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BACKGROUND PAPER

INTRAHOUSEHOLD BARGAINING AND RESOURCE ALLOCATION IN DEVELOPING COUNTRIES

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Intrahousehold Bargaining and Resource Allocation in Developing Countries

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Executive Summary

Policy makers and development practitioners intuitively expect that women's bargaining power will affect key development outcomes, such as the health and education of children and the well-being of the women themselves. In addition, women's bargaining power may affect decisions within the household that impact household production, such as the allocation of labor across various activities, including household chores, agricultural work, and wage work. Thus, it is critical to have measures of women's bargaining power that can be used in the evaluation of programs.

Household members bargain over many different outcomes, whether the bargaining is explicit or implicit. These outcomes may include consumption and expenditure, production (such as the use of inputs), labor allocation, asset ownership, children's health and education, decision-making, and violence within the household. This paper provides details on the various outcome measures that have been used and the strengths and weaknesses of each for understanding women's bargaining power.

Most analyses of women's bargaining power focus on the relationship between spouses. Some research examines intergenerational bargaining which may be transfers and investments in the health and education of children or the relationships between adult children and parents.

A wide range of measures and indicators of women's bargaining power have been used to understand household dynamics. Measures that are frequently used to proxy for women's bargaining power include income and employment, asset ownership (both current assets and assets brought to marriage) and education. In addition, in particular contexts, other measures are used, such as brideprice and dowry, whether the woman has given birth to a son, and women's role in household decision-making and her autonomy to travel and make independent decisions.

One key challenge is identifying which measures are simply indicators of women's bargaining power – measures that are correlated with women's bargaining power – from those that are causally related to bargaining power. Both have a purpose. Seeing an improvement in the indicators may signal that women's bargaining power has increased. But if want to know how to target a particular policy to directly affect women's bargaining power, we need to identify causal relationships. A number of approaches, including natural experiments and shifts in policies, instrumental variables estimations, and randomized control trials, all provide information on the causal relationships.

Sufficient rigorous analysis of the causal mechanisms of women's bargaining power and positive outcomes exists that we can now be confident that bargaining power is an important determinant

of household resource allocation. Further work that identifies the correlations between the indicators and positive outcomes suggests that the impacts are widespread.

The final section of the paper suggests the data that is needed for projects and programs to demonstrate that they are having an impact on women's bargaining power. It details what specific measures are most useful.

Intrahousehold Bargaining and Resource Allocation in Developing Countries¹

Policy makers intuitively expect that women's bargaining power will affect key development outcomes, such as the health and education of children and the well-being of the women themselves. In addition, women's bargaining power may affect decisions within the household that impact household production, such as the allocation of labor across various activities, including household chores, agricultural work, and wage work. Beginning in the 1980's, researchers and practitioners have been making the case that if we don't understand the dynamics of household decision making and resource allocation, many projects and policies will not achieve their intended effects.

In response to these concerns, academics have developed a number of different theoretical models of the household and have done extensive empirical work to understand the bargaining processes within households. This paper examines the quantitative empirical literature on intrahousehold resource allocation and bargaining within households to identify key outcome and bargaining measures. The various measures are evaluated as to their potential contribution in understanding these complex processes. In addition, this paper examines the lessons that have been learned about the methodology of evaluating intrahousehold bargaining and collecting data to do so. The focus is on the empirical literature in developing countries, although occasionally an illustrative example from developed countries will be used.

Overview of 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 considering the impact of a variety of factors on household outcomes. In broad strokes, the research falls into four categories: 1) testing the unitary model of the household, 2) testing whether household decisions are efficient, 3) identifying 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 is asking different questions and thus presents different information.

¹ This project benefitted enormously from the excellent research assistance of Jaqueline Oliveira.

Testing the Unitary Model of the Household

Initial 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 analyses done by early researchers on women in development issues challenged these notions and new theoretical models were developed that use a bargaining framework; this led to the development of collective model of the household. An extensive literature developed to demonstrate that the unitary model did not hold in a variety of circumstances.

Initial work focused on demonstrating that the unitary model was not appropriate by testing its assumptions. Typically, these papers presented evidence that the allocation of resources within the household affected the outcomes of household decisions in ways that would not be expected under the unitary model. For example, the unitary model predicts that it should not matter who within the household earns the income or owns the assets for how household decisions are made. In 1995, Alderman, Chaipori, Haddad, Hoddinott and Kanbur argued that it was time to shift the burden of proof; they claim that there was sufficient evidence against the appropriateness of the unitary model of the household that people who used it should bear the burden of demonstrating 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.² 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 is in the paid labor force.

Cooperative bargaining models are a subset of models broadly labeled collective models. They assume that households are Pareto efficient; in other words that 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

² See Doss, 1996 for a discussion of the various models and approaches to empirically distinguish among them.

affect this rule. These collective models provided insights into how to test and reject unitary models.

Testing for Efficiency

The final broad category of household models, noncooperative models, do not assume that the household reaches Pareto efficient allocations in either production or consumption, but instead provides a framework for testing these assumptions. A series of empirical papers have tested whether the assumptions of either the cooperative bargaining models or the collective models hold. These models are rejected if the assumption of efficiency does not hold. These papers may explicitly use a noncooperative bargaining model to motivate the tests or may simply test whether Pareto efficient or cooperative outcomes are reached.

The tests may focus on either production or consumption decisions. Udry examines the allocation of labor and fertilizer across plots in Burkina Faso and finds that they are not efficient. McPeak and Doss find that pastoralist households in Northern Kenya do not reach cooperative outcomes. These are both discussed in more detail below. Based on detailed data analysis in Guatemala, Katz (1995) finds results consistent with the separate spheres model of the household, a noncooperative bargaining model in which each household member combines his or her own earnings with transfers to and from others to make expenditures to fulfill his or her own preferences and responsibilities.

Others find results that are consistent with a collective model of the household. Analyzing the impacts of the PROGRESA program, Bobonis (2009) finds that expenditure patterns in Mexico are consistent with the collective model. Chen (2009) finds that her analysis of child outcomes in households where husband's migrate are consistent with a collective model and reject the unitary model. Quisumbing and Maluccio (2003) indicate that expenditure patterns in Bangladesh, Indonesia, Ethiopia and South Africa all are consistent with the collective model.

Thus, the unitary model is usually not an appropriate one for understanding household decisions; bargaining power and other factors within the household frequently affect the outcomes of household decisions. Yet, many studies do find that the collective model, one which assumes efficiency in allocation, is appropriate.

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, but estimate the determinants of outcomes of household decisions. Allendorf (2007) examines how land rights impact child health in Nepal. Beegle et al (2001)

analyze how power within the household affects women's access to prenatal care in Indonesia. Quisumbing (1994) analyzes the intergenerational transfers of education, land and nonland assets from parents to children. Many of these studies include measures that would be considered indicators of women's bargaining power. They provide empirical evidence on the influences on intrahousehold resource allocation.

Experimental papers:

A relatively new area has been to use experimental games to understand how decisions are made within households. One such game was done by Iverson et al, who examine trust and contributions between a husband and wife in Uganda. Initially, each couple received US\$ 4000; it was randomly decided whether the total amount was given to the husband, the wife or split evenly. Then each partner made a contribution to a common pool and the total contributions are increased by 50%. Then the pool is allocated to the spouses; it is randomly chosen whether the husband or wife gets to decide how to allocate the money or whether it is split evenly between them. Because there are two aspects of the game that are randomly assigned, the authors have random variation to use to analyze how it impacts outcomes.

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 to either deposit the money in their own account or take consumption in the form of cash. One of three levels of communication was assigned to each player: information was private (no information given to the spouse), information was public (each spouse knew about the other's payoffs and choice sets) and finally, the spouses knew about each others payoffs and choice sets and were along to communicate before making their decision. This allowed analysis of how sharing information (or not) impacts outcomes.

Our discussion thus far has used the abstract concept of bargaining power. We continue to do so in the next section where first we examine the issue of who is bargaining in these households and second, the various outcome measures that have been used. We note that policy makers may be interested in the actual outcomes of household bargaining, such as child health and education outcomes, or they may be interested in particular outcomes because they help to provide insights on women's bargaining power. We return to the issue of how bargaining power is defined and measured in the following section. The key findings from the work on intrahousehold resource allocation are discussed. And finally, recommendations for data collection and approaches to understanding intrahousehold resource allocation are discussed.

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 empirical analyses then have to consider how to use the theoretical frameworks with two decision-makers in a context that may be very different. There may be multiple generations or multiple wives. Most of the empirical analyses reduce the analysis of bargaining to that between two individuals, usually husband and wife. They then include control variables for a number of the household characteristics, including household size and ages of children. However, adult children living with their parents are rarely included as decision-makers.

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 may assume away many other important facets of women's bargaining power. 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 are able to bargain within their household to obtain some of the unobservable factors that are needed to adopt these technologies. Female headed households are not able to do so. If only couple headed households had been included in the analysis, this insight would be lost.

Although it would be possible to include households that had two decision makers who are not a couple, such as an adult child and older parent, or two siblings, in a bargaining framework, another set of implicit assumptions in empirical analyses make this difficult. Most of the empirical work examines the impact of some measure of bargaining power on outcomes. But the patterns only show up in the data if we have a way to compare across groups. While we would like to know whether the individual who has more bargaining power is able to obtain their preferred outcome, we rarely have information on what outcomes individuals would prefer. So we assume that men and women have different preferences regarding outcomes and show that when women have more bargaining power, the outcomes are different. If men and women had the same preferences, it would not matter who had the bargaining power. So in order to analyze the impacts of bargaining, we need to make assumptions about groups of people, such as men and women. It would be possible to make similar assumptions for adult children and a parent, if we had a sufficient sample size of this group. We might very well expect that adult children

have different preferences than their elderly parents with whom they live and depending on who has the bargaining power with those households, the outcomes would be different.

The literature on intergenerational transfers is one area where occasionally the analysis is not of a couple bargaining. For example, Jensen (2004) analyzes what happens to transfers from adult children to elderly parents after the end of apartheid 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, we can consider that the level of transfers is a result of bargaining between the elderly and their children and that the benefits of the program are shared.

Many of the analyses on intergenerational transfers are actually about the bargaining between a couple about how much to provide to their parents or their children. For example, Quisumbing, Estudillo and Otsuka (2004) examine the patterns of bequests from parents to children in the form of education and land in Sumatra, Indonesia, the Phillipines and Ghana.

Looking at this issue from another angle, many papers that focus on the bargaining between the couple have 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 has 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 encourages us to examine the broader structures of constraint that shape the choices that men and women make. She says, “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 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). And 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. Thus, changing community norms and institutions will have an impact on

household decisions, whether they are explicitly included in an empirical analysis or not. If they are not included in the analysis, the results may be incomplete or misleading.

Bargaining over what?

The reason that policy makers care about bargaining power is because we believe that increasing women's bargaining power has the potential to provide better outcomes. While an academic strand of the literature focuses on testing among the theoretical models of the household, much of the applied literature emphasizes that it is critical to understand intrahousehold bargaining if we want to understand how the various outcomes are obtained.

This section focuses on the various outcome measures that have been considered in the empirical literature. Throughout the following discussion of outcome measures, we keep in mind two sets of issues. First, the literature is reviewed to provide insights on how to measure the outcomes that we care about. Since data is usually limited, we explore which measures are the most useful. And second, if we are interested in understanding the processes of household decision making and the role of women's bargaining power, what outcomes are useful?

Policy makers may be concerned about specific outcomes and want to know how to influence them. Or policy makers may be interested in the bargaining process and want to know what impacts it. In order to know whether bargaining power is important, it needs to be considered in the context of outcomes.

One challenge that becomes apparent in this discussion is that we usually don't have direct information on what outcomes women would choose if they had more bargaining power. Frequently, we have to use what Thomas (1990) refers to as an "inferential approach." When we find that our proxy for women's bargaining power has a significant impact on the outcome in question, we then infer that women prefer this outcome. For example, if we find that when women own more of the household assets, more of the household budget is spent on food, we are then inferring that women prefer to spend more money on food and are able to use their increased bargaining power to obtain this outcome. To the extent that men's and women's preferences don't systematically differ, we may be underestimating the impact of women's bargaining power.

Reggio (2010) is explicit about this approach in her study of parental bargaining and child labor in Mexico. The theoretical model suggests that if the parent with the greater disutility for child labor has more bargaining power, which in this case is considered to be the one who makes decisions about whether or not to sell assets, then there will be fewer hours of child labor. But in the empirical analysis, the assumption is made that it is the mother that has the greater disutility from child labor.

In one of the few studies that asks directly about preferences, Kusago and Barham (2001) separately ask each member of a couple in Malaysia how they would spend an additional \$40 across thirteen expenditure categories. These are then used to calculate a measure of preference heterogeneity within the household, which, when included provides better estimations 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.

	OUTCOME MEASURES
Consumption	Private goods: clothing Expenditure patterns; budget shares Transfer payments to parents Direct consumption measures: health care, education
Production	Allocation of inputs Sales decisions
Labor	Labor allocation in ag production Labor force participation Domestic chores Leisure
Asset Ownership	Land Housing
Children's Outcomes	Height for age, weight for height Survival rates Education
Decision making	Expenditure, savings
Women's Well-Being	Violence

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 expenditure. Thus, examining consumption outcomes may provide direct or indirect evidence on the allocation of resources among household members.

A number of measures of household consumption are widely used in the literature. Because most household surveys do not include individual level 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 isn't possible 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.

In many data sets, the categories of expenditures that are most likely to be attributed to individuals are health and education expenditures. If this data is available, it is possible to compare the impact of women's bargaining power on these expenditures for boys and girls, and also the impact on women's and men's own health expenditures. If there are goods that can be clearly identified as private individual goods, expenditure on these goods can be used as an excellent outcome measure.

When data is not available on private or individual level consumption, then it is possible to examine the patterns of expenditure by analyzing the 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 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.

Golan and Lay categorize some items as male items, including alcohol, tobacco and meat and examine how the share of income received from coffee production impacts expenditure on these male goods. This approach is less satisfactory because it relies on assumptions that these broad categories of goods are men's goods.

Finally, transfer payments can be used as an outcome measure. These transfers reallocate resources out of the immediate household, usually into the household of close family members. Ham and Heonjae (2009) analyze the transfers to the parents of the husband and wife; 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.

Direct measures of consumption, rather than expenditures, have also been used as outcome measures. Beegle, Frankenberg and Thomas (2001) find that women owning a share of the household assets results in her being 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.

Production:

While using consumption as the outcome measure provides insights into how resources are allocated within the household, using measures related to production provides insights into the process of production and to understanding how much the household will have to allocate.

A range of other production decisions, especially agricultural production decisions, have been modeled as the outcomes of intrahousehold decision-making. Although these can be considered intermediate outcomes, rather than final outcomes, they may affect 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.

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, the decision of whether or not to do so is contested between husbands and wives; husbands locate the household farther from town to limit milk sales. The authors note that these decisions are not final outcomes and that their data does not allow for analysis of whether households are better off – or who within the household is better off – given the location and milk sales decisions.

An extensive literature on the determinants of the adoption of agricultural technologies rarely examines the intrahousehold dynamics of the decisions or even the specific characteristics of individuals within the household. Many of the papers do include the gender of the farmer or the gender of the household head as a determinant, but more than this would be needed to think about the technology adoption issue in an intrahousehold or bargaining framework.³

Several studies have analyzed the allocation of labor across crops when new crops or technologies were introduced. Jones (1983) used the patterns of labor allocation on rice fields and millet/sorghum fields in Cameroon; women did not allocate their labor on men's fields, even when it would have resulted in higher household yields. Von Braun (1988) demonstrates, in effect, that when women don't have sufficient 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.

Labor Allocation

Labor allocations may be related to production, as noted above in examples of agricultural production. We may measure labor allocated to the labor force, to agricultural production and to household production. Some of the labor allocations will then affect incomes (both the level of household income and the distribution of who earns or receives the income) and the type of work being done. In addition, labor not allocated to any type of production may be used for leisure, which directly impacts well-being.

One measure of labor allocation would be the number of hours that women spend in the paid labor force. Yet, this is a less clear measure 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 labor may have positive or negative impacts on people's well-being. For example, Schultz (1990) found that an individual's increased bargaining power (measured through unearned income) reduced his or her labor supply, but it had less of an effect on spouse's labor supply. This suggests that, given the opportunity, individuals prefer to work fewer hours.

The allocation of labor toward household chores can also be used as an outcome measure. Zhang and Chan (1999) look at the impact of dowry and brideprice on the number of hours that the husband spends doing household chores. More work has been done using household chores

³ See Doss, 2001a for a discussion of gender and agricultural technology in Africa.

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, it is not always clear that labor allocation measures tell us about the well-being of individuals. Unless there is a specific policy reason for being interested in labor allocations as an outcome of intrahousehold bargaining, other outcomes measures would be preferred. 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.

Asset ownership: land, nonland assets

While the ownership of assets is often used as a proxy for bargaining power, it is also an outcome variable that may be of interest in some instances. Some projects have increasing women's asset ownership as a key goal; and thus, asset ownership is an important outcome measure. A number of studies focus on identifying the determinants of women's land rights (see Deere et al, 2004). 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.

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.

Anthropometric measures are often used as indicators of children's nutritional status, especially in the health and nutrition literatures. Height for age, weight for height and BMI are all widely used as children's outcome measures. While these are useful outcome measures, frequently, surveys that have this type of data on children do not also include good indicators of bargaining power. Duflo's (2003) paper the impacts of a program providing pensions to black South Africans uses weight for height and height for age in her analysis.

Relative survival rates of girl and boy children may also be used as an outcome measure (see Qian, 2008). Survival rates of children may be impacted by the bargaining power of mothers and

fathers, but as noted above, to attribute it to differences in bargaining power, we would have to make assumptions about the preferences of mothers and fathers regarding the differential survival of sons and daughters.

Children's education and, specifically, girls' education are often used as outcome measures. Deininger et al (2010) use the increase in girl's educational attainment as an outcome in their study of changes in India's inheritance law. Qian uses educational attainment in China as an outcome variable. As final outcome measures, educational attainment is 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 again related to processes, rather than themselves being final outcomes. They include who makes key decisions within the household and individuals' perceptions about gender roles and 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) uses what she claims is a measure of women's empowerment, proxied by questions on who has the final say on own health care, and large and small household expenditures. Women landowners were more involved in these decisions. Mabsout et al (2010) use data from the 2005 Ethiopia DHS which asked women about who decides over four domains: own health, daily household needs, large household purchases, and visits to family and relatives. Women were asked whether someone else makes the decision, the decision making is shared or they make the decision alone. Connelly et al (2010) use questions about who usually makes decisions in the family about events such as children's education, family planning, large purchases, investments, and the woman's own migration. These measures tell us something about the processes of household decision-making.

It is challenging to make sure that the decision-making questions capture the key issues that we are interested in. It may be the case that women make the decisions, but within the constraints provided by husbands. For example, women without their own income may be given a budget for food and household expenses. They control how to spend it, but 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 goal 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 these final outcomes should be the ones measured.

In addition to changing women's roles in household decision making, programs to increase women's bargaining power or empowerment may also seek to change the perceptions and social norms around women's roles and responsibilities. They may also seek to increase the level of knowledge that women have, such as knowledge about the laws or new opportunities. This information may also be useful outcome measures.

A few studies have directly considered outcomes that are based on women's well-being. One set of outcomes that is particularly relevant is violence against women. Some surveys, including some of the Demographic and Health Surveys, include information on women's experiences of domestic violence. In addition, researchers interested in women's bargaining power may collect this information in their own surveys.⁴ Panda and Agarwal (2005) find that land ownership reduces women's experiences of domestic violence in India. Similarly, Rao (1997) uses domestic violence as an outcome measure and finds that inadequate dowry is correlated with violence against women. 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.

Measures of bargaining power

It is not possible to actually measure women's bargaining power. It is unobservable. At best, we can find good proxies for women's bargaining power. Which proxies are useful depend on what we are trying to understand. There are many good indicators of women's bargaining power; these are measures that are correlated with bargaining power. Yet, often we want to understand the causal relationships, so that policy makers know how to effect change. The challenge is understanding when we have identified causal relationships and when we have only identified correlations.

⁴ For guidelines on collecting survey data on domestic violence, see, Ellsberg and Heise (2005).

Let's take an example where we believe that women's bargaining power affects children's schooling. Policy makers want to find a way to increase women's bargaining power and thus to increase children's schooling.

Suppose we go into a community and discover that all of the children who go to school have mothers who wear blue hats. The mothers of children who don't go to school do not wear any hats at all. Thus, wearing blue hats is perfectly correlated in this community with women who have bargaining power and send their kids to school. Yet, it would clearly be wrong to assume the appropriate intervention to get all children in school would be to give all mothers blue hats. And it isn't necessarily true that if we implemented a program that succeeded in having all children attend school, all of the mothers would then wear blue hats. We don't know why or how wearing blue hats is correlated with children attending school and whether the correlation would remain after a significant policy change.

Suppose that we then discover that all of the women who wear blue hats also own land. So now we hypothesize that land gives women bargaining power. Thus, owning land results in women wearing blue hats and sending their children to school. Intuitively, this explanation makes much more sense. And it has clear policy implications: provide women with land and more children will go to school.

But we still haven't observed bargaining power. And it may still be the case that women's bargaining power is determining what we observe. Women's bargaining power could determine both whether or not women own land and whether or not they send their children to school. Owning land may not result in children's schooling. In this case, giving women land would have no more impact than giving women blue hats.

And there is one more twist to this story. We need also to convince ourselves that the causal relationship does not work in the opposite direction; we need to know that children's schooling does not affect women's land ownership. If the woman has adult children who have been educated, then they may be able to provide her with support to acquire land. In this case, there could be a causal relationship in this opposite direction. So providing children with education might result in women acquiring land, but not the other way around.

The papers that attempt to establish causality between bargaining power and outcomes measures of women's welfare resort to roughly three approaches. The first is to analyze institutional changes (such as divorce and inheritance laws, or economic reforms). These changes would affect women's bargaining power, but would not necessarily affect the observable measures. In our scenario above, a change in policy that gave women increased legal property rights would affect their bargaining power, but would not necessarily affect the amount of land that that

actually owned and would not affect children's schooling, except through the impact on women's bargaining power.

The second approach is to use an instrumental variables estimation.⁵ These are variables that correlate with the measure of bargaining power but not with other determinants of women's welfare that the researcher cannot observe. For example, using land brought to marriage rather than current landholdings is one such measure. But even better would be to use parent's landholdings as a measure that would affect the woman's bargaining power, but would not directly affect her children's schooling. Finding good instruments is a challenge in any empirical work.

The third approach is to use randomized control trials or social experiments, where a subset of the subjects being studied are randomly chosen to participate in the program. The outcomes of this group is compared with those who were not chosen. In this case, a program might randomly assign land rights – or a program on land legal literacy – to some women and not to others and examine the impacts on children's schooling. As this example suggests, some of these may be difficult to do in practice. It is easier to do randomized experiments that involve cash transfers than those that involve land transfers.

Many policies and programs are designed with the goal of increasing women's empowerment or bargaining power. In part, this reflects the fact that we realize that often something mediates between the policies that are implemented and the outcomes. Thus, it is useful to consider the various measures and indicators of bargaining power that have been used. Following this discussion, we discuss the various approaches to dealing with causality in more detail.

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 have the ability to directly 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.

Estimations that use earned income usually use either changes in policy or an instrumental variables approach. Luke and Munshi (2011) estimate the causal effect of a change in earned income of women from tea estates in India on the extent to which children will marry outside

⁵ We could consider a policy shift or a randomized control trial to be the instrument through which we are able to identify causality and thus, this second approach is to use "other instrumental variables."

their caste system, children's educational attainment and marital violence. The variation in tea estate elevation is used to predict women's income, since tea is picked by women and elevation impacts the value. In analyses of how shocks to individual incomes affect household expenditure patterns, Doss (2001b) and Udry and Duflo (2004) use rainfall to instrument for individual agricultural income.

Another approach is to use the share of income earned by women in the household. This reflects their relative bargaining power. Again, this measure is confounded by the fact that the decision of which household members will work for pay is made within the household and may depend on bargaining power. Yusof and Duasa (2010) use women's earning share on household income as the measure.

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.⁶ 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 earning an income may directly affect many of the outcome variables that we care about. For example, we would expect household expenditure patterns 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 appropriate clothing for work. These changes in expenditure would not be caused by her increased bargaining power. Below, we discuss some of the approaches to deal with these issues.

And work itself may be empowering or disempowering. Working to earn an income may give women the bargaining power to affect household decisions. And work may expose women to new situations and new information which may also increase their bargaining power. But it may also increase their overall work load and may put them in unsafe or difficult situations. The ILO has an agenda of promoting "decent work", which outlines what types of work are considered to be good.

In response to the concerns about using earned income to understand bargaining power within households, some researchers have used unearned income. Unearned income should be less

⁶ Friedemann-Sanchez (2006a) has a useful discussion of how women use work to bargaining within households.

related to labor supply. For example, Schultz (1990) used transfers and income from property as a measure of unearned income in an analysis of bargaining power on labor supply and fertility. Thus, it resolves the issues about confounding work and bargaining power, but it raises some additional concerns. Women who do and do not receive transfers may be substantially different; 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. Unearned income is a better measure of bargaining power than earned income, suggesting that the receipt of income may have an impact on outcomes.

Several studies have examined the impact of conditional cash transfer programs, since the income in these programs also is not directly tied to labor, although the “conditional” aspect is that they usually require the children to attend school and may require preventative health care for children. PROGRESA, now *Oportunidades*, in Mexico is the best studied of these cash transfer programs. Bobonis (2009) used this nonearned income to examine household consumption patterns in Mexico. And Behreman and Hoddinott (2005) used this income to examine preschool nutrition.

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.

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” is complicated for land. In many places, land is not titled. The full legal bundle of rights, including the right to sell, bequeath, mortgage, and use may not be held by one person. And, especially for women, having the formal rights over land may not actual mean that they have the control over the land. Allendorf discusses land rights in her paper on empowerment and child health in Nepal, but uses three measures of land ownership, distinguishing between women who own land individually, women who do not own land individually but live in households that own land, and women who live in landless households. Panda and Agarwal (2005) use the ownership of land and housing as a measure of bargaining power in India.

In analyses focusing on assets, the definition of assets may be broader than just land. Doss (2006) uses both a measure of farmland and a measure of assets that includes farmland, savings, and business assets in an analysis of expenditures in Ghana. The measure of farmland ownership is the individual who is reported as the holder of the land in the survey; the holder may or may

not have an ownership document. Quisumbing and de la Briere (2000) use information on land owned and operated, all animals, and 30 types of durable goods and capital equipment. 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. 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. Quisumbing and de la Briere (2000) asked respondents to recall the assets they owned before their wedding, including land, cattle, and durables (jewelry, clothes and household utensils). In addition, men were asked about houses and women about stocks of food. Women's assets are positively related to expenditures children's clothing and education and negatively related to services, health and recreation. Quisumbing and Maluccio (2003) use both current assets at the time of marriage to analyze the expenditure patterns of households in Bangladesh, Ethiopia, Indonesia and South Africa. They used the same data as Quisumbing and de la Briere for Bangladesh. In Indonesia, they asked about the land received at marriage; in Ethiopia, land and livestock at marriage; and for South Africa, if they owned any cattle, livestock, land, a house, and jewelry, among other things, at the time of marriage. They find that the distribution of assets does influence household expenditure patterns.

Human Capital

Education is often included in household and intrahousehold analyses. Education may affect outcomes both directly and indirectly. The factors that allow women to obtain education may be the same as those that provide for good outcomes. 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 women's education and her level of education relative to her husband's may be associated with her bargaining power. Thomas (1994) includes both the education level of the husband and that of her husband to examine the impact on child height for age. Similarly, Quisumbing, Estudillo and Otsuka (2004) use education levels of both spouses in an analysis of education levels of children and transfers of land to children in Ghana, the Philippines, and Indonesia.

Measures and Indicators of Women's Bargaining Power

Income & Employment

Earned Income (instrumented with education and demographic characteristics or changes in income opportunities)
 Non-earned income (transfers, remittances, property income)
 Employment status (instrumented or with changes in opportunities)
 Migration status of husband or wife

Asset ownership

Assets owned
 Assets brought to marriage

Human Capital

Education

Other measures

Participation in development programs
 Dowry & brideprice
 First child is male
 Relative status of natal families

Decision-making & attitudes

Decision-making over expenditure
 Decision-making over selling assets
 Autonomy to travel to market, clinic, etc. alone
 Knowledge of laws and opportunities
 Attitudes about women's roles
 Perceptions of social norms

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 "blue hats," indicators of women's bargaining power but not factors that can be targeted to impact outcomes.

Many development projects have women's empowerment as one of their goals. Thus, examining participation in the projects as a measure of bargaining power has been used. For example, Osmani (2007) looks at participation in microcredit projects as a measure of bargaining power and considers its affect on land and asset ownership. While it is critical to understand how participation in projects affects outcomes, this also is fraught with empirical challenges. Individuals choose whether or not to participate in these programs, and those who choose to

participate may be different than those who do not participate. Thus, it might be these unobservable characteristics that determine participation that also determine the outcomes. In the following section, we discuss approaches to resolving these issues, particularly randomized evaluations of projects.

The dowry or brideprice that was paid at the time of marriage is often used as a proxy for bargaining power. Brideprice or dowry may capture many of the unobservable characteristics of the couple being married and their families at the time of marriage. It is not clear whether changing the brideprice or dowry would directly alter these underlying characteristics or change the bargaining power within the household. Zhang and Chan (1999) demonstrate that dowry in Taiwan increases the level of help that husbands provide with household chores, although there is no similar effect with bride price.

Similarly, 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. But the alcohol consumption may be just part of a broader set of underlying factors that affect her bargaining power.

In a somewhat different approach, Wu and Li (2011) use whether the mother's first child was a boy and whether she ever gave birth to a boy as a measure of bargaining power in China. They find that these measures have a positive impact on women's nutrition intake and health outcomes.

Another set of measures that proxy for women's bargaining power is the decision-making processes within the household. Above, we discuss these as outcome measures; but they are also used as measures of bargaining power. Whether or not women are able to make the decisions about whether or not to sell key assets (Reggio, 2010) 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. In Mexico, when mothers have the power whether to decide to whether to sell assets, daughters work fewer hours in the labor market. Joint decisions about what food to buy or cook resulted in higher body mass indices for children that situations where either the mother or father made the decision alone.

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, violence against women, etc. and use this as a correlate of bargaining power.

Finally, several studies try to create indices of power within the household. Patel et.al. (2007) look at the relationship between household power structure and child's body mass index (BMI) and instrument the former using the difference in education, expenditure, weight-for-age z-score, and height-for-age z-score between fathers and mothers of a household, the proportion of household assets owned by the mother, and the mother's share of total household expenditure in the previous 14 days and expenditure on durable goods in the last year. They find that when decisions over food acquisition are jointly made, children are better off compared to the cases where either the mother or the father makes the decision.

Causality

One goal of the empirical literature on the determinants and outcomes of women's intrahousehold bargaining power is ultimately to provide guidance to policy makers on the effective policy instruments that can strengthen women's position. This is a task that fundamentally depends on the rigorousness of the estimation techniques applied. To demonstrate the effects of policy or other factors on outcomes through women's bargaining power, three approaches are used.

Institutional Changes

The first approach is to use a change in policy or some factor outside of the control of the household or community and examine the impact that it has on outcomes. Women's legal rights are one such set of changes. For example, Rangel (2006) uses a change in marriage law in Brazil that extended alimony rights and obligations upon relationship dissolution to couples living in consensual unions as a source of redistribution of 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) to households composed of cohabiting couples (which were affected by the law) before and after the change in law. He finds that 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 gave daughters a status equal to that of sons in the rights to inherit family land. 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 assets 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. These analyses all take advantage of data from both before and after the policy change.

Prices and other market forces can also generate changes that can be analyzed. Qian (2008) explores a variation in female income due to an increase in price of tea (crop traditionally grown by women) generated by post-Mao agricultural reforms in China. She also analyzes a similar exogenous change in male specific income due to an increase in price of orchard based crops. She compares the sex ratios and educational attainment of boys and girls in cohorts born in tea planting communities is compared to those in non-tea planting communities before and after the agricultural reforms. Counties with more tea had higher ratios of girls to boys and those with more orchards has lower ratios.

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 that is not old enough to be 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.

Instrumental Variables Approach

The second approach is to find variables that correlate with the measure of bargaining power but not directly with the outcome measure. Many of the studies of determinants of household outcomes use this approach. As discussed above, rainfall patterns are used as instruments for agricultural income by Doss (2001b) and by 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.

Osmani (2007) studies the impact of participation in microcredit program in Bangladesh on land and non-land asset ownership. To deal with endogeneity in participation in microcredit program, the author uses the size of household labor force, number of dependents and principal occupation of the household (if non-farm self employment) as instruments and finds a positive effect on land ownership.

To investigate the relationship between women's assets and share of household expenditures that goes to children's clothing and education Quisumbing and de la Briere (2000) instrument for assets. For assets at marriage, they use husband's and wife's education, age, age squared, birth order, number of siblings, number of living brothers, husband's and wife's families' landholdings, and indicators of the educational attainment of their parents as instruments. For current assets, they use two alternative instrument sets. In the first set, they use assets at marriage as an instrument; in the second, they acknowledge its endogeneity and use only the set of instruments for assets at marriage. Asset ownership increases expenditures in children's clothing and education in the household.

One of the advantages of this approach is that often large sample household survey data sets include variables that can be used as instruments. However, researchers often use instrumental variables that do not resolve the problems associated with the initial measures of bargaining power.

Randomized Experiments

The final approach is to use randomized interventions to isolate the relationship of bargaining power and outcomes. In this approach, 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. It may also be at the individual level, as in Ashraf's game where the researcher randomly assigns participants to various groups.

PROGRESA is a well-studied case where the program was rolled out to allow researchers to exploit the randomization for evaluation purposes. Bobonis (2009) uses the fact that the cash transfer from PROGRESA was randomly distributed among the households in the selected communities to identify the causal effect of higher income on the measure of women's well-being, the household expenditure share on adult female clothing.

Ashraf (2009) analyzes the role of information and communication in the bargaining process on intrahousehold financial decisions in Bangladesh. The author chooses randomly those couples for which information on the financial decision-making is kept private from the spouse, those who will know each other's decisions but won't be able to communicate and those that will be able to negotiate before making their decisions. They find evidence of strategic behavior between spouses. In their controlled setting, the researchers can randomize the information that each spouse has.

As randomized control trials have become viewed as the "gold standard" of project evaluation, a number of concerns have been raised about when they are the appropriate means to determine

whether a project is effective. A general consensus is emerging that they are powerful tools of evaluation under some circumstances, but that because they cannot answer all of the relevant policy questions, they must be used as one piece of the toolkit along with other evaluation approaches. (See Ravallion 2009 and Barrett and Carter 2010 for discussions of the limitations of these approaches.)

Evaluating Programs

In this final section, we evaluate and provide guidance on how to assess women's bargaining power and its impacts within programs and surveys.

The most conclusive way to determine the effects of a policy on outcomes is to design the implementation of the policy or program so that it can be evaluated in the ways described above. If the policy is an institutional change, then having data available on households both before and after the change is preferred. In addition, if the policy can be implemented in such a way as to affect some groups but not others, then it would be possible to examine the changes within each group – those affected and those not affected – before and after the implementation. Or 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 did 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, qualitative information, from interviews and focus groups, can help to identify the correlations that are simply "blue hats" and those that may have a causal relationship. While in some sense it would be ideal to be able to rigorously prove that every policy or program intended to strengthen women's bargaining power has a demonstrable impact, in practice, this would not be a good use of limited resources. Instead, we should continue to do these rigorous analyses where possible to provide insights into these relationships in specific settings, and then implement programs based on these results and evaluate the broader correlations that result.

Regardless of which approach is used, individual and household level data will be necessary to analyze these relationships. Having sufficient data that is available at the individual level, and not just the household level, will promote a better understanding of the relationship between women's bargaining power and key outcomes.

One question is whether it is necessary to collect data specifically to examine a particular issue or whether sufficient data is available to analyze it. Large sample household surveys are

available in many countries on a range of specific topics, such as consumption or health. Multi-purpose surveys, such as the World Bank Living Standard Measurement Surveys may also be available. These types of surveys have been used to analyze a range of issues. The studies discussed above include analyses of data from the China Rural Poverty Survey, The Chinese Agricultural Census, the Demographic and Health Surveys (from several countries) the Indonesia Family Life Survey, the Ghana Living Standards Survey, Ivorian Living Standards Survey, the Taiwan Women and Family Survey, the Uganda National Household Survey, among others.

These surveys are usually designed to be nationally representative and to encompass questions that can be used for a wide range of analyses. The advantage of these surveys is that they are already available, usually with extensive documentation. Since they are widely used, it is possible to compare results with others doing similar research. The disadvantages are that the specific data needed may not be available. For example, while the surveys on health may have detailed health information at the individual level, they may not include adequate measures of bargaining power or variables that can be used as instruments for these measures.

The other option is collect data specifically to analyze the issue in question. Many of the papers discussed are based on surveys collected either by the authors themselves or by a specific project. This allows for the survey to be designed specifically to answer the necessary questions. Key variables and instruments for the variables can be included. But the sample size is usually considerably smaller and the breadth of questions may not be available.

In considering data sets, it is useful to consider the specific questions that are included or that you might ask if conducting a survey for the project. This section will touch on some of the issues discussed above, but will focus on the structure of the questions, rather than the concept that is being measured.

As discussed in the outcomes section above, a variety of consumption data is available in large-sample surveys. These may be detailed expenditure surveys or multi-purpose surveys that include an expenditure module. Key features of consumption data that is useful for measuring bargaining power are:

- Questions that ask about individual consumption of goods: transportation, health expenses, education expenses, cell phone use, meals eaten away from home, etc.
- Items categorized so that they can be grouped by age and gender; e.g men's, women's and children's clothing instead of shirts/blouses and pants/skirts.
- Individual food consumption may be part of nutrition surveys. This data can be more difficult to collect, but is useful to analyze actual food consumption outcomes.

Large sample surveys also often include detailed information on income. The key with income data is to collect it in such a way that as much of each of these categories can be attributed to individuals.

- Wage income (cash and in kind), including benefits
- Agricultural income; information on crops by plot, and labor by plots are the minimum needed.
- Self employment income
- Business income
- Transfers in and out of the household, identifying both the sender and recipient.

Wage income is frequently collected at the individual level. On the other hand, agricultural income is often collected only at the household level. Without attributing income to the individual farmer or to a particular plot or crop, it is difficult to identify the relationships with bargaining power and outcomes. To analyze bargaining outcomes in agricultural households, it is useful to have as much of the input and output data as possible collected at the individual rather than the household level. Rather than just collecting income information for household businesses as a whole, it is useful to have a means to apportion it to individual household members, based on labor or management contributions.

Much asset data is only collected at the level of the household. Some recent efforts are being made to begin to collect additional data at the individual level.⁷ Some surveys now go beyond simply asking whether the household owns land, but asks who within the household owns land, either individually or jointly. Where some land is deeded, it is useful to ask both who within the household owns land and whether there is an ownership document. If there is a document, knowing the name(s) listed on it provides additional relevant information. Savings account information is often asked at the individual level. But it is rare to ask about other important assets, such as housing and livestock, at the individual level.

Key questions on asset ownership include:

- Land Ownership, by plot or parcel, at the individual level
- Rights associated with the land, by plot/parcel and individual owner
- Documentation of land ownership, including names on documents
- Ownership of dwelling, by individual
- Ownership of other real estate or land, by individual
- Ownership of livestock, by individual

⁷ For example, the project In Her Name, funded by the Dutch Foreign Ministry MDG3 fund, is collecting individual level data on all physical and financial assets for households in Ecuador, Ghana, and Karnataka, India. See <http://genderassetgap.iimb.ernet.in/#>

- Ownership of key business assets, by individual
- Ownership of key consumer durables, by individuals, incl. vehicles, cell phones, etc.
- Savings accounts and financial assets, by individual

Additional information about the rights over assets may be useful for intrahousehold bargaining analyses. Since the meanings of ownership may vary by context, having information on reported ownership and possession of an ownership document may be supplemented with information on the rights that the respondent has over the asset. It is critical to have this for agricultural land, but, depending on the context, it may also be useful to have it for livestock, business assets, etc.

To understand the bargaining that occurs across generations, data is needed on the transfers across generations. These transfers may be across generations within the same household, or within the same family but among parents and adult children living in separate households. This data would need to include basic demographic and economic data on both households and should include:

- Transfers of land, businesses, housing, and other assets through inheritance
- Transfers of land, businesses, housing, and other assets while parents are still living
- Educational attainment of children
- Transfers of goods in and out of the household, by sender and recipient
- Provision of care by adult children to elderly parents

Transfers across households are not necessarily intergenerational transfers. While a number of surveys collect information on transfers between households, the data is usually only collected from one of the households. It may ask questions about transfers out and transfers in and occasionally collect some information on the receiving and sending households. But this information is usually much less detailed than on the household being surveyed. This makes it challenging to understand the relationships between households and how bargaining power affects decisions across generations when they live in separate households. The work done by Quisumbing, Estudillo and Otsuka (2003) in Ghana, the Philippines and Sumatra, Indonesia asks responding households about transfers of land across generations; that received by the respondent from his or her parents and those that the respondent has given or plans to give to his or her children.

Questions about household decision-making provide insight into the processes of intrahousehold bargaining and resource allocation. The typical approach is to specify a number of decisions and ask if the respondent makes them alone, with someone else, or not at all. These decisions may include:

- Who decides about expenditures on large items?
- Who decides about expenditures on small items?
- Who makes the decisions about children's education?

In addition, questions about women's autonomy may be relevant. These include questions such as:

- Can you travel to visit your family and friends?
- Can you go to the market alone?
- Can you go to a health clinic for your own health needs?
- Can you take your children to a health clinic alone?

Finally, questions about the perceptions of women's roles, rights and responsibilities may also be useful as a proxy for bargaining power. Women with more bargaining power may respond positively to questions such as:

- Do women have the right to inherit land?
- Do women have the right to leave their husband if he beats them?
- Should girls be educated through secondary school?

These should be considered indicators of women's bargaining power. There is little evidence that these are causally related to bargaining power, although the processes of education and legal literacy may be empowering for women.

To better understand intrahousehold bargaining, it would be very useful to have panel data that incorporates both the relevant outcome measures and the measures of women's bargaining power. This would allow for analyses of how changes that may affect women's bargaining power affect outcomes. Panel data alone won't resolve all of the problems with assigning causality, but can provide some insights into the dynamic processes of household decision-making.

Conclusions:

It is challenging to empirically demonstrate that women's bargaining power has a positive impact on desired outcomes. Yet, considerable evidence indicates that intrahousehold dynamics do affect household decisions. Thus, development programs must consider how they affect the bargaining power of individuals within households and the further relationship to the outcomes.

The analyses that are sufficiently rigorous to meet the standards of the economics profession often take advantage of unusual natural experiments that allow for the causality issues to be addressed in very specific and usually very limited setting. Many of the research questions that are asked are interesting for an academic audience, but may be less directly useful for policy purposes. Randomized control trials can provide additional information. Yet, relatively few of these experiments have 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.

The many other papers, which are less econometrically rigorous, provide additional useful information towards policy making. Given that we have convincing evidence that bargaining power is important in some specific cases, we should be more willing to accept that bargaining power plays a role, even when the evidence is based more on correlation than causation.

There is sufficient evidence against a unitary model of the household that it should only be used when it can be justified in a particular instance and for a particular question. Generally, it should be assumed that intrahousehold dynamics are important. There are empirical examples when noncooperative outcomes or nonefficient outcomes result. But in other instances, it appears that cooperative results do hold. There are sufficient examples of noncooperative/nonefficient outcomes that it should not be simply assumed that a cooperative/efficient outcome holds.

The measures that are used for women's empowerment and for women's bargaining power are often empirically the same. Some of the measures of empowerment are actually measures of whether the women act as though they are empowered – whether women are involved in decision-making and their beliefs and perceptions about women's rights and roles.

Taken together, 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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