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WOMEN'S ASSETS AND INTRAHOUSEHOLD ALLOCATION IN RURAL BANGLADESH: TESTING MEASURES OF BARGAINING POWER

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ABSTRACT

This paper examines how differences in the bargaining power of husband and wife affect the distribution of consumption expenditures in rural Bangladeshi households. Two alternative measures of assets are used: current assets and the value of assets brought to marriage. Results show that both assets at marriage and current assets are strongly determined by the human capital of husband and wife and the characteristics of their origin families. For both husband and wife, parents' landholdings are a consistent determinant of both assets at marriage and current assets. Contrary to the unitary model, husband's and wife's assets have different effects on the allocation of expenditures within the household. Wife's assets have a positive and significant effect on the share of expenditures on children's clothing and education. This result is robust to the choice of asset measure and estimation procedure. After endogeneity of assets is accounted for, husband's current assets have a positive and significant effect on the food expenditure share. Neglecting the endogeneity of asset measures to individual and parental characteristics may lead to biased estimates of the impact of men's and women's assets on expenditure shares.

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1. INTRODUCTION

A growing literature has attempted to test the validity of collective versus unitary models of the household (see Strauss and Thomas 1995; Haddad, Hoddinott, and Alderman 1997, for reviews). The unitary model, sometimes called the "common preferences" model, is based on the notion that either all household members share the same preference function or that a single decisionmaker acts for the good of the entire household. In collective models, on the other hand, different decisionmakers within the household have different preferences. When these individual preferences are aggregated up to the household level, the collective model predicts that the distribution of household consumption among individuals—their share of the pie—reflects their bargaining power.

Attempts to measure the bargaining power of individuals within the household have therefore been central to tests of collective models. Various studies have attempted to use exogenous policy shifts that affect different individuals within the household (Lundberg, Pollak, and Wales 1997[1]), shares of income (Hoddinott and Haddad 1991[2]), unearned

[1] Lundberg, Pollak, and Wales (1997) examine the effect of a policy that effectively transferred the child allowance from men to women in the United Kingdom in the late 1970s. They find that it increases the share of expenditures on women's clothing and children's clothing relative to men's clothing.

[2] Haddad and Hoddinott's (1994, [Hoddinott and Haddad] 1995) work on Côte d'Ivoire used the difference in the educational attainment of the head and spouse, the proportion of landholdings and household business capital operated by adult women, the ratio of the spouse to the male head's education, and other dummy variables related to wife's schooling as instruments for the share of women's income.

income (Thomas 1990; Schultz 1990[3]), inherited assets (Quisumbing 1994[4]), assets at marriage (Thomas, Contreras, and Frankenberg 1997[5]), and current assets (Doss 1997[6]).

None of these measures is perfect. Labor income, which has often been included in computations of income shares (e.g., Kennedy 1991), is clearly problematic because it reflects time allocation and labor force participation decisions. Several studies (e.g., Thomas 1990; Schultz 1990) use nonlabor income (also called unearned income or nonwage income), either directly, or as an instrument for total income (Thomas 1993). Schultz (1990) and Thomas (1990) assume that nonearned income is independent of tastes and labor market conditions, which may not be true if much of nonearned income is from pensions, unemployment benefits, and earnings from assets accumulated over the life cycle. However, these concerns may be less critical in studies that focus on children (and households early in the life cycle) and in those that rely on measures of wealth that are typically inherited or given at the time of marriage (Strauss and Thomas 1995).

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[3] Thomas (1990) and Schultz (1990) use unearned income: Thomas (1990) tests the collective model by examining the effects of unearned income of men and women on nutrient intakes, fertility and child survival, and child anthropometrics, while Schultz analyzes the differential effects of men's and women's unearned income on labor supply and fertility in Thailand.

[4] Quisumbing (1994) examines the intrahousehold distribution of land and education as a function of father's and mother's education and inherited landholdings in the Philippines.

[5] Thomas, Contreras, and Frankenberg (1997) examine whether assets brought to marriage by husband and wife have a differential impact on child health in Indonesia.

[6] Doss (1997) examines the effects of current assets on the distribution of expenditure among different consumption categories in Ghana.

Current asset holdings, used by Doss (1997) in her study of Ghanaian households, may also be affected by asset accumulation decisions made within marriage.[7] Depending on provisions of marriage laws, assets acquired within marriage may be considered joint property and will not be easily assignable to husband or wife. The validity of inherited assets as an indicator of bargaining power may be conditional upon the receipt of these assets prior to marriage, unless bargaining power also depends on the expected value of inheritance.[8] Inherited assets could also be correlated with individual unobservables, such as previous investments in the individual during childhood (Strauss and Thomas 1995). Finally, assets brought to marriage, while exogenous to decisions made within marriage, could be affected by assortative mating and marriage market selection (Foster 1996).

Finding the appropriate indicator of bargaining power should be guided not only by the need to find a variable that is exogenous to bargaining occurring within marriage, but more importantly by the cultural relevance of these indicators. Increasingly, economists are turning to ethnographic evidence and qualitative methods used by sociologists and anthropologists to guide the construction of appropriate measures of bargaining power.[9]

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[7] One of her sensitivity tests uses a specification with the percentage of land owned by women, but landownership by women in Ghana may be endogenous to marriage. In Western Ghana, Quisumbing et al. (1998) show that women obtain strong individualized land rights, equivalent to private ownership, from their husbands if they help in establishing cocoa fields. Husbands "give" their wives land to circumvent traditional inheritance practices among the matrilineal Akan.

[8] Admittedly, a potential heir could exert much power within his or her household, but the threat of disinheritance does exist.

[9] See, for example, Rao's (1997) analysis of wife-beating in South India, which uses a combination of qualitative and econometric methods.

Based on anthropological evidence from the rural Philippines, Quisumbing (1994) argues that inherited landholdings are a valid measure of bargaining power, since land is usually given as part of the marriage gift and major asset transfers occur at the time of marriage. Thomas, Contreras, and Frankenberg (1997) used ethnographic evidence and focus-group discussions in Indonesia to identify areas where women bring substantial asset holdings to marriage, and where they can claim these assets upon divorce. Noting that if male or female "income" is measured with error, estimated income effects will be biased, Frankenberg and Thomas (1998) investigate the possible biases from reporting spouse's assets by interviewing husbands and wives separately and comparing their responses in the Indonesian Family Life Survey. However, assets controlled by the couple may not be the only relevant variable. In societies where the extended family is a key player in intrahousehold allocation, such as those in South Asia, characteristics of the extended family may affect intrahousehold allocation outcomes.[10]

This paper contributes to this debate by examining how differences in the bargaining power of husband and wife affect the distribution of consumption expenditures in rural Bangladeshi households. We test two alternative measures of assets: current assets and the value of assets brought to marriage. We use new survey data from a four-round household survey in 47 villages in three sites in Bangladesh.[11] We constructed these

[10] In Bangladesh, for example, where related households (the *bari*) typically live around a common yard, landownership and education of the head in origin households affect educational attainment of children in partitioned households (Foster 1993).

[11] Each site was part of an impact evaluation of programs disseminating new agricultural technologies. For more about the main study, see IFPRI-BIDS-INFS (1997, 1998).

measures from a module on family background, marriage, and inheritance that we designed based on a qualitative study conducted in parallel with the main household survey (Naved 1997). Recognizing that both current assets and assets brought to marriage may be endogenous, we examine the extent to which characteristics of husbands and wives, as well as their families of origin, affect assets brought to marriage. We also investigate whether current assets are determined by assets brought to marriage and individual, household, and extended family characteristics. We then use the information on family background of both spouses as instruments for the asset measures and investigate the robustness of these coefficients to various specifications of assets.

We find that both assets at marriage and current assets are strongly determined by the human capital of husband and wife, and, more importantly, the characteristics of their origin families. Parent's landholdings (for both husband and wife) are a consistent determinant of both assets at marriage and current assets, suggesting that extended families not only arrange marriages, but may also have substantial influence on outcomes within the marriage. We also find evidence for differential effects of husband's and wife's assets on the allocation of expenditures within the household, after controlling for total expenditure. Wife's assets have a positive and significant effect on the share of expenditures on children's clothing and education. This result is robust to the choice of asset measure and estimation procedure. After endogeneity of current assets is accounted for, husband's current assets have a positive and significant effect on the food expenditure

share. A more disaggregated analysis of the food category shows that this result is driven by expenditures on cereals, the main source of dietary energy.

We begin with a brief outline of the theoretical framework underlying our empirical strategy in Section 2. We describe the data and associated data collection methodology in Section 3, and present the regression results in Section 4. Section 5 concludes.

2. THEORY AND EMPIRICAL SPECIFICATION

THEORY

Suppose that we have an agricultural household with two individuals, *h* and *w* (husband and wife, respectively). Under the unitary model, all members of the household share the same preferences (or all decisions are made by a dictator).[12] Household members derive utility from the consumption of a vector of individual commodities **x** (which includes goods and leisure), influenced by a vector of household characteristics **ã**, some of which are unobservable. The household's utility function is given by

$$U(\mathbf{x}; \tilde{\mathbf{a}}), \tag{1}$$

which is maximized subject to an income constraint,

[12] It can be argued that in extremely patriarchal societies, where practically all household resources are controlled by the husband, a unitary model of decisionmaking holds. Moreover, preferences could be shaped such that the wife has the same preferences as the husband, as a pragmatic way to achieve domestic harmony. Whether the unitary model is relevant in this situation, however, needs to be empirically verified.

$$Y = y_j + y_h + y_w \, . \tag{2}$$

Total household income is composed of joint income y_j and individual income y_h and y_w. Since preferences are identical, and income is pooled, maximization leads to a series of demand functions for x, which are a function of prices $\boldsymbol{p}$ and total household income Y, and household characteristics ã.[13]

$$x_i = x_i \, (\boldsymbol{p}, Y; \tilde{\mathbf{a}}) \, . \tag{3}$$

For a given set of prices and pooled income, resources are allocated to household members according to their ability to translate those resources into goods from which the household derives utility.

In the collective model, on the other hand, different decisionmakers may have different preferences. Moreover, there is no unique household welfare index to be interpreted as a utility function, thereby allowing the index to be dependent on prices and incomes as well as "tastes" (Chiappori 1992). More formally, in the most general class of collective models, the utility of each household member depends on their own and possibly other members' consumption of a vector of goods **x**, which includes leisure and home

[13] That is not to say that the identity of the income earner is unimportant in unitary models. If the price of leisure, (wage), of *h* and *w* differ, then changes to the wage of either is likely to have different demand impacts for other goods, due to gender-specific cross price effects with wages.

produced goods.[14] Suppose that there are two people in the household, *h* and *w*. Household welfare will be given by

$$\text{Max } ø\ [U_h\ (\mathbf{x};\ ã),\ U_w\ (\mathbf{x};ã)], \tag{4}$$

where ø is a Bergson-Samuelson type of utility function. Each individual's consumption depends on consumption of goods and leisure, and is influenced by observable and unobservable household characteristics. The household maximizes welfare given a budget constraint (2), which assumes that income is composed of individual incomes and joint income y_j. The resulting demand functions are then a function of the vector of prices **p**, individual and joint incomes y_j, y_h, y_w, and household characteristics **ã**.

$$x_i = x_i\ (\mathbf{p},\ y_j,\ y_h,\ y_w;\ \mathbf{ã}). \tag{5}$$

In this general model, no restrictions are imposed on the effects of individual incomes. This is in contrast to the unitary model, where the coefficients on y_h and y_w should be zero. Testing whether $y_h = y_w = 0$ is a test of income pooling, an empirical test of the unitary model.

Collective models fall into two categories: cooperative or noncooperative. In the cooperative approach, individuals have a choice of remaining single or of forming a

[14] This exposition follows Thomas and Chen (1994) closely.

household or other grouping. They choose the latter option when the advantages associated with being in a household outweigh those derived from being single.[15] The existence of the household generates a surplus, which will be distributed among its members; the rule governing this distribution is the central issue of the analysis. The noncooperative approach (Ulph 1988; Kanbur 1991; Carter and Katz 1997; Lundberg and Pollak 1993) relies on the assumption that individuals cannot enter into binding and enforceable contracts with each other. Instead, an individual's actions are conditional on the actions of others. The conditionality of action implies that not all noncooperative models are Pareto optimal. However, work by McElroy suggests that this is not as serious as it may seem because noncooperative solutions can serve as threat points in cooperative models. As McElroy (1990) notes, dissolution of the group is not a credible threat in a cooperative bargaining model in the context of small daily decisions.[16]

Two subclasses of cooperative models have emerged. Models of the first category suppose that household decisions are always efficient in the (usual) Pareto sense. Nothing is assumed a priori about the nature of the decision process; the distribution rule governing intrahousehold allocation is estimated from the data rather than postulated a priori. This more general viewpoint is especially convenient for assessing the relative suitability of the

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[15] The distribution of gains within marriage is a common application of cooperative models. However, it is possible that individuals (particularly females) may not have a choice about getting married or forming a household. One can argue that, in many contexts, the decision to marry or form a new household may be motivated by non-economic factors, such as society's views of individuals who do not marry.

[16] Interestingly enough, whether a divorce threat is credible or not is certainly asymmetric in Bangladeshi society. A man can easily divorce his wife by saying “Talak” (divorce) three times. While a woman can also divorce her husband, such instances are rare.

competing frameworks. The efficiency hypothesis in particular is sufficient to generate strong testable restrictions on household behavior (Chiappori 1992).

Models of the second subclass impose more structure on the household by representing household decisions as the outcome of some bargaining process. Then the division of the gains from marriage can be modeled as a function of the "fallback" or "threat point" position of each member. The vast majority of bargaining models rely on a Nash solution (Nash 1953).[17]

Since we are interested in the role of assets in determining bargaining power, the Nash-bargaining model provides a convenient point of departure. Consider two individuals, *h* and *w*, who are not (yet) married to each other. As individuals not cooperating in any activities, their utility functions are

$$U_h^0(x_0, x_h, L_h) \text{ and } U_w^0(x_0, x_w, L_w), \tag{6}$$

respectively. Here, x_h is a good consumed by *h* (such as food, water, or health care), x_w is a good consumed by *w*, L_h and L_w are leisure, and x_0 is a public good consumed both when

[17] The Nash-bargained solution can also be reached through more complex negotiating procedures. Under quite general conditions, Harsanyi and Selten (1987) show that a sequential bargaining process converges to the Nash-bargained solution, if one exists. The Nash-bargaining model is more restrictive than the class of Pareto-efficient household models described by Chiappori (1992) and tested by Thomas and Chen (1994) and Bourguignon et al. (1994). If we assume only that household allocations are Pareto efficient, but individuals have different preferences, household demands should be affected only by prices and individual components of unearned income (Thomas 1990). A test of the equality of unearned income effects suffices to test the common preference model against a broad class of alternatives, but is not a specific test of bargaining models. We will test less restrictive versions in subsequent work.

individuals cooperate and when they do not. Let **p** be a vector of the prices of all goods, ***w*** be the wage rates of *h* and *w*, and N_h and N_w, their respective nonwage incomes. Unearned incomes are used as arguments rather than total income because the former will not be affected by labor supply decisions. If *h* and *w* do not cooperate, their individual utility functions are each maximized subject to their individual full income constraints. We can write their indirect utility functions as

$$V_h^0(p_0, p_h, w_h, N_h; \acute{a}_h) \text{ and } V_w^0(p_0, p_w, w_w, N_w; \acute{a}_w). \tag{7}$$

The V^0's are interpreted as "threat points," the utility obtained independent of cooperation,[18] while the á's are referred to as extra-environmental parameters (EEPs). In the context of household formation, these EEPs affect the relative desirability of being single and may include access to common property resources and divorce laws.

Now suppose that these two individuals (or their extended families!) are considering marriage. Marriage would be beneficial if there are economies of scale associated with the production of certain goods (household or nonhousehold), or there may be some goods that can be produced and shared by couples but not by single individuals. An example would be children in cultures where single parenthood is not well accepted. Denote utility

[18] Manser and Brown (1980) and McElroy and Horney (1981) interpret the threat point as the utility associated with divorce, while in noncooperative models, e.g., Lundberg and Pollak (1993), the threat point could correspond to a noncooperative outcome within marriage, such as reverting to traditional gender roles.

functions when cooperating in a joint activity as U_h and U_w, respectively, where U is defined over the household public good and individual consumption of goods and leisure.

Both individuals gain from marriage when $U^j - V^j > 0$, and $j = h, w$. We assume that the male and female agree to maximize a "Nash utility gain product function." This takes the form of $M = (U_h - V_h)(U_w - V_w)$. This is maximized subject to a joint full income constraint, namely

$$p_0x_0 + p_hx_h + p_wx_w + w_hL_h + w_wL_w = (w_h + w_w)T + N_h + N_w. \quad (8)$$

This yields demand functions (for, say, food, clothing, health care) of the following form:

$$x_i = x_i(\mathbf{p}, \mathbf{w}, N_h, N_w; \acute{a}_h, \acute{a}_w); \quad I = 0, h, w; \quad (9)$$

$$L_i = L_i(\mathbf{p}, \mathbf{w}, N_h, N_w; \acute{a}_h, \acute{a}_w); \quad I = h, w. \quad (10)$$

In addition to prices of goods and leisure, these demand functions include the extrahousehold environmental parameters, and individual nonwage incomes affect both the threat points and the demand functions. In this study, we focus on the role of assets of husband and wife as measures of individual nonwage incomes. Since extended families, rather than the couple themselves, are involved in the choice of the spouse, we also test whether characteristics of the extended family influence the assets that each spouse brings to the marriage. We discuss our asset measures in greater detail below.

EMPIRICAL SPECIFICATION

To test our model and estimate a system of demand functions similar to equation (9) above, we estimate the following expenditure function:

$$w_j = \alpha_j + \beta_{1j} \bullet \ell\text{npcexp} + \beta_{2j} \bullet (\ell\text{npcexp})^2 + \beta_{3j} \bullet \ell\text{nsize} + \beta_{4j} \bullet \ell\text{nA}_h + \beta_{5i} \bullet \ell\text{nA}_w + \sum_{k=1}^{K-1} \delta_{kj} \bullet \text{dem}_k + \sum_{s=1}^{S} \varepsilon_{sj} \bullet z_s + e_j$$

where

w_j = the budget share of the jth good;

ℓnpcexp = the natural logarithm of total per capita expenditures, and

$(\ell\text{npcexp})^2$ = its square;

ℓnsize = the natural log of household size;

ℓnA_h and ℓnA_w = the natural logs of assets owned by the husband and wife, respectively;

dem_k = the proportion of demographic group k in the household; and

z_s = a vector of dummy variables indicating household location and survey round;

e_j = the error term; and

α_j, β_{1j}, β_{2j}, β_{3j}, β_{4j}, δ_{kj}, and ε_{sj} are parameters to be estimated. We include the square of ℓn per capita expenditure so that any observed differences in the effects of individual assets would not be simply picking up nonlinearities in the Engel curve (Thomas and Chen 1994). Controlling for levels of household income (as proxied by per capita expenditure),

if the unitary model holds, assets of husband and wife should have no effect on allocations, so $\hat{a}_{4j} = \hat{a}_{5j} = 0$.

We discuss estimation issues such as variable definitions and endogeneity of regressors below.

3. DATA

SAMPLE AND DATA COLLECTION METHODS

We use new household survey data from 47 villages in three sites in Bangladesh, each site chosen as part of an impact evaluation of programs disseminating new agricultural technologies. Commercial vegetable technologies are being disseminated in Saturia *thana*, Manikganj district, referred to below as "Saturia," while polyculture fish production technologies are being provided in two sites, Jessore Sadar thana, Jessore district, referred to below as "Jessore," and Gaffargaon *thana*, Mymensingh district and Pakundia and Kishoreganj Sadar *thanas*, Kishoreganj district, referred to as "Mymensingh" below, in combination with specific extension programs for disseminating these technologies.

Agricultural technologies and extension programs at each site are unique, resulting in three case studies that may be compared. In two sites (Saturia and Jessore), technologies are being introduced through NGO programs targeted exclusively to women, who are provided training and credit. At the third site (Mymensingh), project and

Department of Fisheries extension agents provide training to relatively better-off households and training with credit to relatively poorer households, directed at both men and women, but men more often than women. The primary distinction between the two polyculture fish production sites, however, is that in Jessore, the NGO (Banchte Shekha) has arranged long-term leases of ponds that are managed by groups of women (ranging in number from five to twenty). In Mymensingh, ponds are owned and managed by single households or households that have shared ownership.

In each of these three sites, selection of households for the survey was preceded by a census of households in villages where NGOs had introduced the technology, and comparable villages where the NGO was operating, but had not yet introduced the technology. In each site, three groups of households were selected: adopting households (members of the NGO under study), likely adopter households in the villages where the technology was not yet introduced, and a cross-section of all other non-adopting households representative of the general population in the villages under study. For households in each of these groups, a four-round survey collected detailed information on production and other income earning activities by individual family member, expenditures on various food, health, and other items, food and nutrient intakes by individual family member, time allocation patterns, and health and nutritional status by individual family member. In the second round, information on parental and sibling background was also collected for both the husband and wife.

Between the second and third survey rounds, a parallel study using qualitative methods was also conducted in a pair of villages (one adopting, or "program" village, and one non-adopting or "control" village) in each of the three sites to elicit group members' views on the effects of the NGOs and the new technologies on incomes, education and health of children, women's status and empowerment, among others (Naved 1997). We drew from the results of the qualitative study to formulate questionnaire modules on premarriage assets, transfers at marriage, inheritance, and indicators of women's mobility and empowerment. We also used modules from the questionnaire on women's empowerment implemented by Schuler, Hashemi, and Riley (1997) and the London School of Hygiene and Tropical Hygiene's Dhaka Urban Livelihoods Survey. The survey modules were then reviewed by Naved and pretested with one or both of us present prior to fielding the last round of the survey. Although many of the questions asked were sensitive, since these modules were fielded in the fourth round (one year after the first round), both male and female enumerators had been able to establish rapport with their respective (male and female) respondents.

VARIABLES AND DESCRIPTIVE STATISTICS

We restrict the following analysis to the monogamous households where both husband and wife are present and no change in household structure or marital status

happened during the four survey rounds (divorce, separation, death of a member, second marriage).[19] Our sample of intact couples with complete assets information consists of 826 households, of which 29 percent are three-generation households.

Means and Standard Deviations

Table 1 shows means and standard deviations of the variables used in the expenditure shares regressions. In this low-income country, food expenditures account for a high proportion of the budget, 68 percent in this sample.[20] We also have detailed information on nonfood expenditures. Among nonfood items, clothing and footwear account for almost 7 percent, housing, 4 percent, and health expenditures, 3.5 percent. The low amounts spent on education reflect the gratuity of primary schooling in Bangladesh.

The disaggregation of clothing and footwear into men's, women's, and children's clothing makes it possible to analyze whether differences in bargaining power affect commodities consumed by specific demographic groups. The services category includes payments for domestic servants, while "personal care" refers to personal items such as

[19] This obviously does not address issues of household formation and dissolution (Foster and Rosenzweig 1997), nor the possibility that intact couples are those where bargaining has been "successful." We do not deal with the sample selection biases introduced by analyzing only intact couples. While we attempted to construct a similar set of variables for deceased, absent, or divorced spouses by recall, these measures are less reliable than those collected for "intact" couples.

[20] Total monthly expenditure per household is 3,577 taka. With an average household size of 5.5, expenditure per capita per month would be 650.29 taka, or 7,800 taka per capita per year (US $180 per capita). This is slightly lower than the average for the sample as a whole, which is $190 per capita per year.

soap, shampoo, and the like. The “celebration” category includes cash gifts, taxes (a negligible percentage), and expenditures on family events such as weddings and feasts (e.g., Ramadan and Eid, which were covered by the third survey round). Since rent on owner-occupied housing was not imputed, housing expenditures, which only capture repairs and new construction, may be understated.

Measures of Current Assets

In the first survey round, the head of household provided a detailed inventory of land owned and operated. Information about mode of acquisition and individual owner was provided as well as an estimate of the plot's value. The same type of information was collected about animals, including poultry, sheep and goats, and cattle. In addition, the head of household provided an inventory of 30 types of durable goods and capital equipment owned in the household. The head of household also gave an estimate of the assets' value and identified the owner.

In the case where assets are owned jointly with some nonhousehold member, only the share accruing to the household was included in our computations. When ownership was not assigned, the asset was considered household property, including when it was specified as a "couple's property." This inventory includes inheritances, purchases, gifts, home production, and government or relief transfers. All asset values are reported in 1996 taka.

Appendix Tables 13 and 14 show the distribution of assets among husbands, wives, other household members, and "joint-owners." Apart from household durables, the most frequently owned assets are jewelry (81 percent), agricultural equipment (55 percent), large trees (48 percent) and vehicles (42 percent). Seventy percent of the wives own jewelry and 15 percent own household durables. Irrigation and agricultural equipment are most often considered a joint asset. Between 72 percent and 88 percent of wives own some poultry while less than 10 percent own some kind of cattle in Jessore and Saturia.

Reported asset values are summarized in Table 2. Households in Mymensingh appear wealthier than the residents of Jessore and Saturia, mainly due to larger landholdings (174 decimals versus 90 in Saturia and 78 in Jessore, on average). On average, wives' total wealth represents approximately 10 percent of the household's wealth, with land the most unequally distributed asset (less than 5 percent of the household's land in all sites). Wives in Mymensingh own the smallest share of all assets (less than 1 percent of household land, 32 percent of animals, 10 percent of durables) while Saturia women own the largest share of animals (43 percent) and durables (20 percent). In Saturia, while the proportion of the value of household durables owned by wives is the highest, husbands declare ownership of 52 percent of the total household assets in contrast to the other two sites, where the bulk of the assets is reported as joint property.

Measures of Assets Brought to Marriage

In the fourth survey round, respondents were asked to recall the assets they owned before their wedding (land, cattle, “durables”—jewelry, clothes, and household utensils—for both husband and wife, and in addition, houses for men and food items for women).[21] Both male and female respondents also provided information about their premarital occupation and experience in farming, day-labor, or other business activities. In addition, they had to compare the wealth of their family and their future spouse's family at the time of wedding (results not reported).

Table 3 reports the proportion of individuals who owned land, house, cattle, durables, and food (for women) as well as the average value of these assets. Cattle accounts for the bulk of male premarital assets, especially in Saturia where over three-fourths of the men owned some cattle before they got married. Approximately one-fifth of the men own a house when they get married, with a slightly larger proportion (25 percent) in Saturia. Durables are a frequent asset in Saturia. Land is seldom owned before marriage, reflecting the fact that most sons live on their parents' farm when they get married and that most land inheritance occurs upon the death of a parent, which is usually after the son’s marriage.

Female premarital assets are much less valuable than male. They most often consist of food (84, 69, and 62 percent in Saturia, Mymensingh, and Jessore) and durables.[22]

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[21] This information was complimented with the data on inherited assets. When inheritance happened prior to the marriage, these assets were added to the premarriage assets if not reported in the corresponding module.

[22] A bride will typically bring stores of grain and other food items with her when she moves to her in-laws’ compound.

Even though the house was not included in the list of wives' assets, the value of the house in which the newlywed couple lived was attributed to her when it had been constructed by her parents. The gap between female and male premarital assets is largest in Mymensingh (a 40-fold difference).

In addition, a specific module about transfers at marriage was administered to the female respondents. Asset categories for these modules were complemented by specific questions about jewelry (nose pin) and cash (*shelami*) exchanges at the moment of the wedding. These specific assets were suggested by the qualitative analysis. The transfers to the bride and groom were computed by summing up all transfers to each individual and assigning to each individual half of the transfers reported "to the couple."

Data presented in Table 4 point to larger transfers to the bride at the time of marriage, the largest average transfers (6,395 taka) occurring in Saturia. Since only the wife was interviewed about these transfers, she might not have known about all transfers from her family to her husband's family.[23] For earlier marriages, recall bias and asset valuation might also lead to measurement errors. For the present analysis, we included those transfers that are comparable to the previous asset categories as well as cash

[23] We administered the module on transfers at marriage only to wives, to avoid overloading the male respondents' questionnaire. The wife was asked about five categories of transfers: to the bride, to the groom, to the couple jointly, to the bride's family, and to the groom's family. The practice of interviewing only the wife about transfers at marriage is consistent with work by Rao (1993, 1998), who suggests that women often have better recall of these transfers, since marriage is the most important event at which assets are transferred to women. (Men, on the other hand, may receive sizable transfers at the death of a parent.)

(excluding transportation costs, food costs).[24] These data show a net asset transfer to the wife's side, although the most recent weddings exhibit a net transfer to the groom. These data are thus consistent with the shift to dowry reported in the qualitative survey,[25] although the shift occurs quite late in the 1980s, which might be attributed to underreporting. In no case are the transfers at marriage enough to compensate the wives for the value of the cattle and house owned by their prospective husbands. This is consistent with the following hypothesis about the structure of marriage markets in Bangladesh: if decisions are mostly made by the parents of the bride and groom, transfers at marriage represent only one outcome of the marriage bargaining between them. The two families may negotiate the bargain based not only on transfers at marriage, but also on the expectation of inheritance and bequests.

A separate module about inheritance from both parents (land, cattle, and others) was also asked from both respondents. Results (not reported here) show that wives seldom inherit land, which is consistent with (1) Islamic inheritance laws, whereby daughters inherit half the share of sons (Subramanian 1998) and (2) widespread practice of renouncing their share in favor of their brothers. In our sample, when estate division occurred, 30 percent of the female respondents reported that they or their sisters gave up their share. Monetary compensation is not always requested as women tend to see this as

[24] This definition is consistent with that of Bloch and Rao (1998), who define dowry as a groom-price, a payment in cash and/or kind directly made from a bride's family to a groom's.

[25] This phenomenon is also largely reported in India (see Rao 1993, Rao 1998, and Bloch and Rao 1998 for references).

an insurance mechanism to maintain ties with their brothers, who would have to support them in the event of divorce or widowhood. Total land owned by the wife's parents is significantly higher (t-test at 1 percent) than total land owned by the husband's parents in our sample households, with a 0.49 correlation coefficient. In view of the disparity between husband's and wife's landownership, this is consistent with the idea that marriages are the outcomes of a bargain between the parents. Women did not report any other inheritance except for some rare instances of inherited cattle. Houses are the next valuable asset in the husband's inheritance except in Jessore.

The relatively small proportion of inheritance from mothers comes from the practice of dividing each parent's estate at his or her own death: since the fathers are, on average, 10 years older than the mothers, most mothers are still alive and living with their sons (either our sample household heads or a brother) on an estate that has not been divided. It is also possible that some of the mother's original assets were counted in assets jointly owned by the household.

4. EMPIRICAL RESULTS

DETERMINANTS OF ASSET HOLDINGS

We first examine the determinants of assets at marriage and current assets of husband and wife, respectively. We use the total value of assets since wives do own some assets, albeit lower in value than their husbands, but only rarely own land. We present

results both for OLS and median regressions since we observe very large and very small values in our sample.

Determinants of Assets at Marriage

Table 5 presents regressions of husband's assets at marriage as a function of his own characteristics (education, age, age squared, birth order, number of siblings, and number of living brothers), his parents' characteristics (land and education), and his wife's characteristics (her parents' land and her education), the year of marriage, and site dummies.[26] The year of marriage is included to account for possible secular trends in transfers at marriage, such as the earlier reported shift from bride-price to dowry. Husbands with education past primary schooling own more valuable assets. Higher birth-order children also seem to have more assets, reflecting parents' ability to accumulate assets over the course of their marriage, but this is offset by the number of siblings, who are competitors for their parents' wealth. A wife with more than primary schooling seems to be associated with a less valuable stock of assets at marriage for the husband (significantly so in the median regression). While the husband's own characteristics significantly affect his stock of assets at marriage, so do his parents' landholdings. The wife's parents' landholdings do not affect husband's assets at marriage.

[26] t-statistics in bold indicate significance at 10 percent or better (two-tailed tests). The number of observations in the regressions is less than 826 (our sample of intact couples) due to missing information on parents and siblings from the second round interviews.

For wives, parental landholdings have a positive and significant effect on the value of the wife's assets at marriage (Table 6). The total value of assets is also higher if her father has some secondary education (significantly so in the OLS specification). Secondary education does not significantly increase the value of the wife's assets.[27] The number of siblings and the number of living brothers do not seem to affect her total value of assets. Wives whose husbands' parents have larger landholdings, or whose husbands have a university education, bring more valuable assets to marriage, respectively. The effect of in-laws' landholdings thus appears to be asymmetric. Husbands' parents' landholdings affects wife's assets at marriage, but not vice versa. This confirms that there is selection and, indeed, bargaining, occurring in the marriage market, and that characteristics of the parents matter just as much as those of the prospective spouses. In fact, the qualitative work suggests that the wife's family has to meet the demands of the husband's family before the marriage can take place; nonfulfillment of these demands could even be grounds for domestic violence and divorce.

Determinants of Current Assets

Current assets are our other measure of bargaining power. We include the value of assets at marriage among the determinants of current assets to see whether spouses with a larger stock of assets at marriage have a "head start" in asset accumulation. We use

[27] Wives have much lower educational attainment than husbands (67 percent have no formal schooling, compared to 53 percent for husbands).

similar regressions as in the two previous tables (OLS and median regressions). Table 7 indicates that husbands' assets at marriage are not a significant determinant of current assets but parental landholdings continue to be positive and significant. Typically, land inheritance or the division of the parental estate occurs after marriage, at the parents' death, so it is very likely that current assets may reflect the acquisition of inherited assets. The negative coefficient on year of marriage in the OLS regression may indicate that couples who are married relatively recently may have had less time to accumulate assets in a context where landholdings are becoming smaller after division between heirs; this result, however, is opposite to the positive secular trend of assets at marriage. The landholdings of the wife's parents are significant determinants of the value of the husband's current assets only in the median regression.

Assets at marriage do not seem to give wives any special advantage either (Table 8). Her parents' land continues to be positively related to her asset position (significantly so in the OLS), suggesting that throughout her lifetime, her extended family remains a source of support, financial or otherwise. Brothers may also offer additional resources, since a woman's current asset holdings is positively affected by the number of living brothers. Marrying a better-educated man does have some advantages: women whose husbands have some secondary or some university education have more current assets.

DETERMINANTS OF EXPENDITURE PATTERNS

Given that parental characteristics significantly affect the assets brought to a marriage by the couple, and that both parental and individual characteristics determine current assets, estimating an expenditure share equation without accounting for potential endogeneity of regressors would lead to biased estimates. For example, current total expenditure per capita, household size, and the husband's and wife's asset measures are potentially endogenous. We thus employ a two-stage least squares (2SLS) procedure using instruments suggested by the previous analysis. For assets at marriage, we use the regressors in Tables 5 and 6 as instruments (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.) For current assets, we use two alternative instrument sets. In the first set, we use assets at marriage as an instrument; in the second, we acknowledge its endogeneity and use only the set of instruments for assets at marriage. Many of these instruments would also affect total expenditure and household size; for additional instruments, we include the lagged (first round) values of the ℓn of per capita expenditure and its square, and ℓn household size. We thus perform the regressions only on the second to fourth round data.[28]

[28] While it could be argued that excluding one round from the estimation would not give an accurate pattern of expenditures over a full year, according to the survey design, the first and the fourth rounds were conducted at a year's interval, so expenditure patterns in the fourth round are expected to be very similar to that in the first round.

We present the complete results for the 2SLS regressions with assets at marriage in Table 9 and current assets in Table 10, instrumented using the same set of instruments.[29] These results are highly preliminary and will be revised; many of the regressions, while significant, have low R-squareds. Our results reject the null hypothesis that a unitary model of the household operates in rural Bangladesh. Even in a patriarchal society where husbands control most of the household's resources, when household expenditure is controlled for, coefficients on husband's and wife's assets in the majority of the expenditure shares regressions are significantly different from zero.[30]

A greater number of coefficients on men's and women's assets are significant in the specification with current assets. Husband's assets at marriage are significant (and negative) only in the fuel share regression. In contrast, husband's current assets have a positive and significant effect on the share of food expenditure, and negative and significant effects on expenditure shares of men's clothing, women's clothing, services, durables, and personal care (Table 10). Women's assets at marriage (Table 9) have a positive and significant effect on children's clothing and expenditure on education, and a negative effect on services, health expenditures, and recreational expenditures. Women's current assets continue to be positively associated with expenditures on children's clothing and education. They also positively affect shares of expenditures on transportation, and

[29] We also estimated OLS regressions with current assets and assets at marriage as regressors in alternative specifications, and 2SLS with current assets. Selected coefficients are reported in Table 12. We will correct standard errors for clustering in the next revision.

[30] Tests of the equality of husband's and wife's coefficients, and ratios of their estimated effects will be done in future work.

negatively affect shares of housing and fuel. The results for children's clothing and education are consistent with most of the empirical evidence on the positive and significant effect of women's incomes on investments in children (e.g., Doss 1997; Thomas 1994; Thomas and Chen 1994). In societies where a woman's ability to accumulate assets is proscribed, children are probably her most important investment and insurance for the future.

The positive and significant coefficient of husband's current assets in the food share equation seems surprising at first glance, since other studies from Sub-Saharan Africa (Doss 1997; Hoddinott and Haddad 1995) and Taiwan (Thomas and Chen 1994) show that increasing the share of resources controlled by women is associated with an increased food budget share. To see whether men's and women's assets have a differential impact on more disaggregated food categories, which could reflect differences in food consumption patterns between men and women, we disaggregated food expenditures into three groups: animal products, plant products (excluding cereals), and cereals (Table 11).[31]

We estimated expenditure share regressions for these three subgroups using the same specifications in Tables 9 and 10.[32] The coefficient of husband's assets is not

[31] For example, in Bangladesh, Bouis and Novenario-Reese (1997) find that adult males are given preference in the intrahousehold distribution of certain micronutrient dense foods, such as milk, eggs, and meat, while other micronutrient dense foods, such as fish and vegetables, are more equitably distributed among household members.

[32] Note that our dependent variables still use total expenditure, not food expenditure, as the denominator. For comparability, and to avoid making assumptions regarding the separability of the utility function into food and nonfood groups, we decided to compute ratios of expenditures on each food subgroup to total expenditure.

significant in any of the regressions in the specifications using assets at marriage, but is positive and significant (albeit of small magnitude) in the cereals regression using current assets. The coefficient of wife's current assets is significant and negative in the cereals regression. Neither men's nor women's assets significantly affect expenditures on animal products and plant products (excluding cereals). It is possible that preferences for the allocation of such foods are the same for men and women, and thus they behave like a unitary household. The results also suggest that the results for the food group as a whole are being driven mostly by the cereals subgroup.

These results may also be affected by factors specific to the Bangladeshi situation. In Sub-Saharan Africa and Taiwan, where positive effects of women's resources on food shares have been estimated, women are responsible for food crop production or have independent sources of income, respectively.[33] In contrast, in Bangladesh, men control the production and marketing of rice, the major staple, and they also purchase most of the food in the market. This might explain the divergence of the Bangladesh results from those previously reported.[34]

Finally, we compare alternative estimates of the effects of men's and women's assets (Table 12). Since both assets at marriage and current assets are endogenous, ordinary least squares estimates are biased estimates of the impact of men's and women's

[33] In Taiwan, women's income share has a significant and positive effect on household budget shares of staples and a negative effect on budget shares allocated to alcohol and cigarettes (Thomas and Chen 1994).

[34] To verify this hypothesis, we intend to compare these results to other countries in South Asia where norms regarding women's seclusion may prevent their extensive involvement in food purchases and marketing.

assets. In the case of expenditures on child clothing, the coefficient of women's assets is consistently positive and significant, but the magnitude of the effect increases from 0.04 for the OLS estimate on assets at marriage to 0.15 for the 2SLS estimate. The effect is even more striking for current assets: the coefficient increases from 0.04 to 0.27. Similarly, the magnitude of the coefficient of women's assets at marriage in the education equation increases from 0.17 to 0.34, and from 0.17 to 0.83 for current assets. This suggests that neglecting the endogeneity of asset measures may lead to biases in the measurement of the impact of men's and women's bargaining power.

5. CONCLUDING REMARKS AND NEXT STEPS

This paper aimed to test the unitary model of the household against an alternative that postulates that individuals have different preferences and do not pool their resources. Our results, based on alternative measures of men's and women's assets, suggest that, even in the patriarchal society of rural Bangladesh, a collective model is a better description of household decisionmaking.

Our work takes the current literature on measures of bargaining power further by explicitly modeling the determinants of the assets that each spouse brings to marriage, as well as the determinants of current assets. While individual characteristics are significant

determinants of asset holdings, so are characteristics of the parents who negotiated the marriage in the first place. Neglecting the endogeneity of asset measures to individual and parental characteristics may lead to a biased estimate of the coefficients on men's and women's asset measures, though not necessarily a rejection of the collective model. However, our results also suggest that conventional bargaining models need to be modified. Even if the endogeneity of current assets is controlled for by using assets brought to marriage, these are determined in the context of marriage markets. In extended family settings found in Bangladesh and many parts of the developing world, both intrahousehold and intergenerational bargaining may be important. Taking into account the bargaining power of other members of the extended family (the mother-in-law, for example) may be key to explaining intrahousehold allocation outcomes in societies with complex household structures.

Finally, our work adds to the evidence that increased resources controlled by women are often allocated towards children, in this case, through children's clothing and schooling. Given that women in Bangladesh are disadvantaged with respect to both asset ownership and education, it is possible that the greatest impact of interventions to increase resources under their control will be felt by the next generation.

TABLES

Table 1—Means and standard deviations

	Mean	Standard deviation
Dependent variables (expenditure shares x 100)		
Food	68.20	15.37
Housing	4.10	11.26
Men's clothing and footwear	2.45	2.36
Women's clothing and footwear	2.96	2.74
Children's clothing and footwear	1.36	1.78
Services	0.46	2.10
Household durables	0.60	1.08
Health expenditures	3.50	6.12
Celebrations (gifts, taxes, family events)	2.35	7.96
Education	2.52	3.77
Personal care	2.40	1.88
Nondurable goods	0.80	0.73
Transportation	2.70	4.36
Recreation	0.12	0.50
Fuel	1.95	3.29
Cigarettes, betel nut	2.85	2.36
Independent variables		
Ln per capita expenditure	6.37	0.53
Ln household size	1.62	0.41
Household demographics		
Share females 20-65	0.26	0.10
Share males 10-19	0.13	0.15
Share females 10-19	0.11	0.13
Share males 6-9	0.05	0.10
Share females 6-9	0.04	0.09
Share males 0-5	0.06	0.11
Share females 0-5	0.06	0.11
Share males 65+	0.02	0.06
Share females 65+	0.02	0.05
Share of households in sites		
Saturia	0.33	0.47
Jessore	0.33	0.47
Asset measures (1996 taka)		
Pre-wedding assets		
Husband	81,929	145,584
Wife	7,064	8,472
Transfers at marriage		
Husband	4,053	15,014
Wife	5,856	11,646
Current assets		
Husband	165,427	212,271
Wife	4,825	19,134

Source: IFPRI-BIDS-INFS 1996 Survey.

Table 2—Current assets

Table 2a—Current landownership, by site

Owner		Land unit	Site: Saturia (n=282) Mean	Saturia Standard deviation	Mymensingh (n=290) Mean	Mymensingh Standard deviation	Jessore (n=279) Mean	Jessore Standard deviation
Husbands	Land owned	dec.	79	99	166	185	74	124
	Value of land	Tk	130,142	160,406	223,236	247,646	109,602	179,143
	Percent of household value		92%		96%		94%	
Wives	Land owned	dec.	3	21	1	14	2	8
	Value of land	Tk	3,914	26,221	1,500	14,365	2,165	9,943
	Percent of household value		3%		0%		4%	
Household	Total land owned	dec.	90	112	174	191	78	125
	Total value of estate	Tk	148,120	180,435	235,259	256,286	115,399	180,446

Table 2b—Current livestock (includes poultry, sheep, goats, and cattle), by site

Assets/individual		Unit	Site: Saturia Mean	Saturia Standard deviation	Mymensingh Mean	Mymensingh Standard deviation	Jessore Mean	Jessore Standard deviation
Household	Percentage owning	%	91%		92%		96%	
	Total cattle value of	Tk	6,478	6,663	6,417	6,891	6,244	7,120
For households who own some type of animals								
	Percentage owning	%	46%		44%		25%	
	Value of animals	Tk	4,475	6,062	4,575	6,778	2,525	5,347
	Percent of household value		43%		40%		20%	
Wives	Percentage owning	%	79%		81%		91%	
	Value of animals	Tk	1,294	3,273	447	1,246	1,477	2,395
	Percent of household value		41%		32%		51%	

Table 2c—Values of current durable goods and equipment, by site

Owner		Unit	Site: Saturia Mean	Saturia Standard deviation	Mymensingh Mean	Mymensingh Standard deviation	Jessore Mean	Jessore Standard deviation
Husband	Value of goods	Tk	5,163	(9,265)	4,740	(13,773)	3,086	(19,208)
	Percent of household value		52%		24%		20%	
Wife	Value of goods	Tk	1,260	(1,917)	1,307	(3,091)	793	(2,427)
	Percent of household value		20%		10%		13%	
Household		Tk	10,446	(15,414)	17,441	(29,200)	9,567	(24,968)

Source: IFPRI-BIDS-INFS 1996 Survey.

Table 3—Premarital physical assets, by site

	Site								
	Saturia			Mymensingh			Jessore		
Assets/Individual	%	Value Mean	Standard deviation	%	Value Mean	Standard deviation	%	Value Mean	Standard deviation
Husbands									
Land	12	24,631	207,530	13	25,478	106,924	8	9,540	56,038
House	25	2,290	6,078	19	2,552	7,533	19	2,134	6,002
Cattle	77	86,275	60,376	44	46,380	61,262	32	34,469	59,014
Durables	71	5,379	12,173	28	3,018	8,645	5	57	346
Food	N.A.			N.A.			N.A.		
Total		118,575	214,492		77,428	139,038		46,200	91,415
Wives									
Land	2	1,267	12,430	0	213	3,629	1	138	1,575
House	3	307	2,682	0	9	147	1	181	2,012
Cattle	7	563	4,731	4	371	2,287	10	349	1,431
Durables	43	1,455	5,657	47	1,045	3,020	26	717	3,286
Food	84	569	1,341	69	316	648	62	137	239
Total		4,161	16,688		1,955	5,420		1,521	4,385

Source: IFPRI-BIDS-INFS 1996 Survey.
Note: All values are in 1996 takas (US$1 ~ 44 Tk). N.A = not available.

Table 4—Assets transfers at wedding, as reported by wives, by site

Value received	Site					
	Saturia		Mymensingh		Jessore	
Recipient	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Groom	4,158	23,897	4,947	7,380	2,209	4,933
Bride	6,395	13,949	5,263	10,845	5,046	8,789
Groom's family	880	5,345	400	1,899	265	2,095
Bride's family	89	717	198	1,152	169	817
Couple	1,017	6,565	609	1,513	22	211
Sample size	282		272		272	

Source: IFPRI-BIDS-INFS 1996 Survey.

Note: All values are in 1996 takas (US$1 ~ 44 Tk).

Table 5—Determinants of husband's assets at marriage

Dependent variables in natural logarithms of (assets + 1)

	Total value of husband's assets at marriage			
	OLS		Median	
	Coefficient	t-statistic	Coefficient	t-statistic
Husband's characteristics				
Primary education	-0.248	-0.781	-0.334	-1.616
Secondary education	**0.755**	**1.889**	**0.471**	**1.831**
University education	-0.448	-0.691	-0.038	-0.090
Age	**0.315**	**2.787**	**0.186**	**2.531**
Age squared	**-0.002**	**-2.223**	**-0.001**	**-2.070**
Birth order	**0.190**	**2.733**	**0.155**	**3.439**
Number of siblings	**-0.134**	**-1.832**	**-0.087**	**-1.839**
Number of living brothers	-0.110	-0.982	-0.098	-1.350
Husband's parents' characteristics				
ln(parents' land + 1)	**0.228**	**3.438**	**0.253**	**5.834**
Father has primary education	-0.154	-0.461	0.049	0.226
Father has secondary education	-0.112	-0.241	-0.199	-0.666
Mother illiterate	-0.049	-0.085	-0.015	-0.040
Wife's characteristics				
ln(parents' land + 1)	0.118	1.570	0.017	0.354
Primary education	0.142	0.413	**0.496**	**2.224**
Secondary education	-0.543	-1.131	**-0.810**	**-2.656**
Age	-0.125	-1.085	-0.058	-0.776
Age squared	0.001	0.828	0.001	1.027
Year of marriage	**0.078**	**2.498**	**0.056**	**2.781**
Site dummies				
Saturia	**0.752**	**2.425**	**1.796**	**8.908**
Jessore	**-1.406**	**-4.575**	**-1.419**	**-7.108**
Constant	**-152.750**	**-2.416**	**-107.414**	**-2.627**
Number of observations	721		721	
F	6.55			
p-value	0			
R-squared	0.1577		0.178	

Note: t-statistics in bold are significant at 10 percent or better.

Table 6—Determinants of wife's assets at marriage

Dependent variables in natural logarithms of (assets+1)

	Total value of wife's assets at marriage			
	OLS		Median	
	Coefficient	t-statistic	Coefficient	t-statistic
Wife's characteristics				
Primary education	**0.264**	**1.654**	0.208	1.458
Secondary education	0.190	0.850	0.186	0.947
Age	**0.286**	**5.184**	0.062	1.322
Age squared	**-0.004**	**-6.097**	**-0.001**	**-1.767**
Birth order	0.004	0.147	0.015	0.566
Number of siblings	-0.035	-1.126	-0.025	-0.879
Number of living brothers	-0.012	-0.258	0.000	0.002
Wife's parents' characteristics				
ln(parents' land + 1)	**0.086**	**2.467**	**0.123**	**3.971**
Father has primary education	0.001	0.009	-0.017	-0.119
Father has secondary education	**0.321**	**1.653**	0.225	1.300
Mother has primary education	0.072	0.351	-0.025	-0.135
Mother has secondary education	0.294	0.712	0.511	1.406
Husband's characteristics				
ln(parents' land + 1)	**0.085**	**2.867**	**0.062**	**2.323**
Primary education	0.148	0.979	**0.381**	**2.801**
Secondary education	-0.060	-0.322	-0.142	-0.853
University education	0.434	1.571	**0.556**	**2.328**
Age	**0.094**	**1.822**	0.048	1.117
Age squared	**-0.001**	**-2.258**	-0.001	-1.406
Year of marriage	-0.018	-1.216	**-0.040**	**-3.028**
Site dummies				
Saturia	**0.455**	**3.219**	**0.583**	**4.601**
Jessore	-0.075	-0.516	0.098	0.756
Constant	36.696	1.229	**85.052**	**3.180**
Number of observations	714		714	
F	14.89			
p-value	0			
R-squared	0.3112		0.1849	

Note: t-statistics in bold are significant at 10 percent or better.

Table 7—Determinants of husband's current assets

Dependent variables in natural logarithms of (assets+1)

	Total value of husband's current assets			
	OLS		Median	
	Coefficient	t-statistic	Coefficient	t-statistic
Husband's characteristics				
Primary education	0.395	1.415	0.170	1.201
Secondary education	0.397	1.129	**0.419**	**2.351**
University education	0.122	0.215	0.270	0.966
Age	0.114	1.146	**0.085**	**1.695**
Age squared	-0.001	-0.764	-0.001	-1.268
Birth order	**0.270**	**4.391**	**0.088**	**2.841**
Number of siblings	**-0.185**	**-2.879**	**-0.061**	**-1.876**
Number of living brothers	0.001	0.014	-0.044	-0.878
ln(assets at marriage+1)	0.015	0.464	-0.024	-1.413
Husband's parents' characteristics				
ln(parents' land +1)	**0.291**	**4.957**	**0.243**	**8.099**
Father has primary education	0.018	0.060	0.200	1.336
Father has secondary education	0.540	1.325	0.114	0.552
Mother illiterate	**0.912**	**1.796**	0.355	1.372
Wife's characteristics				
ln(parents' land+1)	0.060	0.902	**0.122**	**3.645**
Primary education	0.265	0.872	0.206	1.346
Secondary education	**-0.980**	**-2.324**	**-0.406**	**-1.891**
Age	0.124	1.220	0.044	0.858
Age squared	-0.002	-1.621	-0.001	-1.009
Year of marriage	**-0.054**	**-1.950**	-0.016	-1.143
Site dummies				
Saturia	0.088	0.322	-0.187	-1.350
Jessore	**-1.038**	**-3.796**	**-0.642**	**-4.612**
Constant	**109.119**	**1.960**	37.977	1.344
Number of observations	719		719	
F	11.52			
p-value	0			
R-squared	0.2577		0.2003	

Note: t-statistics in bold are significant at 10 percent or better.

Table 8—Determinants of wife's current assets

Dependent variables in natural logarithms of (assets+1)

	Total value of wife's current assets			
	OLS		Median	
	Coefficient	t-statistic	Coefficient	t-statistic
Wife's characteristics				
Primary education	0.316	1.415	0.211	1.026
Secondary education	-0.033	-0.107	0.082	0.287
Age	0.119	1.523	**0.113**	1.673
Age squared	-0.001	-1.352	-0.001	-1.544
Birth order	-0.016	-0.383	0.022	0.585
Number of siblings	-0.003	-0.071	-0.054	-1.363
Number of living brothers	**0.136**	**2.181**	**0.140**	**2.444**
ln(assets at marriage + 1)	-0.013	-0.243	0.017	0.362
Wife's parents' characteristics				
ln(parents' land + 1)	**0.142**	**2.917**	0.059	1.33
Father has primary education	-0.057	-0.257	-0.086	-0.434
Father has secondary education	0.033	0.120	0.286	1.157
Mother has primary education	0.199	0.694	0.049	0.186
Mother has secondary education	0.178	0.310	-0.048	-0.091
Husband's characteristics				
ln(parents' land + 1)	0.050	1.219	0.020	0.531
Primary education	-0.102	-0.482	0.160	0.829
Secondary education	**0.695**	**2.694**	**0.561**	**2.380**
University education	0.559	1.455	**0.837**	**2.407**
Age	-0.056	-0.781	-0.067	-1.103
Age squared	0.000	0.692	0.001	0.931
Year of marriage	-0.001	-0.034	-0.007	-0.364
Site dummies				
Saturia	**1.012**	**5.102**	**0.697**	**3.874**
Jessore	**0.464**	**2.300**	**0.510**	**2.782**
Constant	5.310	0.128	18.462	0.493
Number of observations	712		712	
F	4.7			
p-value	0			
R-squared	0.1304		0.0797	

Note: t-statistics in bold are significant at 10 percent or better.

Table 9—Expenditure shares as a function of assets at marriage, 2SLS estimates

	Food		Housing		Men's clothing		Women's clothing		Children's clothing		Services	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Endogenous regressors												
Ln per capita expenditure	34.240	1.160	-28.138	-1.194	4.856	0.956	-0.835	-0.151	1.765	0.462	3.133	0.677
Ln per capita expenditure squared	-3.750	-1.616	2.485	1.341	-0.310	-0.775	0.083	0.190	-0.107	-0.357	-0.161	-0.444
Ln household size	-2.835	**-2.673**	0.385	0.454	0.523	**2.865**	0.049	0.244	-0.088	-0.642	0.643	**3.867**
Ln (hus assets +1)	0.421	1.287	-0.382	-1.465	-0.024	-0.424	0.100	1.632	0.029	0.675	-0.049	-0.962
Ln (wife's assets +1)	-0.001	-0.002	0.060	0.157	-0.041	-0.497	-0.075	-0.837	0.154	**2.504**	-0.130	**-1.739**
Household demographics												
Share females 20-65	-8.067	**-1.688**	6.375	**1.670**	-2.834	**-3.444**	4.028	**4.497**	0.084	0.136	-0.963	-1.285
Share males 10-19	-5.015	-1.377	3.275	1.126	-1.019	-1.625	-0.525	-0.769	1.698	**3.601**	-0.778	-1.364
Share females 10-19	-4.808	-1.189	3.907	1.210	-3.321	**-4.772**	1.431	**1.889**	3.006	**5.740**	-0.637	-1.005
Share males 6-9	-3.642	-0.828	8.627	**2.455**	-4.248	**-5.610**	0.043	0.052	2.458	**4.313**	-0.355	-0.514
Share females 6-9	-3.046	-0.667	3.119	0.856	-3.734	**-4.753**	0.623	0.728	3.110	**5.260**	1.374	**1.921**
Share males 0-5	0.039	0.009	1.308	0.388	-2.115	**-2.908**	1.635	**2.065**	2.592	**4.735**	-0.501	-0.757
Share females 0-5	-8.930	**-2.052**	5.635	1.622	-1.100	-1.468	2.788	**3.419**	2.885	**5.119**	-0.511	-0.750
Share males 65+	-6.190	-0.805	1.507	0.246	-0.725	-0.548	-0.422	-0.293	2.992	**3.006**	0.090	0.075
Share females 65+	-0.865	-0.120	5.354	0.928	-3.309	**-2.662**	0.832	0.615	-0.289	-0.309	-1.263	-1.116
Site and round dummies												
Saturia	-3.653	**-4.624**	2.769	**4.390**	-0.592	**-4.357**	0.089	0.598	0.422	**4.126**	-0.515	**-4.163**
Jessore	3.476	**3.605**	0.712	0.925	-0.752	**-4.535**	-0.082	-0.454	0.299	**2.391**	-1.004	**-6.648**
Round 3	1.265	1.567	1.519	**2.358**	0.438	**3.154**	0.343	**2.266**	0.608	**5.819**	-0.108	-0.857
Round 4	1.055	1.357	1.547	**2.490**	0.219	**1.638**	0.307	**2.103**	0.171	**1.698**	0.070	0.572
Constant	7.640	0.082	78.637	1.054	-13.998	-0.871	2.846	0.163	-8.631	-0.713	-11.417	-0.780
Overidentification test (chi-square)	54.720		36.198		40.308		42.764		33.884		36.710	
p-value	1.000		1.000		1.000		1.000		1.000		1.000	
Number of observations	1,920		1,920		1,920		1,920		1,920		1920	
F	13.68		3.87		10.67		5.21		11.23		7.14	
p-value	0		0		0		0		0		0	
R-squared	0.236		0.140		0.0525		0.0084		0.0619		0.0125	

(continued)

Notes: Assets at marriage in 1996 taka; regressions on rounds 2, 3, and 4. t-statistics in bold are significant at 10 percent or better. Instruments: Round 1 values: ln per capita expenditure, ln per capita expenditure squared, ln household size; for both husband and wife: dummies for schooling (primary, secondary, university (husband only), age and age squared, birth order, family background: father's schooling, mother's schooling or literacy, parent's land, number of siblings, number of living brothers, year of marriage (see Tables 5-8).

Table 9—(continued)

	Durables		Health		Celebrations		Education		Personal care		Nondurables	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Endogenous regressors												
Ln per capita expenditure	1.635	0.731	-21.838	**-1.701**	-9.649	-0.531	8.677	1.043	5.509	1.277	1.042	0.607
Ln per capita expenditure squared	-0.125	-0.709	1.852	**1.835**	0.766	0.536	-0.420	-0.642	-0.433	-1.277	-0.095	-0.703
Ln household size	-0.292	**-3.627**	0.512	1.109	2.039	**3.122**	0.573	**1.919**	-0.182	-1.175	-0.226	**-3.659**
Ln (hus assets + 1)	-0.009	-0.358	0.182	1.283	0.137	0.678	-0.037	-0.406	-0.010	-0.219	0.020	1.036
Ln (wife's assets + 1)	-0.004	-0.107	-0.337	**-1.626**	-0.000	0.000	0.339	**2.526**	-0.054	-0.783	0.006	0.219
Household demographics												
Share females 20-65	-0.189	-0.523	-1.091	-0.525	2.570	0.873	-2.075	-1.541	0.338	0.484	0.300	1.077
Share males 10-19	-0.185	-0.669	-0.761	-0.481	-0.420	-0.187	4.086	**3.982**	-0.319	-0.600	0.278	1.312
Share females 10-19	0.037	0.122	-0.296	-0.168	-2.887	-1.159	2.515	**2.207**	1.194	**2.021**	0.443	**1.884**
Share males 6-9	0.025	0.075	0.821	0.429	-2.887	-1.065	1.415	1.141	-0.513	-0.798	0.081	0.316
Share females 6-9	0.010	0.028	0.030	0.015	-0.869	-0.309	0.067	0.052	-0.208	-0.312	0.324	1.219
Share males 0-5	0.023	0.071	1.460	0.794	-5.217	**-2.005**	0.939	0.788	0.116	0.188	0.142	0.576
Share females 0-5	0.514	1.559	1.439	0.760	-6.130	**-2.288**	0.822	0.670	0.439	0.690	0.468	**1.848**
Share males 65+	-0.761	-1.307	0.769	0.230	-2.302	-0.486	8.097	**3.740**	-0.576	-0.513	0.092	0.207
Share females 65+	-0.698	-1.275	-8.098	**-2.579**	4.344	0.977	1.800	0.885	-1.257	-1.191	0.549	1.305
Site and round dummies												
Saturia	0.098	1.640	-0.683	**-1.987**	0.599	1.231	0.871	**3.912**	0.730	**6.324**	0.022	0.473
Jessore	-0.151	**-2.066**	0.396	0.945	0.285	0.480	-0.170	-0.626	-0.165	-1.173	0.116	**2.070**
Round 3	0.035	0.580	-1.813	**-5.166**	0.104	0.210	-0.584	**-2.568**	0.147	1.249	-0.007	-0.145
Round 4	0.015	0.255	-1.230	**-3.635**	0.186	0.389	-0.758	**-3.460**	0.130	1.140	-0.069	-1.516
Constant	-4.080	-0.576	68.628	**1.689**	28.170	0.490	-39.511	-1.501	-14.606	-1.070	-2.081	-0.383
Overidentification test (chi-square)	40.618		37.711		30.055		45.743		63.877		26.543	
p-value	1.000		1.000		1.000		1.000		1.000		1.000	
Number of observations	1,920		1,920		1,920		1,920		1,920		1920	
F	2.92		2.56		1.94		17.03		5.22		2.1	
p-value	0		0		0.0101		0		0		0.0043	
R-squared	0.0283		.		0.0355		0.0195		0.0478		0.0414	

(continued)

Table 9—(continued)

	Transport		Recreation		Fuel		Cigarettes	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Endogenous regressors								
Ln per capita expenditure	-1.409	-0.141	-4.090	**-3.221**	7.107	1.036	4.816	0.997
Ln per capita expenditure squared	0.323	0.412	0.333	**3.338**	-0.580	-1.074	-0.442	-1.163
Ln household size	-0.179	-0.498	0.015	0.328	-0.703	**-2.851**	-0.540	**-3.110**
Ln (hus assets +1)	-0.093	-0.846	0.003	0.246	-0.178	**-2.339**	0.073	1.356
Ln (wife's assets +1)	0.078	0.488	-0.051	**-2.481**	-0.062	-0.561	-0.061	-0.787
Household demographics								
Share females 20-65	-0.709	-0.440	0.126	0.612	0.432	0.389	-0.096	-0.122
Share males 10-19	0.462	0.376	-0.108	-0.691	0.585	0.691	-0.765	-1.282
Share females 10-19	0.526	0.385	-0.103	-0.590	0.803	0.854	-0.616	-0.931
Share males 6-9	-1.051	-0.707	-0.149	-0.786	0.693	0.678	-1.039	-1.442
Share females 6-9	0.707	0.459	-0.127	-0.649	-0.169	-0.159	-0.874	-1.170
Share males 0-5	1.957	1.371	-0.136	-0.748	0.252	0.257	-2.161	**-3.123**
Share females 0-5	4.568	**3.110**	0.110	0.589	-0.066	-0.065	-1.554	**-2.181**
Share males 65+	1.448	0.558	-0.787	**-2.382**	0.675	0.377	-3.147	**-2.501**
Share females 65+	5.465	**2.242**	-0.367	-1.182	-0.848	-0.505	-1.571	-1.329
Site and round dummies								
Saturia	-0.994	**-3.726**	0.075	**2.203**	0.803	**4.370**	0.354	**2.737**
Jessore	-1.646	**-5.058**	0.006	0.156	-0.410	**-1.829**	-0.269	**-1.704**
Round 3	-0.767	**-2.814**	-0.064	**-1.830**	-0.215	-1.147	-0.327	**-2.476**
Round 4	-0.991	**-3.773**	-0.014	-0.431	-0.384	**-2.123**	-0.323	**-2.534**
Constant	0.051	0.002	12.981	**3.229**	-16.608	-0.765	-8.310	-0.543
Overidentification test (chi-square)	61.906		37.532		39.383		70.763	
p-value	1.000		1.000		1.000		1.000	
Number of observations	1,920		1,920		1,920		1,920	
F	6.17		3.04		3.18		5.58	
p-value	0		0		0		0	
R-squared	.		.		0.0007		0.0823	
Tests for excluded instruments (F-test):								
Ln per capita expenditure	22.58							
Ln per capita expenditure squared	21.02							
Ln household size	213.54							
Ln husband's assets at marriage	7.47							
Ln wife's assets at marriage	22.27							

Table 10—Expenditure shares as a function of current assets, 2SLS estimates

	Food		Housing		Men's clothing		Women's clothing		Children's clothing		Services	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Endogenous regressors												
Ln per capita expenditure	26.142	0.841	-14.582	-0.598	6.397	1.194	1.118	0.195	-1.744	-0.429	6.853	1.370
Ln pce squared	-3.068	-1.288	1.772	0.949	-0.452	-1.102	-0.079	-0.181	0.123	0.397	-0.408	-1.065
Ln household size	-2.808	**-2.319**	1.409	1.483	0.464	**2.225**	0.002	0.011	-0.158	-0.999	0.729	**3.741**
Ln (hus assets +1)	0.781	**2.842**	-0.335	-1.554	-0.134	**-2.828**	-0.085	**-1.689**	0.042	1.160	-0.079	**-1.782**
Ln (wife's assets +1)	-0.894	-0.911	-1.392	**-1.807**	0.213	1.259	0.133	0.737	0.266	**2.074**	-0.224	-1.416
Household demographics												
Share females 20-65	-6.049	-1.239	5.433	1.418	-3.242	**-3.853**	3.651	**4.062**	0.402	0.630	-1.349	**-1.717**
Share males 10-19	-5.807	-1.315	7.944	**2.293**	-1.128	-1.482	-0.762	-0.937	1.203	**2.084**	-0.201	-0.283
Share females 10-19	-5.203	-1.150	7.671	**2.161**	-3.463	**-4.442**	1.213	1.457	2.684	**4.540**	-0.248	-0.340
Share males 6-9	-1.381	-0.259	12.797	**3.055**	-4.807	**-5.224**	-0.258	-0.262	1.766	**2.532**	0.246	0.287
Share females 6-9	-4.333	-0.852	8.131	**2.038**	-3.831	**-4.371**	0.242	0.259	2.693	**4.053**	1.910	**2.335**
Share males 0-5	2.157	0.413	5.827	1.423	-2.699	**-3.000**	1.229	1.278	1.924	**2.820**	0.093	0.110
Share females 0-5	-6.878	-1.143	12.288	**2.603**	-1.785	**-1.721**	2.204	**1.989**	1.871	**2.379**	0.433	0.448
Share males 65+	-7.529	-0.913	8.841	1.365	-0.507	-0.357	-0.105	-0.069	0.583	0.540	2.387	**1.798**
Share females 65+	0.780	0.109	6.689	1.193	-3.456	**-2.804**	1.067	0.811	-1.264	-1.353	-0.467	-0.406
Site and round dummies												
Saturia	-2.717	**-2.386**	3.759	**4.206**	-0.783	**-3.987**	0.028	0.133	0.242	**1.625**	-0.375	**-2.046**
Jessore	4.212	**4.358**	1.628	**2.146**	-0.982	**-5.895**	-0.414	**-2.326**	0.130	1.031	-0.876	**-5.632**
Round 3	1.174	1.168	0.613	0.776	0.487	**2.812**	0.360	**1.943**	0.725	**5.517**	-0.229	-1.414
Round 4	0.973	1.105	0.942	1.363	0.256	**1.687**	0.319	**1.968**	0.249	**2.161**	-0.009	-0.066
Constant	31.885	0.320	27.560	0.353	-18.154	-1.058	-2.269	-0.124	4.018	0.309	-24.640	-1.538
Overidentification test (chi-square)	44.332.		34.136		27.742		41.929		35.292		34.352	
p-value	1.000		1.000		1.000		1.000		1.000		1.000	
Number of observations	1,920		1,920		1,920		1,920		1,920		1,920	
F	13.85		4.05		11.01		5.34		10.60		6.58	
p-value	0.00		0.00		0.00		0.00		0.00		0.00	
R-squared	0.218		0.149		0.026		0.019		0.021			

(continued)

Notes: Current assets in 1996 taka; regressions on rounds 2, 3, and 4. t-statistics in bold are significant at 10% or better. Instruments: Round 1 values: ln per capita expenditure, ln per capita expenditure squared, ln household size; for both husband and wife: dummies for schooling (primary, secondary, university (husband only), age and age squared, birth order, family background: father's schooling, mother's schooling or literacy, parent's land, number of siblings, number of living brothers, year of marriage (see Tables 5-8).

Table 10—(continued)

	Durables		Health		Celebrations		Education		Personal care		Nondurables	
	Co-efficient	t-statistic	Co-efficient	t-statistic	Co-efficient	t-statistic	Co-efficient	t-statistic	Co-efficient	t-statistic	Co-efficient	t-statistic
Endogenous regressors												
Ln per capita expenditure	2.548	1.083	-21.755	**-1.659**	-14.539	-0.753	1.996	0.224	8.094	**1.755**	1.257	0.702
Ln pce squared	-0.190	-1.057	1.743	**1.735**	1.043	0.705	-0.018	-0.027	-0.635	**-1.799**	-0.110	-0.801
Ln household size	-0.271	**-2.957**	0.097	0.189	1.728	**2.299**	0.371	1.071	-0.185	-1.030	-0.218	**-3.129**
Ln (hus assets +1)	-0.053	**-2.531**	0.068	0.583	0.148	0.865	-0.059	-0.746	-0.148	**-3.639**	-0.013	-0.815
Ln (wife's assets +1)	0.024	0.324	0.278	0.672	0.393	0.645	0.823	**2.928**	0.124	0.853	0.018	0.315
Household demographics												
Share females 20-65	-0.345	-0.935	-1.314	-0.638	3.000	0.990	-1.747	-1.250	-0.149	-0.206	0.259	0.921
Share males 10-19	-0.070	-0.209	-2.348	-1.261	-1.902	-0.694	3.012	**2.383**	-0.213	-0.325	0.274	1.079
Share females 10-19	0.120	0.350	-1.724	-0.903	-4.060	-1.446	1.762	1.361	1.227	**1.829**	0.448	**1.719**
Share males 6-9	-0.009	-0.023	-0.170	-0.076	-4.078	-1.231	-0.748	-0.490	-0.797	-1.007	0.058	0.188
Share females 6-9	0.132	0.344	-1.929	-0.900	-2.467	-0.782	-0.713	-0.490	-0.117	-0.156	0.304	1.037
Share males 0-5	-0.013	-0.032	0.208	0.095	-6.514	**-2.010**	-1.137	-0.761	-0.202	-0.260	0.107	0.355
Share females 0-5	0.502	1.103	-0.346	-0.136	-8.100	**-2.168**	-2.055	-1.193	0.113	0.127	0.404	1.166
Share males 65+	-0.534	-0.854	1.474	0.423	-4.820	-0.941	2.840	1.202	0.139	0.113	0.017	0.035
Share females 65+	-0.720	-1.331	-6.931	**-2.299**	3.924	0.884	-0.771	-0.377	-1.206	-1.137	0.522	1.268
Site and round dummies												
Saturia	0.076	0.887	-0.883	**-1.838**	0.335	0.474	0.227	0.698	0.621	**3.676**	0.021	0.316
Jessore	-0.215	**-2.938**	0.111	0.273	0.042	0.070	-0.681	**-2.463**	-0.388	**-2.709**	0.055	0.988
Round 3	0.018	0.237	-1.554	**-3.664**	0.382	0.612	-0.268	-0.931	0.140	0.936	-0.012	-0.211
Round 4	0.004	0.066	-1.056	**-2.842**	0.371	0.678	-0.544	**-2.157**	0.128	0.977	-0.072	-1.425
Constant	-6.922	-0.919	70.150	**1.670**	46.147	0.746	-14.536	-0.510	-22.388	-1.515	-2.556	-0.446
Overidentification test (chi-square)	32.543		36.959		28.351		38.542		44.747		26.815	
p-value	1.000		1.000		1.000		1.000		1.000		1.000	
Number of observations	1,920		1,920		1,920		1,920		1,920		1,920	
F	3.26		2.49		1.89		16.36		5.8		2.08	
p-value	0.000		0.001		0.013		0.000		0.000		0.005	
R-squared	0.007		.		.		.		.		0.038	

(continued)

Table 10—(continued)

	Transport		Recreation		Fuel		Cigarettes	
	Co-efficient	t-statistic	Co-efficient	t-statistic	Co-efficient	t-statistic	Co-efficient	t-statistic
Endogenous regressors								
Ln per capita expenditure	-6.235	-0.600	-3.448	**-2.682**	10.583	1.412	4.990	0.996
Ln pce squared	0.565	0.709	0.279	**2.831**	-0.758	-1.320	-0.479	-1.248
Ln household size	-0.513	-1.266	-0.013	-0.263	-0.458	-1.569	-0.628	**-3.219**
Ln (hus assets +1)	-0.028	-0.305	-0.015	-1.351	-0.028	-0.421	-0.002	-0.047
Ln (wife's assets +1)	0.670	**2.040**	0.007	0.168	-0.525	**-2.219**	0.105	0.661
Household demographics								
Share females 20-65	-0.564	-0.345	0.023	0.112	0.301	0.256	-0.194	-0.246
Share males 10-19	-0.775	-0.525	-0.166	-0.910	1.906	**1.790**	-1.161	**-1.632**
Share females 10-19	-0.508	-0.336	-0.178	-0.952	1.816	**1.666**	-0.956	-1.311
Share males 6-9	-3.016	**-1.689**	-0.189	-0.858	2.096	**1.629**	-1.337	-1.555
Share females 6-9	-0.339	-0.200	-0.219	-1.041	1.269	1.036	-1.377	**-1.681**
Share males 0-5	0.024	0.014	-0.200	-0.926	1.780	1.415	-2.537	**-3.016**
Share females 0-5	2.033	1.010	0.048	0.191	2.225	1.534	-2.113	**-2.180**
Share males 65+	-1.413	-0.512	-0.371	-1.088	3.584	**1.802**	-3.213	**-2.417**
Share females 65+	4.101	1.715	-0.165	-0.559	-0.049	-0.028	-1.389	-1.206
Site and round dummies								
Saturia	-1.596	**-4.190**	0.062	1.323	1.130	**4.117**	0.297	**1.617**
Jessore	-1.880	**-5.812**	-0.010	-0.255	0.142	0.609	-0.435	**-2.792**
Round 3	-0.418	-1.242	-0.054	-1.306	-0.458	**-1.889**	-0.270	**-1.664**
Round 4	-0.753	**-2.554**	-0.008	-0.211	-0.546	**-2.572**	-0.284	**-2.002**
Constant	17.775	0.534	10.923	**2.652**	-31.025	-1.292	-8.068	-0.503
Overidentification test	57.454		44.221		36.962		72.936	
p-value	1.000		1.000		1.000		1.000	
Number of observations	1,920		1,920		1,920		1,920	
F	6.35		2.96		2.82		5.53	
p-value	0.000		0.000		0.000		0.000	
R-squared	.		.		.		0.089	
Tests for excluded instruments (F-test):								
Ln per capita expenditure		22.58						
Ln per capita expenditure squared		21.02						
Ln household size		213.54						
Ln husband's current assets		18.96						
Ln wife's current assets		10.54						

Table 11—Expenditure shares on food: animal products, plant products, and cereals, 2SLS estimates

	Assets at marriage as regressors						Current assets as regressors					
	Animal products		Plant products (ex cereals)		Cereals		Animal products		Plant products (ex cereals)		Cereals	
	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
Endogenous regressors												
Ln per capita expenditure	-11.198	-1.308	0.398	1.468	-0.142	-0.465	-11.203	-1.253	0.387	1.369	-0.192	-0.598
Ln per capita expenditure squared	0.841	1.248	-0.026	-1.211	-0.002	-0.087	0.859	1.254	-0.027	-1.237	0.004	0.147
Ln household size	3.301	**10.726**	-0.013	-1.375	0.004	0.321	3.421	**9.824**	-0.018	**-1.659**	0.007	0.527
Ln (husband's assets + 1)	0.057	0.596	-0.001	-0.173	-0.003	-0.829	-0.095	-1.201	-0.003	-1.159	0.009	**3.212**
Ln (wife's assets + 1)	0.181	1.309	-0.001	-0.132	-0.002	-0.503	0.158	0.559	0.011	1.246	-0.021	**-2.069**
Household demographics												
Share females 20-65	-1.013	-0.730	0.104	**2.376**	-0.064	-1.284	-1.112	-0.792	0.097	**2.181**	-0.040	-0.790
Share males 10-19	-2.666	**-2.523**	-0.024	-0.718	0.082	**2.185**	-2.447	**-1.927**	-0.041	-1.016	0.099	**2.164**
Share females 10-19	-2.180	**-1.858**	0.060	1.604	-0.089	**-2.121**	-1.904	-1.463	0.045	1.084	-0.076	-1.614
Share males 6-9	-2.576	**-2.018**	0.090	**2.217**	-0.046	-1.016	-2.789	**-1.817**	0.059	1.206	0.004	0.073
Share females 6-9	-0.947	-0.715	0.046	1.108	-0.087	**-1.837**	-0.674	-0.461	0.031	0.663	-0.070	-1.331
Share males 0-5	-0.235	-0.192	-0.036	-0.934	-0.063	-1.436	-0.431	-0.287	-0.068	-1.439	-0.010	-0.177
Share females 0-5	-1.416	-1.121	0.065	1.630	-0.132	**-2.937**	-1.765	-1.020	0.024	0.438	-0.061	-0.975
Share males 65+	0.667	0.299	0.061	0.868	-0.208	**-2.622**	-0.836	-0.352	0.039	0.515	-0.153	-1.795
Share females 65+	-0.266	-0.127	-0.020	-0.307	0.029	0.383	-1.149	-0.559	-0.034	-0.523	0.064	0.868
Site and round dummies												
Saturia	-0.874	**-3.814**	0.021	**2.834**	0.059	**7.185**	-0.929	**-2.837**	0.011	1.064	0.074	**6.240**
Jessore	0.082	0.293	0.047	**5.258**	-0.009	-0.869	-0.263	-0.947	0.038	**4.353**	0.019	**1.922**
Round 3	-0.587	**-2.506**	0.013	**1.775**	0.030	**3.570**	-0.633	**-2.190**	0.018	**1.938**	0.026	**2.466**
Round 4	-0.391	**-1.731**	0.025	**3.431**	0.016	**2.029**	-0.422	**-1.665**	0.028	**3.458**	0.013	1.466
Constant	34.801	1.284	-1.181	-1.376	1.466	1.517	36.109	1.261	-1.102	-1.217	1.514	1.470
Overidentification test (chi-square)	33.971		27.673		70.673		34.100		23.835		51.293	
p-value	1.000		1.000		1.000		1.000		1.000		1.000	
Tests for excluded instruments (F-test):												
Ln per capita expenditure	22.54						22.54					
Ln per capita expenditure squared	21.02						21.02					
Ln household size	213.54						213.54					
Ln husband's assets	7.47						18.96					
Ln wife's assets	22.27						10.54					
Number of observations	1,920		1,920		1,920		1,920		1,920		1,920	
F	12.58		9.32		16.44		12.48		9.5		17.02	
p-value	0		0		0		0		0		0	
R-squared	0.101		0.043		0.054		0.095		0.040		0.031	

Notes: t-statistics in bold are significant at 10 percent or better. Instruments: Round 1 values: ln per capita expenditure, ln per capita expenditure squared, ln household size; for both husband and wife: dummies for schooling (primary, secondary, university (husband only), age and age squared, birth order, family background: father's schooling, mother's schooling or literacy, parent's land, number of siblings, number of living brothers, year of marriage (see Tables 5-8).

Table 12—Summary of coefficients on alternative measures of men's and women's assets

	Food	Housing	Men's clothing	Women's clothing	Children's clothing	Services	Durables	Health
OLS: Assets at marriage								
Husband	-0.035	0.089	-0.017	-0.018	0.001	**0.031**	**0.012**	-0.040
Wife	0.147	**-0.341**	**0.046**	**0.091**	**0.039**	0.020	0.011	-0.023
OLS: Current assets								
Husband	0.049	**-0.200**	0.007	0.017	**0.020**	0.021	0.003	0.059
Wife	-0.032	**-0.293**	0.034	0.010	**0.039**	0.024	0.003	-0.067
2SLS: Assets at marriage								
Husband	0.421	-0.382	-0.024	0.100	0.029	-0.049	-0.009	0.182
Wife	-0.001	0.060	-0.041	-0.075	**0.154**	**-0.130**	-0.004	**-0.337**
2SLS: Current assets (a)								
Husband	**0.767**	-0.236	**-0.147**	**-0.098**	0.040	**-0.073**	**-0.052**	0.010
Wife	-0.974	-0.572	0.090	0.019	**0.238**	-0.151	0.036	-0.185
2SLS: Current assets (b)								
Husband	**0.781**	-0.335	**-0.134**	**-0.085**	0.042	**-0.079**	**-0.053**	0.068
Wife	-0.894	**-1.392**	0.213	0.133	**0.266**	-0.224	0.024	0.278

	Celebrations	Education	Personal care	Non-durables	Transport	Recreation	Fuel	Cigarettes
OLS: Assets at marriage								
Husband	-0.026	-0.001	**0.022**	-0.000	0.002	-0.003	-0.021	0.000
Wife	**-0.259**	**0.171**	0.024	**0.027**	0.048	-0.008	0.058	0.036
OLS: Current assets								
Husband	-0.050	-0.009	0.012	**0.013**	0.001	-0.001	0.003	0.020
Wife	**-0.138**	**0.169**	**0.053**	**0.013**	**0.134**	-0.002	-0.013	**0.047**
2SLS: Assets at marriage								
Husband	0.137	-0.037	-0.010	0.020	-0.093	0.003	**-0.178**	0.073
Wife	-0.000	**0.339**	-0.054	0.006	0.078	**-0.051**	-0.062	-0.061
2SLS: Current assets (a)								
Husband	0.159	-0.075	**-0.141**	-0.015	-0.042	-0.017	-0.030	-0.003
Wife	0.417	**0.707**	0.193	-0.003	**0.554**	-0.005	**-0.550**	0.095
2SLS: Current assets (b)								
Husband	0.148	-0.059	**-0.148**	-0.013	-0.028	-0.015	-0.028	-0.002
Wife	0.393	**0.823**	0.124	0.018	**0.670**	0.007	**-0.525**	0.105

Notes: Coefficients in bold are significant at 10 percent or better. Instruments include assets at marriage of husband and wife; see Table 9 for other instruments.

APPENDIX TABLES

Table 13—Distribution of durable goods and equipment by owners (851 couples) in percent of households or individuals who own the goods

Category of assets	Owners				Household
	Husband	Wife	Joint	Others	
	(percent)				
Irrigation equipment	11	0	17	16	37
Agricultural equipment	30	0	34	1	55
Transportation	22	1	15	9	42
Bicycle	17	0	12	8	33
Cottage industry	1	1	2	0	4
Household durables	26	15	94	17	99
Radio	11	1	14	8	31
Jewelry	1	70	6	17	81
Fish net	12	0	18	2	28
Large tree	23	0	29	2	48
Others	21	1	29	2	45

Source: IFPRI-BIDS-INFS 1996 survey.

Notes: Irrigation equipment includes (shares of) DTW, LLP, HTW. Agricultural equipment includes plough, hand saw, power tiller, thresher, other agricultural equipment. Transportation includes bicycle, rickshaw/van, boat, motorcycle, pushcart. Cottage industry includes sewing machine, rice mills. Household durables include metal cooking utensils, clock, radio, TV.

Table 14—Distribution of animal ownership, by site (792 couples with animals)

Category of animals	Owners					
	Saturia		Mymensingh		Jessore	
	Husband	Wife	Husband	Wife	Husband	Wife
	(percent)					
Poultry	3	72	1	80	2	88
Sheep, goats	5	22	6	7	3	33
Young cattle	38	9	37	1	17	5
Milk cows	12	2	18	1	11	0
Bullocks	25	4	13	0	13	7

Source: IFPRI-BIDS-INFS 1996 survey.

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