bomahangi, Doss and Meinzen-Dick, 2011). And, especially for

women, having the formal rights over land may not actually mean that they have control over the land. Yet, it seems clear that women's land rights should be associated with higher bargaining power for women.

As countries become more urbanized and fewer households are reliant on agriculture, other assets, especially housing, become more significant. Relatively few empirical studies have analyzed how housing ownership affects women's bargaining power. Datta (2006) uses interviews with women in an urban settlement where squatter communities were settled and titles were issued jointly to husbands and wives. Women were able to use their formal rights over housing to negotiate better intrahousehold outcomes.

Other assets may also be important. These may include livestock, ag equipment, consumer durables, businesses, and financial assets. Relatively little information has been available on the individual level ownership of assets, and it has been difficult to meet rigorous standards of determining causal relations. Yet a number of studies demonstrate the positive relationships between women's asset ownership and household outcomes. Doss (2006) uses both a measure of farmland and a broader measure that includes farmland, savings, and business to show that women's asset ownership increases the budget share spent on food and education in Ghana. Beegle, Frankenberg and Thomas (2001) use the wife's perception of her share of assets owned by her and her husband. Assets included are the house that they occupy, vehicles, appliances, jewelry, and furniture and utensils. Ownership of these assets is associated with obtaining prenatal care. Friedemann-Sanchez (2006b) considers a broader range of assets, moving beyond physical assets to include social networks to examine the impacts on household outcomes and women's well-being.

To deal with the concerns that women's current assets may be a result of women's bargaining power, rather than a source of it, several studies have used the assets that women bring to marriage as a measure of bargaining power. For example, Quisumbing and Maluccio (2003) use both current assets and assets at the time of marriage to analyze the expenditure patterns of households in Bangladesh, Ethiopia, Indonesia and South Africa. The results vary by country; in Bangladesh, women's assets at marriage increase the share of expenditures on education, while men's assets at marriage increase the share of expenditures on food.

Recent data collection efforts have begun to include information on asset ownership at the individual, as opposed to the household, level. Doss et al. (2011) have demonstrated the extent of gender asset and wealth gaps in Ecuador, India, and Karnataka, India and demonstrate how ownership is correlated with household decision-making processes (papers presented...) With better data, it will be possible to do more careful analyses of these relationships.

A strong case can be made that assets provide an important source of bargaining power for women. But this has been difficult to prove quantitatively, given the many endogeneity challenges. While the relationships between bargaining power and asset ownership may go in both directions – women with more bargaining power may be better able to acquire and retain assets and assets may confer additional bargaining power – the evidence strongly suggests that women's land rights and other asset ownership are associated with positive outcomes. Thus, these offer another policy lever to increase women's bargaining power and promote good outcomes. Programs and policies should not only provide women with opportunities to acquire land and other assets, but also develop ways to ensure that women are able to retain the assets.

### *Human Capital*

Education is often included in household and intrahousehold analyses because it may affect outcomes both directly and indirectly. Analyses using a unitary household framework for consumption decisions frequently include measures of women's education, since it is expected that educated women will consume different goods and categories of goods than women without education. In addition, education would impact a woman's outside options and thus her bargaining power. Both the level of a woman's education and her level of education relative to her husband's may be associated with her bargaining power. For example, Thomas (1994) includes both the education level of the husband and wife and finds that women's education levels have a bigger effect on the health of daughters than on sons; the opposite is true for fathers.

### *Other Proxies for bargaining power*

A number of other factors affect the outcomes of household decision-making and are often discussed as measures of bargaining power. They face many of the challenges discussed above. It is difficult to demonstrate the causal relations and the directions in which they go. In addition, some of these measures may simply be indicators of women's bargaining power but not factors that can be targeted to impact outcomes.

For example, Rao (1997) uses men's consumption of alcohol as a determinant of marital violence. Women who have less bargaining power may remain in marriages where their husband consumes alcohol and becomes violent. Wu and Li (2011) show that if a woman's first child was a boy and whether she ever gave birth to a boy improves her health and nutritional status.

Another set of measures that is used to proxy for women's bargaining power is the decision-making processes within the household. Whether or not women are able to make the decisions about whether or not to sell key assets (Reggio, 2011), or whether they are able to make decisions about food preparation and consumption (Patel et al, 2007) may be good indicators of women's bargaining power. As will be discussed below, household decision-making indicators are also used as measures of the outcomes of bargaining power.

Finally, women's own perceptions of appropriate social norms may be correlated with their bargaining power and thus, be correlated with outcomes. Mabssout and Van Staveren (2010) use women's attitudes about what they refer to as gendered institutions; whether they agree with practices such as FGM and violence against women and use this as a correlate of bargaining power. These authors embed their analysis of a consideration of social norms in the community and find that institutional level bargaining power variables affect women's decision-making power.

Many of these measures serve as good proxies for bargaining power. Yet it is less clear that they actually serve as levers that policymakers can use to change outcomes. The ones that intuitively appear the best at capturing bargaining power pose significant challenges in demonstrating the causality. It is difficult to prove rigorously that income and asset ownership actually provide women with bargaining power and that providing women with these resources will improve their well-being. Yet these are the variables that seem to have the strongest logical links to bargaining power, even though they are the most difficult to identify as causally related. This may be a case where the challenges of econometric identification are not reflective of the strength of the underlying causal relationship.



## **Bargaining over what? Measuring Outcomes**

What are the outcomes that bargaining power affects? Although there may be intrinsic reasons to focus on bargaining power, most of the literature takes the view that bargaining power matters because it is instrumental in determining real outcomes. What variables appear to be affected by intrahousehold bargaining? How are these measures altered by the distribution of bargaining power within the household? Are the effects large enough to matter? These are some of the questions addressed in this section, which focuses on the links established in the empirical literature between intrahousehold bargaining power and a variety of outcome measures. This section aims to do two things. First, the literature indicates a number of outcomes that are influenced by women's bargaining power within the household. Second, this section discusses the measures that are used in this literature. Some measures of these are more useful than others; and not all outcomes are typically measured at a level of disaggregation sufficient to reveal the effects of intrahousehold bargaining.

One challenge is that direct information on women's preferred outcomes is rarely available. Instead, the literature tends to rely on what Thomas (1990) refers to as an "inferential approach." When the proxy for women's bargaining power has a significant impact on the outcome in question, then the inference is that women prefer this outcome. For example, if women own more of the household assets and more of the household budget is spent on food, it is inferred that women prefer to spend more money on food and are able to use their increased bargaining power to obtain this outcome. Thus, a necessary condition for finding that men's and women's bargaining power within marriage matters is that they have different preferences. If their preferences do not systematically differ, the impact of women's bargaining power will be underestimated.

In one of the few studies that asks directly about preferences, Kusago and Barham (2001) ask each member of a couple in Malaysia how they would spend an additional \$40 across thirteen expenditure categories. They then calculate a measure of preference heterogeneity within the household. When this measure is included, it improves the estimation of expenditure decisions. Demographic studies examining fertility decisions do occasionally explicitly ask both husbands and wives about preferences, especially with regard to the number of desired children (e.g. Bankole 1995). Prabhu (2010) asks husbands and wives about their willingness to pay for malaria vaccines, eliciting their different preferences. But most analyses of bargaining within the household simply infer preferences.

*Consumption:*

Consumption measures, broadly defined, are a measure of people's well-being. Consumption or expenditure measures are often used as a better measure of well-being than income; incomes fluctuate more than expenditures. Thus, examining consumption outcomes may provide direct or indirect evidence on the allocation of resources among household members.

Because most household surveys do not include individual level expenditure or consumption data, it is not possible to tell which individuals consume particular goods. For any goods that are public or shared goods within the household, it is impossible to attribute expenditure to individuals without making strong assumptions. In the case of private goods, those consumed by individuals, it may be possible to obtain information on expenditures on men's goods, women's goods, or children's goods. For example, Dunbar et al (2010) categorize clothing expenditure in this way. Deaton (1989) uses adult clothing as a private good to analyze

expenditures patterns for children. These two studies are not explicitly examining bargaining power, but are testing for evidence of gender discrimination in expenditure patterns. Although Deaton finds no evidence of gender bias in expenditure patterns in Côte d'Ivoire or Thailand, Dunbar et al do find a bias in favor of boys in Malawi.

When data is not available on private or individual level consumption, studies have shown that women's bargaining power affects the household budget shares spent on food, education, recreation, health, private adult goods, or other categories of goods (see Duflo and Udry 2004; Doss 2006; Quisumbing and Maluccio 2003). The various measures of bargaining power, including agricultural income and assets, have an influence on household expenditure patterns. The strength of this approach is that it does not require detailed expenditure data. However, it only allows for an analysis of the patterns of expenditure, but can't provide information on who benefits from the expenditures.

Finally, transfer payments reallocate resources out of the immediate household, usually into the household of close family members. For example, Khemani (1999) examines the factors that influence transfers to parents in Indonesia and find that women with more bargaining power were more likely to make transfers to their own parents, but not to the parents of their husband.

Bargaining power may also affect direct measures of consumption, rather than expenditures. For example, Beegle, Frankenberg and Thomas (2001) find that when a woman owns a share of the household assets, she is more likely to receive prenatal care and give birth in a hospital or private doctor's office. They examine the level of services received, rather than the amount of money spent on them.

Many different measures of bargaining power appear to be correlated with household expenditure patterns and individual consumption outcomes. Endogeneity concerns remain;

measures of bargaining power, especially income and asset ownership, may be related to consumption in many ways in addition to their relationship to bargaining power. As more data becomes available on individual consumption, it may be more possible to identify the bargaining effects on consumption by specific household members.

*Production:*

Intrahousehold decision making may affect production decisions in household enterprises, as well as consumption decisions. A range of production decisions, especially agricultural production decisions, have been modeled as the outcomes of intrahousehold decision-making. Although the welfare effects of production decisions are not necessarily immediate, a household's production decisions will eventually affect the size of the total surplus that is allocated across members. In particular, household production decisions will affect the levels of total household production and the distribution of the goods produced among household members.

In a model of the household with unitary production decisions, agricultural inputs would be allocated across plots based on their marginal output, rather than based on which household members controlled the plot. Thus, analyzing the allocation of inputs, such as fertilizer or seeds, is an outcome measure that indicates the bargaining power of individuals. Udry (1996) finds that fertilizer and labor are not allocated efficiently across men's and women's plots in Burkina Faso. While fallow is not a purchased input, it is a critical input into soil fertility. Udry and Goldstein (2008) use the amount of time that individuals allow their fields to be fallow as indicators of their power within households and communities. They conclude, "the intensity of investments on different plots cultivated by a given individual correspond to that individual's security of

tenure over those specific plots and, in turn, to the individual's position in the political hierarchy relevant to those specific plots.”

McPeak and Doss (2006) analyze the decision among pastoralists in Northern Kenya of where to locate during each season and whether or not to sell milk. In the region studied, men traditionally decide where to locate, and women control the use of milk. As opportunities to sell milk have arisen, decisions over whether to sell milk to market – and how much to sell – have been contested between husbands and wives. The authors find that the presence of market opportunities leads husbands to locate the household farther from town to limit milk sales.

Intrahousehold bargaining would seem likely to influence the adoption of new agricultural technologies, but this issue is seldom examined in the extensive literature on agricultural technology adoption. This literature rarely examines the intrahousehold dynamics of adoption decisions or even the specific characteristics of individuals within the household. Many of the papers include the gender of the farmer or the gender of the household head as a determinant, but they do not consider technology adoption in an intrahousehold or bargaining framework.<sup>vii</sup> Several studies, however, have analyzed the allocation of labor across crops when new crops or technologies were introduced. In perhaps the earliest empirical paper in the intrahousehold literature, Jones (1983) examined the patterns of labor allocation on rice fields and millet/sorghum fields in Cameroon. She found that women did not allocate labor to men's fields, even when it would have resulted in higher household yields. Von Braun (1988) demonstrates, in effect, that when women have insufficient bargaining power within the household, the benefits of new technologies may be taken over by men -- even when the technologies were designed specifically to target women. Thus, the labor allocation has an impact on the levels of household production.

The lesson from these papers is clear: intrahousehold dynamics affect agricultural production decisions in myriad ways. As attention in the development community is moving back towards emphasizing agriculture and women's role in agricultural production, it may be important to understand bargaining within agricultural households. The older literature tells us that bargaining is important, but new work will be needed to see how agricultural production decisions are made within households. This will be especially important as labor patterns change in developing country agriculture. Where men are increasingly involved in work outside the household, women will take on greater responsibilities within agriculture. Understanding the intrahousehold dimensions of this transition will be important.

#### *Labor Allocation*

Labor allocations may be related to production, as noted above in examples of agricultural production. We may measure labor force participation, labor allocated to agricultural production, or labor allocated to household production. Intrahousehold decisions will also affect household labor earnings, income distribution, and the types of labor being performed. Finally, labor not allocated to any type of production may be consumed as leisure, which directly impacts well-being.

The amount of labor that women spend in the labor force (e.g., hours worked) may be determined as part of an intrahousehold decision making process. But it is a difficult measure to interpret, from the perspective of women's well-being. Women with more bargaining power may choose to work in the labor force, which gives them further bargaining power by providing them with outside networks and income. But it may also be the case that women, especially women from poor households, are working in the labor force because they have no other options.

Thus, working in the market may have positive or negative impacts on women's well-being. Schutlz's (1990) finding that increased unearned income reduces labor supply suggests that, given the opportunity, individuals prefer to work fewer hours.

The allocation of labor toward household chores may also be a result of intrahousehold bargaining. Zhang and Chan (1999) find that dowry and brideprice in Taiwan affect the number of hours that the husband spends doing household chores. More work has been done using household chores as an outcome measure in developed countries than in developing countries (for example, see Hersch and Stratton, 1994).

Another possible outcome measure would be leisure time. We would expect that individuals with more bargaining power would have more leisure. But good measures of leisure time are not often available, and this measure has not been used in analyses in developing countries.

Thus, although labor allocations often do reflect relative bargaining power within the household, it is not always clear that these measures tell us about the well-being of individuals. Unless there is a specific policy reason to focus on labor allocations, other outcome measures would offer more insight into individual welfare. Without knowing the preferences of the individuals doing the bargaining regarding their own labor allocation, it is difficult to draw useful conclusions about well-being.

### *Children's outcomes*

Much of the intrahousehold resource allocation literature has suggested that resources in the hands of women will have a larger positive impact on outcomes for children than similar amounts of resources held by men. Policy makers are often interested in targeting outcomes for

children, especially health and education outcomes. Among the outcomes commonly used as indicators of well-being are anthropometric measures such as height for age, weight for height and BMI. While these are useful outcome measures, they are not often collected in surveys that also include good indicators of bargaining power. Duflo (2003) provides an exception and analyzes the impacts of a program providing pensions to black South Africans, using weight for height and height for age as the outcome measures. The weight for height for girls was higher in households with a woman eligible for the pension.

Much evidence cited previously indicates the positive effects on children's education, especially girls' education, of women having increased bargaining power. Educational attainment, as a completed measure of educational investment, may be the best measure of children's education. Enrollment and expenditure on education both are measures of the intention for children to obtain education, but do not necessarily capture whether the children have been successful. However, when short term impacts are being studied, the increased enrollment of children, especially girls, may be the appropriate education outcome measure.

### *Decision-making and perceptions*

A final broad category of outcome measures are those related to the organization or processes that guide activities inside the household. These are not themselves measures of outcomes, but they are measures that affect outcomes broadly across the household. Examples include: who makes key decisions within the household, individuals' perceptions about gender roles, and perceptions of social norms.

The question of who makes the decisions within the household is occasionally used as an outcome variable because it seems to capture an aspect of women's bargaining power. We might



assume that women who have more bargaining power are more involved in decision making. For example, Allendorf (2007) demonstrates that women's land ownership increases the probability that women have the final say on their own health care and that they make the decisions on large and small household expenditures. Connelly et al (2010) use questions about who usually makes decisions in the family with respect to issues such as children's education, family planning, large purchases, investments, and the woman's own migration. In this latter study, women who were returned migrants to Chinese households had different decision-making power than those who had not migrated, but the direction of the impact varied across decisions. These studies indicate that women's bargaining power affects the process of household decision-making and give women more voice and power.

It is challenging to make sure that the decision-making questions capture the key issues of interest. It may be the case that women make the decisions but are nevertheless constrained by the preferences of their husbands. For example, women without their own incomes may be given a budget for food and household expenses. They control how to spend it, but they are responsible for using it to provide meals. Thus, the cultural context will be important to consider, and caution should be used when interpreting these results across countries.

The ability to make decisions within the household may also be seen as a measure of women's empowerment. To the extent that the *objective* of policy is to empower women, this may be a way to capture the effects, especially in the short run. But if policy makers are more concerned about women's empowerment because this will result in better final outcomes for women and girls, then the focus should be on the final outcomes.

*Other outcomes*

Women's bargaining power may also affect their well-being directly, including by reducing the violence that they face. Panda and Agarwal (2005) find that land ownership reduces women's experiences of domestic violence in India. Similarly, Rao (1997) finds that inadequate dowry is correlated with violence against women in India. And Luke and Munshi (2011) use marital violence as an outcome measure in India; they find that among the former slave-castes, an increase in total household income reduces the probability of domestic violence, but women's share of household income increases the probability of violence. Thus, it should not simply be assumed that all of the measures of women's bargaining power will directly benefit women's welfare; often the relationships, especially with regard to domestic violence are complex and culturally specific.

While the ownership of assets is most often used as a proxy for bargaining power, it is also an outcome variable that may itself be of interest. Some projects specifically seek to increase women's asset ownership; others might use it as one of a suite of measures of women's economic benefits. A number of studies focus on identifying the determinants of women's land rights (see Deere et al, 2004), although many of these do not explicitly use a bargaining framework.

Land or housing ownership is rarely modeled as the outcome of a bargaining process between among spouses, but may be modeled as a bargain across generations. And asset ownership may be the outcome targeted by development interventions, including micro-finance or legal literacy programs.

While children's nutrition and health are often used as outcome measures, women's health outcomes are also improved by increasing women's bargaining power (Wu and Li 2011; Beegle, Frankenberg and Thomas 2001).

Overall, many outcomes are improved by increasing women's bargaining power. Some of these outcome measures are the direct goals of policy, such as improving the health and education of women and children. Others are more intermediate steps and may reflect women's empowerment, such as women's role in household decision-making.

### **Conclusions:**

It is challenging to show empirically that women's bargaining power has a positive impact on desired outcomes. Yet considerable evidence indicates that intrahousehold dynamics do affect household decisions. Development programs may deliberately or inadvertently alter the bargaining power of individuals within households. As a result, bargaining power should be an important component of both *ex ante* and *ex post* project evaluation, along with the direct outcomes of the program. Those analyses that are sufficiently rigorous to meet the standards of the economics profession often take advantage of unusual natural experiments that allow for the causation issues to be addressed in very specific and usually very limited settings. The academic literature is generally interested in showing unambiguous causal relationships. Many of the research questions that are asked are relevant for an academic audience, but these questions may be less directly useful for policy purposes. The most rigorous form of analysis, randomized control trials, can often address problems of endogeneity and selection. Yet relatively few RCTs have yet focused on explicitly identifying the role of women's bargaining power in determining outcomes. And while this approach may provide some empirically rigorous findings in specific cases, there will be many programs and policies that cannot use this approach for evaluation.

Thus, we will need to draw out the lessons from these particular analyses and determine their relevance to a broader set of issues. The key lesson is that there are critical ways in which women's bargaining power influences the outcomes of household decisions.

For policy evaluation, the fundamental challenge is to design the implementation of the policy or program in such a way that it is susceptible to evaluation using the techniques described above. If the policy is an institutional change, then it is valuable to collect data on households both before and after the change. In addition, if the policy can ethically be implemented in such a way as to affect some groups but not others, then it becomes possible to examine the changes within each group over time. This "difference in difference" approach allows for comparisons between those affected and those not affected, before and after the implementation. Perhaps the policy can be implemented so that the order of implementation is randomized; then groups that have experienced the policy can be compared with those that have not. In the many instances where these approaches are not possible, then having data available to instrument some of the key variables will help to sort out causality from causation.

While rigorous empirical analyses are important, it is also important to do qualitative research in the areas where the projects will be implemented. The statistical analyses can tell us that there are correlations. But because there isn't always sufficient information (or the right information) to sort out causality, it can be helpful to draw on qualitative information to understand causation. This might involve interviews and focus groups, designed to help the researcher to identify whether the correlations have a causal relationship. In some sense it would be ideal to show rigorously that every policy or program intended to strengthen women's bargaining power has a demonstrable impact. In practice, however, this would be a poor use of limited resources. Instead, we should continue to do rigorous analyses where possible. What we

learn about intrahousehold bargaining and its impacts can then inform program design and evaluation procedures.

The broader literature includes many papers that are less econometrically rigorous but that nonetheless provide additional useful information towards policy making. Given the convincing evidence that bargaining power is important in some specific cases, we should be more willing to accept the findings of less rigorous studies as well as those that simply demonstrate correlations.

Taken together, there are sufficient data already in place to support a greatly expanded focus on intrahousehold outcomes and bargaining power. Additional data at the individual level will allow for further and more detailed research. A growing literature is exploring the current conventional wisdom -- namely, that the patterns of evidence suggest that women's education, incomes, and assets all are important aspects of women's bargaining power.

## **References**

Adam, Christopher S. and Hoddinott, John and Ligon, Ethan. 2011. "Dynamic Intrahousehold Bargaining, Matrimonial Property Law, and Suicide in Canada". CUDARE Working Papers 1113. University of California, Berkeley Department of Agricultural and Resource Economics, Berkeley, CA.

Agarwal, Bina. 1997. "'Bargaining' and gender relations: Within and beyond the household." *Feminist Economics* 3 (1): 1-51.

Alderman, Harold, Pierre-Andre Chiapori, Lawrence Haddad, John Hoddinott and Ravi Kanbur. 1995. "Unitary versus Collective Models of the Household: Is It Time to Shift the Burden of Proof?" *World Bank Research Observer* 10 (1): 1-19

Allendorf, Keera. 2007. "Do Women's Land Rights Promote Empowerment and Child Health in Nepal?," *World Development* 35(11): 1975-88.

- Ashraf, Nava. 2009. "Spousal Control and Intra-household Decision Making: An Experimental Study in the Philippines," *American Economic Review* 99 (4): 1245-77.
- Bankole, Akinrinola. 1995. "Desired Fertility and Fertility Behaviour among the Yoruba of Nigeria: A Study of Couple Preferences and Subsequent Fertility" *Population Studies* 49 (2): 317-28.
- Barrett, Christopher B. and Michael R. Carter. 2010. "The Power and Pitfalls of Experiments in Development Economics: Some Non-random Reflections," *Applied Economic Perspectives and Policy* 32 (4): 515-48.
- Beegle, Kathleen., Frankenberg, Elizabeth and Thomas, Duncan. 2001. "Bargaining Power Within Couples and Use of Prenatal and Delivery Care in Indonesia". *Studies in Family Planning* 32 (2): 130-46.
- Behrman, Jere R. and John Hoddinott. 2005. "Programme Evaluation with Unobserved Heterogeneity and Selective Implementation: The Mexican PROGRESA Impact on Child Nutrition." *Oxford Bulletin of Economics and Statistics* 67 (4): 547-69.
- Bobonis, Gustavo J. 2009. "Is the Allocation of Resources within the Household Efficient? New Evidence from a Randomized Experiment." *Journal of Political Economy* 117 (3): 453-503.
- Bomahangi, Allan, Cheryl Doss, and Ruth Meinzen-Dick. 2011. "Who Owns the Land? Perspectives from Rural Ugandans and Implications for Land Acquisitions." IFPRI Discussion Paper 01136, Washington, DC.
- Brown, Philip H. 2003. "Dowry and Intra-household Bargaining: Evidence from China," William Davidson Institute Working Papers Series 2003-608, William Davidson Institute, University of Michigan.
- Chen, Joyce J. 2013. "Identifying Non-Cooperative Behavior Among Spouses: Child Outcomes in Migrant-Sending Households" *Journal of Development Economics* 100(1): 1-18. Connelly, Rachel, Roberts, Kenneth and Zheng, Zhenzhen, 2010. "The Impact of Circular Migration on the Position of Married Women in Rural China." *Feminist Economics* 16 (1): 3-41.
- Datta, Namita. 2006. "Joint Titling – A Win-Win Policy? Gender and Property Rights in Urban Informal Settlements in India." *Feminist Economics* 12 (1 & 2): 271-298.
- Deaton, Angus S. 1989. "Looking for Boy-Girl Discrimination in Household Expenditure Data." *World Bank Economic Review* 3 (1): 1-15.

- Deere, Carmen Diana, Rosa Luz Duran, Merilee Mardon and Tom Masterson. 2004. "Female Land Rights and Rural Household Incomes in Brazil, Paraguay and Peru." Working Paper 2004-08, Department of Economics, University of Massachusetts at Amherst.
- Deininger, Klaus, Goyal, Aparajita and Nagarajan, Hari. 2010. "Inheritance Law Reform and Women's Access to Capital: Evidence from India's Hindu Succession Act, No 5338." Policy Research Working Paper Series, Washington DC: The World Bank.
- Doss, Cheryl R. 1996. "Testing among Models of Intrahousehold Resource Allocation." *World Development* 24 (10): 1597-609.
- Doss, Cheryl R. 2001a. "Designing Agricultural Technology for Women: Lessons from Twenty-Five Years of Experience." *World Development* 29 (5): 2075-92.
- Doss, Cheryl R. 2001b. "Is Risk Fully Pooled within the Household? Evidence from Ghana." *Economic Development and Cultural Change* 50 (1): 101-30.
- Doss, Cheryl R. 2006. "The Effects of Intrahousehold Property Ownership on Expenditure Patterns in Ghana," *Journal of African Economies* 15 (1): 149-80.
- Doss, Cheryl, Carmen Diana Deere, Abena D. Oduro, Hema Swaminathan, Suchitra J. Y., Rahul Lahoti, W. Baah-Boateng, L. Boakye-Yiadom, Jackeline Contreras, Jennifer Twyman, Zachary Catanzarite, Caren Grown, and Marya Hillesland. 2011. *The Gender Asset and Wealth Gaps: Evidence from Ecuador, Ghana, and Karnataka, India*. Bangalore: Indian Institute of Management Bangalore.
- Doss, Cheryl R. and Michael Morris. 2000. "How does gender affect the adoption of agricultural innovations?" *Agricultural Economics* 25(1): 27-39
- Duflo, Esther. 2003. "Grandmothers and Granddaughters: Old-Age Pensions and Intrahousehold Allocation in South Africa," *World Bank Economic Review* 17 (1): 1-25.
- Duflo, Esther and Christopher Udry, 2004. "Intrahousehold Resource Allocation in Cote d'Ivoire: Social Norms, Separate Accounts and Consumption Choices," NBER Working Papers 10498. Cambridge, MA: National Bureau of Economic Research.
- Dunbar, Geoffrey, Arthur Lewbel and Krishna Pendakur. 2010. "Children's Resources in Collective Households: Identification, Estimation and an Application to Child Poverty in Malawi," Working Papers in Economics 758. Boston College Department of Economics. (Revised 30 Nov 2010).

- Folbre, Nancy. 1994. *Who Pays for the Kids: Gender and the Structures of Constraint*. New York: Routledge Press.
- Friedemann-Sánchez, Greta. 2006a. *Assembling Flowers and Cultivating Homes: Labor and Gender in Colombia*. Lanham: Lexington Books.
- Friedemann-Sánchez, Greta. 2006b. "Assets in Intrahousehold Bargaining Among Cut-Flower Workers in Colombia." *Feminist Economics* 12 (1-2): 247-69.
- Goldstein, Markus and Christopher Udry. 2008. "The Profits of Power: Land Rights and Agricultural Investment in Ghana." *Journal of Political Economy* 116 (6): 981-1022.
- Hersch, Joni and Leslie Stratton. 1994. "Housework, wages, and the Division of Housework Time for Employed Spouses." *American Economic Review* 84 (2): 120-5.
- Iversen, Vegard, Cecile Jackson, Bereket Kebede, Alistair Munro, and Arjan Verschoor, 2006. "What's love got to do with it? An experimental test of household models in East Uganda," Working Paper 2006-01. Oxford: Centre for the Study of African Economies.
- Jensen, Robert T. 2004. "Do private transfers 'displace' the benefits of public transfers? Evidence from South Africa," *Journal of Public Economics* 88 (1-2): 89-112.
- Jones, Christine. 1983. "The Mobilization of Women's Labor for Cash Crop Production: A Game Theoretic Approach." *American Journal of Agricultural Economics* 65 (5): 1049-54.
- Katz, Elizabeth G., 1995. "Gender and Trade within the Household: Observations from Rural Guatemala," *World Development* 23 (2): 327-42
- Khemani, Stuti. 1999. "Inter-generational Transfers and Intra-Household Bargaining: Evidence from Indonesia." Dissertation, Department of Economics, Cambridge, MA: Massachusetts Institute of Technology.
- Kusago, Takayoshi and Bradford L. Barham. 2001. "Preference Heterogeneity, Power, and Intrahousehold Decision-Making in Rural Malaysia," *World Development* 29 (7): 1237-56.
- Lim, [Stephen S](#), [Lalit Dandona](#), [Joseph A Hoisington](#), [Spencer L James](#), [Margaret C Hogan](#), and [Emmanuela Gakidou](#). 2010. India's Janani Suraksha Yojana, a Conditional Cash Transfer Programme to Increase Births in Health Facilities: An Impact Evaluation. *The Lancet* [375 \(9730\)](#): 2009-23.
- Luke, Nancy and Kaivan Munshi. 2011. "Women as Agents of Change: Female Income and Mobility in India." *Journal of Development Economics* 94 (1): 1-17.



Mabsout, Ramzi and Irene Van Staveren. 2010. "Disentangling Bargaining Power from Individual and Household Level to Institutions: Evidence on Women's Position in Ethiopia." *World Development* 38 (5): 783-96.

Maluccio, John and Rafael Flores. 2005. Impact evaluation of a conditional cash transfer program : the Nicaraguan Red de Protección Social. Research Report 141. Washington, DC: International Food Policy Research Insitute.

McPeak, John G. and Cheryl Doss. 2006. "Are Household Production Decisions Cooperative? Evidence on Pastoral Migration and Milk Sales from Northern Kenya." *American Journal of Agricultural Economics* 88 (3): 525-41.

Prabhu, Vimalanand S., 2010. "Tests of Intrahousehold Resource Allocation Using a CV Framework: A Comparison of Husbands' and Wives' Separate and Joint WTP in the Slums of Navi-Mumbai, India." *World Development* 38 (4): 606-19.

Panda, Pradeep and Bina Agarwal. 2005. "Marital violence, human development and women's property status in India." *World Development* 33 (5): 823-50.

Patel, Ankur., William Leonard, Victoria Reyes-Garcia, Thomas McDade, Tomas Huanca, Susan Tanner, and Vincent Vadez. 2007. "Parental Preference, Bargaining Power, and Child Nutritional Status: Evidence from the Bolivian Amazon." Working Paper No. 31. Tsimane' Amazonian Panel Study Evanston, Ill., U.S.A.: Department of Anthropology, Northwestern University.

Qian, Nancy. 2008." Missing Women and the Price of Tea in China: The Effect of Sex-Specific Earnings on Sex Imbalance," *The Quarterly Journal of Economics* 123 (3): 1251-85.

Quisumbing, Agnes R. and John A. Maluccio. 2003. "Resources at Marriage and Intrahousehold Allocation: Evidence from Bangladesh, Ethiopia, Indonesia, and South Africa." *Oxford Bulletin of Economics and Statistics* 65 (3): 283-327.

Quisumbing, Agnes R. 1994. "Intergenerational transfers in Philippine rice villages: Gender differences in traditional inheritance customs," *Journal of Development Economics* 43 (2): 167-95.

Rangel, Marcos A. 2006. "Alimony Rights and Intrahousehold Allocation of Resources: Evidence from Brazil." *Economic Journal* 116 (513): 627-58.

Rao, Vijayendra. 1997. "Wife-beating in rural South India: A qualitative and econometric analysis," *Social Science & Medicine* 44 (8): 1169-80.

- Ravallion, Martin. 2009. "Should the Randomistas rule?" *The Economists Voice*, Accessed February 2009. <http://www.bepress.com/cgi/viewcontent.cgi?article=1368&context=ev>
- Reggio, Iliana. 2011. "The Influence of the Mother's Power on Her Child's Labor in Mexico," *Journal of Development Economics* 96 (1): 95-105.
- Schultz, T. Paul. 1990. "Testing the Neoclassical Model of Family Labor Supply and Fertility." *Journal of Human Resources* 25 (4): 599-634.
- Strauss, John and Duncan Thomas. 1995. "Human Resources: Empirical Modeling of Household and Family Decisions," In *Handbook of Development Economics, Volume 3A*, ed. J. Behrman and T.N. Srinivasan, 1883-2023. Amsterdam: Elsevier.
- Thomas, Duncan. 1994. "Like Father, like Son; Like Mother, like Daughter: Parental Resources and Child Height," *Journal of Human Resources* 29 (4): 950-88.
- Thomas, Duncan. 1990. "Intra-Household Resource Allocation: An Inferential Approach." *The Journal of Human Resources* 25 (4): 635-64.
- Udry, Christopher. 1996. "Gender, Agricultural Production, and the Theory of the Household," *Journal of Political Economy* 104 (5): 1010-46.
- Wu, Xiaoyu and Lixing Li, 2011. "Gender of Children, Bargaining Power, and Intrahousehold Resource Allocation in China." *Journal of Human Resources* 46 (2): 295-316.
- Von Braun, Joachim. 1988. "Effects of technological change in agriculture on food consumption and nutrition: Rice in a West African setting." *World Development* 16 (9):1083-98.
- Zhang, Junsen and William Chan. 1999. "Dowry and Wife's Welfare: A Theoretical and Empirical Analysis," *Journal of Political Economy* 107 (4): 786-808.

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<sup>iii</sup> Reviews of this literature include Strauss and Thomas (1995) and Doss (1996).

<sup>iv</sup> See Doss, 1996 for a discussion of the various models and approaches to empirically distinguish among them.

<sup>v</sup> Luke and Munshi (2011) are an exception to this and use the difference in preferences among women of different castes in India to the effects of women's incomes on household decisions.

<sup>vi</sup> Friedemann-Sanchez (2006a) has a useful discussion of how women use work to bargaining within households.

<sup>vii</sup> See Doss, 2001a for a discussion of gender and agricultural technology in Africa.