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Intergenerational transfers and the intergenerational transmission of poverty in Bangladesh: preliminary results from a longitudinal study of rural households

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What is Chronic Poverty?

The distinguishing feature of chronic poverty is extended duration in absolute poverty.

Therefore, chronically poor people always, or usually, live below a poverty line, which is normally defined in terms of a money indicator (e.g. consumption, income, etc.), but could also be defined in terms of wider or subjective aspects of deprivation.

This is different from the transitorily poor, who move in and out of poverty, or only occasionally fall below the poverty line.



Abstract

This paper examines the determinants of intergenerational transfers and the association between such transfers and the intergenerational transmission of poverty, based on a new longitudinal dataset from Bangladesh. Women receive less schooling, land and inherited assets than men, and also give up their inheritance to their brothers in exchange for economic and social support. While intergenerationally transferred assets, mostly controlled by the husband, increase levels of current assets and consumption, only husbands' schooling and inherited land, as well as women's social networks, are protective against chronic poverty.

Keywords: intergenerational transfers, schooling, inheritance, dowries, inequality, chronic poverty, Bangladesh.

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1 Executive summary

1.1 Overview and objectives of the study

What are the primary forms of intergenerational transfers in Bangladesh, and how are these transfers associated with current levels of wealth and wellbeing and the probability of being chronically poor? Using a new longitudinal dataset from Bangladesh, this paper examines the determinants of intergenerational transfers (schooling, land and assets) and the extent to which such transfers are associated with the intergenerational transmission of poverty.

This study on intergenerational transfers focuses on a subset of households in the longitudinal study that were previously surveyed in 1996-97. The detailed 1996-97 survey collected information on assets brought to marriage by the head and spouse (most of which came from their parents), assets inherited by the head and spouse, assets inherited by the siblings of the head and spouse and educational attainment and landholdings of the head and spouse's parents. Thus, the dataset contains information on three generations, specifically: assets (physical and human) of the first generation (grandparents), asset transfers to the second generation (parents) and their consequences for the wellbeing of both the second and third (grandchildren) generations. In this paper, we analyse intergenerational transfers received by husband and wife in 794 households whose marriages are intact, that is, couples in their first marriage that have not seen divorce or the death of one partner.

Building on the previous study, this paper: (1) documents patterns of intergenerational transfers and asset inheritance in the study sites; (2) examines the determinants of intergenerational transfers; (3) estimates the contribution of intergenerational transfers of schooling, land and assets to current assets and consumption; (4) examines the role of intergenerational transfers of schooling, land and assets in determining the probability that a household is chronically poor; and (5) explores complementarities between different types of intergenerationally transmitted capital (human capital versus inherited assets) in protecting households from chronic poverty.

1.2 Patterns of intergenerational transfers

Owing to the patriarchal social structure in Bangladesh, it is no surprise that men are strongly favoured in the inheritance of land, house and other assets. Most intergenerational transfers received by wives tend to be received prior to or at marriage, whereas husbands expect to receive sizeable asset transfers after marriage, typically upon the death of parents. Differences in the timing of transfers suggest that focusing exclusively on inheritance, or transfers received after the parents' death, would lead to the neglect of sizeable asset



transfers during the parents' lifetime, particularly to daughters. The distribution of inheritance among siblings also tends to favour brothers, owing partly to Islamic law and partly to sisters' practice of renouncing their inheritance in favour of their brothers, in return for support in case they are widowed or divorced. Women rarely, if ever, receive compensation for foregone inheritance, whereas men are almost always compensated. Finally, owing to the practice of village exogamy, whereby women leave their natal villages to get married, men are more likely to have brothers who live in the same village, compared with women, who have few blood relatives living in the same village.

Not counting inherited assets, husbands bring about four times the value of assets that wives bring to marriage. Gifts at marriage are primarily to the bride, who receives one and a half times the value of what the groom receives. Taking into account all gifts received at marriage, the wife's side receives a net transfer of assets, although the most recent weddings exhibit a net transfer to the groom and, on average, the groom's family receives more gifts than the bride's.

All in all, husbands account for almost 80 percent of households' portfolio of intergenerationally transferred assets, with inherited land comprising 80 percent of the value of the husband's intergenerationally transferred portfolio. Inherited land is also important for wives, accounting for 50 percent of their intergenerationally transmitted assets, but gifts at marriage are also significant, accounting for 43 percent. All in all, inherited land and gifts at marriage add up to 93 percent of wives' intergenerationally transmitted assets.

Not only are inherited assets distributed unequally within households, but also they are distributed unequally across households. The distribution of inherited assets is even more unequal than the distribution of inherited land. However, inequality in current assets is lower, and inequality in current consumption is quite low. This suggests that initial asset inequality may be mitigated by households' accumulation of assets over time, formal and informal transfer mechanisms, labour- rather than asset-related income and public redistribution policies.

1.3 Determinants of intergenerational transfers

Being female imparts a big disadvantage in almost all forms of intergenerational transfers, with the exception being gifts at marriage. Parental wealth – particularly father's land and schooling – increases all forms of intergenerational transfers to children. However, family structure does not affect husbands and wives in the same way. While having more brothers does not diminish land area inherited by husbands, it decreases inherited assets and assets brought to marriage by husbands, possibly because of competition. In contrast, having more brothers increases land inheritance, asset inheritance and marriage gifts received by sisters.



Impacts of intergenerational transfers on current household wealth and household wellbeing

The educational attainment of the husband has positive and significant impacts on current land ownership, current assets and per capita consumption, whereas wife's schooling has a positive and significant impact only on current asset holdings. Land inherited by the husband is positively associated only with current landholdings, but when the definition of land acquired by the husband includes that acquired through inter-vivos transfers, the husband's intergenerationally transferred land increases the size of owned land, the value of non-land assets and per capita consumption in 2007. Intergenerationally transferred assets held by husbands, regardless of definition, increase current landholdings, current asset holdings and per capita consumption, but wives' intergenerationally transferred assets matter only when gifts at marriage are taken into account. Sibling support networks are very important to current household wealth and wellbeing, with the number of the husband's living brothers contributing positively to asset holdings and the number of the wife's living brothers associated with higher per capita consumption.

1.4 Impacts of intergenerational transfers on the probability of being chronically poor

Husbands', but not wives', schooling is associated with lower probabilities of being chronically poor and higher probabilities of being non-poor. Husbands' inherited land is also associated with higher probabilities of never being poor. While previous analysis of these data shows that land, assets and livestock owned as of 1996-97 certainly are protective against chronic poverty, inherited land and assets may not *by themselves* protect households from falling into chronic poverty. It may be the combination of intergenerationally transferred human capital, working together with intergenerationally transferred land and assets, that facilitates the accumulation of land and assets over the life cycle. Interestingly, the wife's social networks – the number of her living brothers – are positively associated with never being poor and negatively associated with chronic poverty.

1.5 Concluding remarks

This preliminary exploration into the patterns and consequences of intergenerational transfers in Bangladesh reveals both that intergenerational transfers are biased against women, and that intergenerational transfers play an important role in the intergenerational transmission of poverty. The analysis also suggests that, to understand the intergenerational transmission of poverty, one needs to go beyond seeing inheritance as the only way wealth is transmitted across generations. An exclusive focus on inheritance might lead us to neglect the importance of schooling, or investment in human capital, as well as transfers made while the parents are still living. This is especially true in the case of daughters, who receive sizeable transfers at the time of marriage.



These findings are interrelated. First, parental investment in children, whether through investment in schooling or transfers of land and assets, tends to be biased against girls. Even if transfers at marriage favour brides, they do not compensate for the asset gap in inherited assets and schooling between men and women. Second, sisters often give up their share of their inheritance for their brothers, in return for economic and social support. Thus, a very small share of the household's human and physical assets comes from the wife – most of the household's assets originate from, and are controlled by, the husband. Third, regressions on current money-metric outcomes – current assets, current landholdings and per capita consumption – show that intergenerational transfers are important determinants of current outcomes. Most of the transfers that significantly affect monetary measures of wellbeing are male-held transfers, such as husbands' schooling, husbands' land and husbands' assets, although the totality of intergenerationally transferred assets to wives is also an important determinant of current assets. Taking these results at face value, it seems that intergenerational transfers received by women do not play an important role in family welfare. Indeed, one of the most important safety nets against falling into chronic poverty is the number of brothers that the wife has.

These results need to be interpreted carefully in the Bangladeshi context. Women not only bring extremely low levels of schooling and assets to marriage, but also operate in an environment where they may not be able to realise economic or monetary returns to those transfers. Thus, it is not surprising to see low monetary returns to women's physical and human assets. In contrast, the existing analysis shows high returns to women's social networks – their network of brothers. Taken together, these findings imply that women are extremely dependent on male relatives – their husbands and their brothers. Other studies that examine non-monetary outcomes using the earlier dataset – such as health and educational attainment of children – show that resources controlled by women increase investments in child schooling and improve child health, particularly for girls. In an environment where women are restricted from realising monetary or economic returns to intergenerationally transferred assets, women invest in non-monetary assets – their children – and also realise returns from non-monetary assets, such as their support network of brothers. Similarly, in an environment that is not conducive to women's realising returns to their physical and human capital, sisters are a drain on the household's resources rather than an asset – a sharp contrast with more gender-egalitarian societies like the Philippines, where daughters are better educated and act as the family's insurers. An analysis of the intergenerational transmission of poverty would therefore do well to examine not only physical and financial assets transferred, but also intra-generational support networks.

The finding that schooling, but not inherited assets, is a significant deterrent against chronic poverty is worth noting. While inherited land and assets help build a household's asset base, which in itself is protective against chronic poverty, as the Bangladeshi economy modernises and non-farm enterprises become more important, investment in human capital will become even more crucial in helping households move out – and stay out – of poverty. If



modernisation of the economy is accompanied by relaxation of those labour market constraints that diminish returns to women's labour (as in rise of garment factories and female employment), women's education may become more important to money-metric measures of welfare and movements out of poverty.

2 Introduction

Despite the argument that the most enduring form of poverty is intergenerationally transmitted poverty (Hulme *et al.*, 2001), there is very limited evidence from developing countries regarding the extent to which intergenerational transfers contribute to the persistence of poverty across generations. There is widespread evidence from developed countries of high intergenerational correlations of schooling attainment, earnings and income, indicating that parental endowments affect the position of children in later life (see, for example, studies cited by Behrman, 1997).¹ Intergenerational correlations in schooling attainment in a number of societies range from 0.3 to 0.4. In the United States, intergenerational correlations in earnings or income are 0.4 or greater. The evidence from developing countries is more limited, owing to the lack of reliable data on assets and inheritance in general, and more specifically, the lack of data on asset positions of parents and their children.

Given the barriers to asset accumulation faced by the poor (Carter and Barrett, 2006; Quisumbing, forthcoming), and missing or imperfect asset markets in developing countries, it is highly probable that inherited assets play a large role in determining household and individual wellbeing. However, whether families have a chance to accumulate assets over the life cycle, which might serve to mitigate inequality in inherited assets, or whether having initial asset endowments acquired through inheritance increases the probability of further accumulating assets, needs to be ascertained.²

Analysing the role of intergenerational asset transfers and poverty over the long run also requires paying attention to the entire range of assets transferred by parents to children, as well as the timing of those transfers. In developing countries, for example, land and physical assets are probably the most important and valuable transfers made by parents to children. However, schooling is also a form of intergenerational transfer, one which is increasing in importance, particularly with the rise of non-farm employment opportunities. Paying attention

¹ According to Behrman (1997), studies that measure intergenerational correlations of earnings with control for measurement error include Behrman and Taubman (1990), Solon (1992) and Zimmerman (1992); previous estimates without such controls, summarised in Becker and Tomes (1986) and Behrman and Taubman (1985), averaged about half as large correlations.

² In 15 villages in rural Ethiopia, for example, while the Gini coefficient of assets at marriage was high, the Gini coefficient of current assets was lower, indicating that couples did have other avenues for accumulating assets over the life cycle (Fafchamps and Quisumbing, 2005).



only to transfers of physical assets without considering human capital investments would grossly understate the transfers that parents make to children (Quisumbing *et al.*, 2004). The timing of transfers also counts. In developing countries, the two most important occasions for assets to be transferred from one generation to the next are marriage and the death of a parent. More often than not, analysts pay attention only to inherited transfers, when in fact a larger portion of assets may be transferred at the marriage of a child, or throughout the parents' lifetime.³

Dowries, for example, have often been interpreted as advance inheritance of daughters (even if their control by those daughters is questionable). Transfers at marriage are especially important because, in many rural economies, marriage symbolises not only a new family unit, but also the beginning of a new productive enterprise (Fafchamps and Quisumbing, 2005). A complete understanding of intergenerational transfers, especially in developing countries, should therefore take into account inter-vivos transfers, particularly transfers at marriage, as well as bequests and inheritance. Needless to say, the data demands of such an exercise are quite high, and very few quantitative datasets exist that contain information on a wide range of transfers as well as their timing.

This paper examines the determinants of intergenerational transfers (schooling, land and assets) and the extent to which such transfers are associated with the intergenerational transmission of poverty, using a new longitudinal dataset from Bangladesh. Since July 2006, the International Food Policy Research Institute (IFPRI) and the Chronic Poverty Research Centre (CPRC), together with Bangladeshi collaborators Data Analysis and Technical Assistance Ltd (DATA), have been working on a longitudinal study of 1787 core households in 102 villages in rural Bangladesh. This ongoing study seeks to understand how living standards of households have changed over a six- to 12-year period, and which factors, institutions and processes have trapped certain households in chronic poverty while allowing others to escape from it. The longitudinal study is itself based on evaluations previously conducted by IFPRI in Bangladesh on microfinance (1994) and the micronutrient and gender equity impact of new agricultural technologies (1996-97) and of food and cash transfers for education (2000 and 2003).

The present study focuses on the agricultural technology households, a subset of households in the longitudinal study, which were previously surveyed in 1996-97.⁴ The IFPRI 1996-97 survey was designed to shed light on many aspects of household resource

³ In the US, for example, Cox and Raines (1985), analysing data from the 1979 President's Commission on Pension Policy survey, find that inheritances only account for about 25 percent of the value of total transfer receipts, implying that inter-vivos transfers seem to be three times as large as inheritance (Laitner, 1997).

⁴ The 1996-97 data can be downloaded from the IFPRI website, www.ifpri.org/datasets. See Bouis *et al.* (1998) for a description of the study sites and the finding regarding the micronutrient impact of the agricultural technologies.



allocation, including intergenerational transfers. Using this survey in combination with the 2006-07 resurvey provides the opportunity to answer many questions that are key to understanding the role of inherited assets in the intergenerational transmission of poverty in Bangladesh. In addition to information on consumption expenditures, household demographics, income and employment and current assets at the household and individual levels, the 1996-97 survey collected information on assets brought to marriage by the head and spouse (most of which came from their parents), assets inherited by the head and spouse, assets inherited by the siblings of the head and spouse and educational attainment and landholdings of the head and spouse's parents. Thus, the dataset contains information on three generations, specifically: assets (physical and human) of the first generation (grandparents), asset transfers to the second generation (parents) and their consequences for the wellbeing of both the second and third (grandchildren) generations. These data have been analysed in Quisumbing and de la Brière (2000), Hallman (2000) and Quisumbing and Maluccio (2003), but focusing on assets at marriage rather than inheritance.

Previous analysis of the 1996-97 data highlighted several patterns that characterise intergenerational transfers in Bangladesh. First, women seldom inherit land, which is consistent with Islamic inheritance laws, whereby daughters inherit half the share of sons, and the widespread practice of renouncing their share in favour of their brothers. Second, even when larger transfers at marriages to brides are considered, women are disadvantaged in terms of assets brought to marriage – grooms control most of the assets with which the new couple starts married life. Third, this asset gap between men and women has important implications for the next generation. Analysis using this dataset has shown that the greater a woman's asset holdings at marriage, the larger is the share the household spends on children's education (Quisumbing and Maluccio, 2003), and a higher share of women's assets is associated with better health outcomes for girls (Hallman, 2000).

Building on the previous study, the specific objectives of this paper are: (1) to document the pattern of intergenerational transfers and asset inheritance in the study sites in Bangladesh; (2) to examine the determinants of intergenerational transfers, as a function of parental background characteristics and individual characteristics; (3) to estimate the contribution of intergenerational transfers of schooling, land and assets to current assets and consumption; (4) to examine the role of intergenerational transfers of schooling, land and assets in determining the probability that a household is chronically poor; and (5) to explore complementarities between different types of intergenerationally transmitted capital (human capital versus inherited assets) in protecting households from chronic poverty.

The paper is organised as follows. It begins by characterising the pattern and timing of intergenerational transfers and asset inheritance, highlighting differences between transfers to men and women. It then estimates the determinants of intergenerational transfers and assets at marriage, as a function of individual characteristics and family background. Drawing on the newly collected data, it compares the impact of inherited assets and



intergenerational transfers, more broadly defined to include transfers at marriage, on current landholdings, assets and consumption. It then explores how households' poverty transition categories (chronically poor, moving out of poverty, falling into poverty, never poor) are affected by the inherited human and physical capital of both husband and wife, sibling support networks, household characteristics as of the baseline survey and shocks experienced by the household, controlling for unobserved community characteristics. The last section presents conclusions and areas for future research.

3 Survey design and characteristics of surveyed households

The design of the longitudinal study has been extensively described in Quisumbing (2007); only a brief summary focusing on the agricultural technology study sites is presented here. The micronutrients and gender equity study (henceforth called the agricultural technology study) originally surveyed 47 villages in three sites in Bangladesh, each site chosen as part of an impact evaluation of programmes disseminating new agricultural technologies.⁵ Commercial vegetable technologies were being disseminated in Saturia *thana*⁶, Manikganj district, referred to below as Saturia; polyculture fish production technologies were 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 programmes for disseminating these technologies. Saturia and Mymensingh are located in the central part of Bangladesh, whereas Jessore is in the west, close to Calcutta and the Indian border. In two sites (Saturia and Jessore), technologies were being introduced through non-governmental organisation (NGO) programmes targeted exclusively to women, which were provided training and credit. At the third site (Mymensingh), the Mymensingh Aquaculture Extension Project (MAEP) and 15 Department of Fisheries extension agents provided 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 is that, in Jessore, the NGO (Banchte Shekha) had arranged long-term leases of ponds that are managed by groups of women (ranging in number from five to 20). In Mymensingh, ponds are owned and managed by single households or households that have shared ownership. The NGO programmes in Saturia and Jessore are still operational, though with several modifications, but the aquaculture extension programme in Mymensingh has ended and been absorbed by the regular Department of Fisheries extension system.

⁵ The description of the 1996–7 survey draws on Quisumbing and de la Brière (2000).

⁶ Bangladesh has 64 districts, which are divided into subdistricts called upazilas. At the time the baseline survey was conducted, subdistricts were called thanas.

In designing the original evaluation surveys, careful attention was paid to establishing both intervention and comparison/control groups so that single difference estimates of short-term project impact could be derived. In the agricultural technology evaluation, villages were selected randomly to include those with and without the intervention. For the agricultural technologies evaluation, an equal number of households were interviewed in villages which had and had not benefited from the dissemination of three different technologies (improved vegetables, group fishponds and individual fishponds). A village census was used to draw up the sampling frame, and both adopters and non-adopters of the technologies were selected randomly from the relevant sampling frames and strata. The agricultural technology study also included a cross-section of all other non-adopting households representative of the general population in the villages.

Table 1: Sample sizes of treatment and control groups, by intervention

Intervention/year	Treatment	No. of households	Control	No. of households
Agricultural technologies				
Improved vegetables (1996-97, 2000 and 2006-07)	NGO members in villages where improved technologies were disseminated	110	NGO members in villages where improved technologies had not yet been disseminated	110
Individual fishponds (1996-97 and 2006-07)	Individual pond owners in villages where improved technologies were disseminated	110	Individual pond owners in villages where improved technologies had not yet been disseminated	110
Group fishponds (1996-97 and 2006-07)	NGO members in villages where improved technologies were disseminated	110	NGO members in villages where improved technologies were disseminated	110

Note: The agricultural technology sites also include 110 other households randomly selected from non-NGO members in each site.

Source: Bouis et al. (1998)

Table 1 summarises the sample for each of the three types of agricultural technologies included in the original evaluation survey, and lists the number of programme and control households in each site. 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 'programme', 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, 2000). We drew on the results of the qualitative study to formulate questionnaire modules on pre-marriage assets, transfers at marriage, inheritance and indicators of women's mobility and empowerment, which were then fielded in the fourth survey round.

In order to obtain information on micronutrient deficiencies across the agricultural year, the agricultural technology households were surveyed on four occasions between 1996 and 1997. Then, in 2000, IFPRI and DATA conducted a follow-up study in one of the three agricultural technology sites (Saturia, in Manikganj district) as part of a study on linkages between agriculture, nutrition and women's status. All sites were visited as part of a separate study evaluating the social impact of the agricultural technologies (Hallman *et al.*, 2007). Finally, in 2006, IFPRI, DATA and CPRC began a major project to resurvey all the households surveyed in each of the three evaluations. While the focus of this study was on understanding the drivers and maintainers of chronic poverty in rural Bangladesh, the intervention and comparison groups were maintained from the previous study. In addition, children who had left the original household and set up their own households were tracked as long as they had not migrated from their district. Data collection for the longitudinal study, consisting of sequenced and integrated qualitative and quantitative phases, has just been completed; see Davis (2007), Quisumbing (2007) and Baulch and Davis (2007) for preliminary analyses of the focus group discussions, quantitative household survey and life histories, respectively. An attrition analysis for all study sites is also presented in Quisumbing (2007). Attrition rates across survey sites differ, with a low attrition rate of 4 percent in the improved vegetables site to 11.1 percent in the individual fishponds site over the ten-year survey interval. All in all, attrition per year is relatively low, at 0.4 percent per year. In these sites, attrition is age related: households with a larger proportion of persons older than age 55 were more likely to leave the sample. Unobserved locational effects were also important determinants of attrition. Households in Saturia are significantly less likely to leave the agricultural technology sample, probably reflecting the ease of interviewing in Manikganj, which is close to Dhaka, and where NGOs have been working for a long time. In contrast, the Mymensingh site, which is traditionally more conservative, has a much higher attrition rate.

Table 2: Characteristics of core and intact couple households in agricultural sites

Household characteristics and current outcomes	Core households, full sample (n=908)		Sample of intact couples (n=818)	
	Mean	Standard deviation	Mean	Standard deviation
Landholdings in 2007 (decimals)	146.54	202.05	143.24	194.89
Value of asset holdings in 2007 (2007 taka)	16695.55	24146.31	16243.18	23262.14
<i>Per capita expenditures and poverty incidence</i>				
Per capita expenditure in baseline survey (in 2007 prices)	967.64	564.57	951.41	542.93
Per capita expenditures in 2006/07	1491.63	756.84	1491.24	761.72
Growth rate of per capita expenditures	0.08	0.10	0.08	0.10
Whether poor in baseline survey	0.62	0.49	0.63	0.48
Whether poor in 2007	0.13	0.34	0.13	0.33
<i>Poverty transition category</i>				
Chronically poor	0.11	0.32	0.12	0.32
Falling into poverty	0.02	0.13	0.01	0.12
Moving out of poverty	0.51	0.50	0.51	0.50
Non-poor	0.36	0.48	0.36	0.48
<i>Characteristics in baseline survey (1996)</i>				
Age of the household head	44.84	12.80	44.98	12.28
Husband's years of schooling	3.23	4.03	3.17	4.04
Wife's years of schooling	1.61	2.74	1.66	2.78
<i>Demographic characteristics</i>				
Household size	5.67	2.65	5.67	2.48
Percent males 0-4 years	5.01	9.72	5.17	9.82
Percent females 0-4 years	4.61	9.27	4.81	9.46
Percent males 5-14 years	13.25	14.32	13.53	14.32
Percent females 5-14 years	11.10	13.60	11.19	13.49
Males 55 and older	4.69	8.88	4.81	9.00
Females 55 and older	4.36	9.26	3.84	7.85

Notes: Core households refer to original respondents in 1996-97 who were re-interviewed in 2006-07. These do not include household splits.

Intact couples refer to those who were in their first marriages as of 1996-97, and who were re-interviewed in 2006-07.

All monetary values are in 2007 taka.

Table 2 presents current land and asset holdings, current per capita consumption expenditures, poverty transition categories and household characteristics of core households and intact couple households as of the first round of the original survey. All monetary values are in 2007 taka, converted using the consumer price index (CPI). Core households refer to original respondents in 1996-97 who were re-interviewed in 2006-07, not including household splits. Intact couple households refer to those households in which the husband and wife were in the first marriage in 1996-97, i.e. neither spouse had been divorced or widowed. We focus on intact couples in this analysis, similar to earlier work by Quisumbing and de la Brière (2000) and Quisumbing and Maluccio (2003), because it enables us to analyse intra-household differences as well as inter-household differences in intergenerational transfers.



Because descriptive statistics of core and intact couple households are very similar, in the paper, statistics of intact couple households that form the sub-sample used in the regression analysis are presented.

Current landholdings refer only to owned land, and consist of the sum of homestead, owned cultivated land and other owned land, in decimals.⁷ On average, intact couple households had 143.24 decimals of land in 2007. The value of asset holdings, in 2007 taka, includes the value of consumer durables, agricultural equipment, non-agricultural durables, jewellery and livestock. Although respondents listed trees as an asset, we did not include them in the asset aggregate because of difficulty in valuing them. The average value of assets owned by households amounted to 16,243 taka in 2007.

The consumption variable is constructed in the following fashion. Food and non-food consumption were covered in separate modules in the questionnaire. For each food item, households were asked about the amounts they had consumed out of purchases, out of own production and from other sources (including wages, gifts, government programmes and begging) in the past week.⁸ In general, these consumption levels are valued using prices obtained from local market surveys fielded at the same time as the household survey. Non-food items include both consumables such as matches, batteries, soap, kerosene and the like, as well as clothing, education and transport. We also include local property taxes, since public goods provision is often linked to local taxes (Deaton and Zaidi, 2002), and zakat, which is linked to wealth but is voluntary in Bangladesh.⁹

Following current best practice in computing consumption expenditures from household surveys (Deaton and Zaidi, 2002), our expenditure aggregate excludes the following: (1) dowry, wedding, pilgrimage (Haj) and funeral costs, which tend to be lumpy expenditures financed out of savings, asset disposal or borrowing; (2) durable goods (appliances, means of transportation), housing and housing repairs; (3) health and medical expenditures; and (4) costs of legal and court cases. Most of these expenditure categories are 'lumpy', infrequent expenditures; in related work by Baulch and Davis (2007) on the same dataset, these expenditures are linked to a decline in wellbeing. While wedding expenses could be treated

⁷ 100 decimals = 1 acre.

⁸ Respondents were asked whether they had consumed the item in the past three days and, if not, in the past seven days.

⁹ According to the Columbia Encyclopaedia (cited in <http://www.answers.com/topic/zakat>), zakat is an Islamic religious tax, one of the five basic requirements (or 'pillars') of Islam. All adult Muslims of sound mind and body with a set level of income and assets are expected to pay zakat. Zakat is due yearly on certain types of property and is distributed to eight categories of individuals specified by the Qur'an. Being religiously prescribed, zakat is distinct from charity (*sadaqa*) which is voluntary. Zakat is essentially a personal exercise with no intermediary control, and could be given directly to its recipients, although a central treasury often collects it. In recent times, Pakistan, Sudan and Saudi Arabia have enacted legislation to enforce the zakat.



as current expenditures (similar to parties and feasts), dowries have often been interpreted as ‘female inheritance’ or a form of intergenerational transfer (Botticini and Siow, 2003) that technically does not count as consumption. In the Bangladeshi context, as in other parts of South Asia, because dowries may not be under the bride’s direct control, and are subject to considerable inter-familial bargaining, which may escalate into domestic violence (Bloch and Rao, 2002), it is not clear whether dowry expenditures contribute to wellbeing, for which consumption expenditures are a proxy. Medical expenditures are excluded following Deaton and Zaidi’s (2002) recommendation to exclude health expenses in countries where the elasticity of health expenditure with respect to total expenditure is low, and also because health expenditures are often a ‘regrettable necessity’ (p.32) that does not increase household welfare. Since most houses are owner occupied or constructed, it was difficult to impute a rental value of housing. Although a very small percentage of households reported housing and land rentals, these values were very large and were clear outliers, and could have reflected renting a space for business or simply land rent. Because jewellery is regarded as an important asset for women to accumulate in Bangladesh, expenditures on jewellery – which also tend to be lumpy – are also not included in the consumption aggregate (but jewellery is included in the asset aggregate). Different recall periods were used for different items; for comparability, all are changed into monthly (30-day) consumption and expressed in per capita terms. Poverty incidence was then computed by comparing the per capita poverty line with the relevant area-specific poverty lines for the original survey round and for 2006-07 based on the area-specific upper HIES-2005 poverty line (household income and expenditure survey), deflated back to the original survey years as needed (BBS, 2006).¹⁰

While this dataset is not nationally representative, comparisons of per capita consumption and poverty in the baseline survey and in 2006-07 show definite increases in per capita consumption, and impressive reductions in poverty. In the agricultural technology sites, incidence declined from 62 percent in 1996 to 13 percent in 2006-07 (on average, a yearly reduction of 4.9 percentage points) (Table 2). Movements of previously poor households across the poverty threshold have been substantial – 51 percent of households in the agricultural technology sites were households that were previously poor but now are non-poor. Despite the reduction in poverty, 11 percent of households in the agricultural technology sites are chronically poor, indicating that their conditions have not improved significantly over the long term.

Household heads of the intact couple households in our survey were around 45 years old during the baseline (Table 2). As of the baseline, most household heads and their spouses had very little schooling – husbands had 3.17 years of schooling and wives 1.66 years. More

¹⁰ We thank Ambar Narayan and Nobuo Yoshida for making the poverty line estimates for the past years available.



than half of household heads (54 percent) have never attended school. In 1996, household size in the agricultural technology sites was 5.67 persons.

4 Patterns of intergenerational transfers in rural Bangladesh: a description

In many cultures, most intergenerational transfers occur at two points in a person's life cycle – at marriage and upon the death of the parent. In Bangladesh, marriage provides an occasion for families to make large transfers to the new couple, but the final division of the parents' property occurs upon death. Bangladesh is also a country where the timing of intergenerational transfers is gender specific, with transfers to daughters occurring as dowries at the time of marriage and bequests, largely to sons, occurring at the death of the parent. Thus, we discuss inheritance and transfers at marriage separately in this paper.

4.1 Patterns of inheritance before and after marriage

Table 3 presents descriptive statistics on the value and type of inheritance received by husbands and wives, as of 1996-97. In many societies, inheritance occurs upon the death of a parent, upon which the division of the deceased's estate is finalised. However, it is also possible that 'advance inheritance', or inter-vivos, transfers occur. We take account of both possibilities in Table 3. We examine inheritance received before and after marriage, in both the full sample of husbands and wives (first four columns of Table 3) and a sub-sample, in which we assume that inheritance decisions are complete because both parents are deceased (last four columns of Table 3). The age difference between husbands and wives (8.9 years on average, in our sample) implies that husbands will have received their inheritance much earlier than wives. Indeed, among husbands, only 20 percent still have living fathers and 46 percent have mothers who are still living, but among wives, close to 40 percent have fathers who are still alive and 60 percent have mothers who are living.

Table 3: Land asset inheritance of husbands and wives, agricultural technology sites, Bangladesh, 1996-97

Asset	Full sample		Sample with completed inheritance					
	Husbands n=949		Wives n=949		Husbands n=475		Wives n=296	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
<i>Status of parents of husband and wife</i>								
Whether father alive	0.20		0.38		0.00		0.00	
Whether mother alive	0.46		0.62		0.00		0.00	
<i>Land</i>								
Land from father	57.86	9.00	13.01	0.00	75.51	31.50	21.09	0.00
Land from mother	4.20	0.00	1.84	0.00	6.34	0.00	4.29	0.00
Total inherited land	62.06	12.00	14.85	0.00	81.85	36.00	25.38	0.00
Total potential land inheritance	113.07	60.00	90.56	35.00	118.74	64.00	66.36	7.91
Value of inherited land, 2007 prices	98382.68	7952.00	18814.39	0.00	112043.10	15904.00	30407.39	0.00
Total land of father and mother	268.87	140.00	339.07	135.00	283.72	141.50	316.92	118.25
Share of total familial land received	0.24	0.20	0.03	0.00	0.32	0.28	0.07	0.00
Share of total familial land potentially to be received	0.47	0.42	0.28	0.25	0.49	0.45	0.23	0.17
<i>Other inheritance received before marriage, 2007 prices</i>								
Inherited house	3111.22	0.00	0.00	0.00	3578.64	0.00	0.00	0.00
Inherited durables								
From father	148.24	0.00	0.00	0.00	203.50	0.00	0.00	0.00
From mother	27.76	0.00	0.00	0.00	55.15	0.00	0.00	0.00
Inherited cattle								
From father	1615.99	0.00	462.52	0.00	1666.92	0.00	509.47	0.00
From mother	78.29	0.00	280.84	0.00	82.25	0.00	434.77	0.00
Total value of pre-marital inheritance from both parents	4981.51	0.00	743.36	0.00	5586.46	0.00	944.24	0.00
<i>Inheritance received after marriage</i>								
Received inheritance from father after marriage	0.93		0.07		0.93		0.07	
Received inheritance from mother after marriage	0.99		0.05		0.99		0.05	
House	8806.17	1834.00	0.00	0.00	10107.56	1750.00	0.00	0.00
Durables								
From father	680.96	88.40	0.00	0.00	842.28	210.00	0.00	0.00
From mother	434.67	307.00	0.00	0.00	472.53	416.00	0.00	0.00
Cattle								
From father	4926.32	2262.50	240.15	0.00	4689.70	2600.00	288.89	0.00
From mother	2604.00	0.00	111.79	0.00	2893.33	0.00	90.58	0.00
Total value of post-marital inheritance from both parents	3213.17	0.00	351.93	0.00	4066.89	0.00	379.47	0.00



The most striking pattern in Table 3 is the extreme gender disparity in inheritance between husbands and wives. Husbands in the full sample had inherited 57.86 decimals from their fathers at the time of the interview (1996), compared with wives, who inherited only 13.02 decimals from their fathers on average. Moreover, the median value of inherited land is zero for wives. Both husbands and wives also inherited land from their mothers, although maternal inheritance is a small proportion of total inherited land, with median values equal to zero for both husbands and wives. For the full sample, husbands inherited 4.20 decimals from their mothers and wives inherited 1.84 decimals. Taking inheritance from both parents into account, inherited land of wives accounts for less than a quarter of husband's inherited land – at 14.85 decimals compared with 62.06 decimals. Using land prices at the time of acquisition, converted to 2007 prices using the CPI, this translates to 98,383 taka for husbands and 18,814 taka for wives. In terms of what each spouse receives as a proportion of their parents' estate, husbands received a quarter of their parents' land, whereas wives received only 3 percent of their parents' total landholdings. It can be argued that these are underestimates of potential land inheritance because the estate is divided completely only upon the death of a parent. Indeed, many of the respondents state that they will potentially inherit more land from their parents – potential land inheritance of husbands is almost twice the land already inherited (113 decimals versus 62 decimals), whereas potential land inheritance of wives is six times what has already been received (91 decimals compared with 15 decimals). Taking potential land inheritance into account raises the share of the parental land estate to almost half (47 percent) for husbands and 28 percent for wives. Nevertheless, land inheritance is still biased against women.

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Husbands also inherit more assets from their family: adding up the value of the house inherited, durables and cattle, the value of assets inherited prior to marriage amounted to 4,981 taka. In contrast, wives inherit only livestock (cattle) from their natal families, amounting to only 743 taka.

Both husbands and wives may also receive transfers from their parents after marriage, typically upon the death of the parent. However, while almost all husbands received inheritance from their parents after marriage (93 percent received assets from fathers, 99 percent from mothers), only 7 percent of wives received assets from their fathers and 5 percent from their mothers. Similar to the pattern of premarital inheritance, husbands inherited houses, durables and cattle, amounting to 3,213 taka in total, whereas wives' post-marital inheritance, consisting of cattle, was only about a tenth of the value of what husbands inherited, at 352 taka.

Because comparisons using the whole sample may be mixing up individuals whose parents have completed inheritance decisions (because, for example, both parents are deceased) as well as individuals whose parents have not yet disposed of their assets, we recomputed the same set of descriptive statistics for the sub-sample where both parents had died. Even after eliminating individuals with incomplete inheritance decisions, the gender gap is still apparent.

¹¹ It is also possible that, even if both parents are deceased, property may not be completely divided – if heirs decide to continue farming jointly to preserve economies of scale, for example – or that the respondent, if living away from his or her parents, may not be aware of the final division. Note that potential land inheritance is only an estimate made by the respondent. It is quite possible that land and other assets may be sold off to pay debts, leaving much less to be divided among heirs.



Husbands inherited 75.51 decimals from their fathers and wives 21.09 decimals. The gender gap is less with maternal inheritance, with husbands inheriting 6.34 decimals and wives 4.29 decimals. Total inherited land from both parents amounts to 81.85 decimals for husbands and 25.38 decimals for wives. This translates to 32 percent of familial land received by husbands and only 7 percent for wives. When we include land potentially to be inherited, husbands' share of land potentially to be inherited was 50 percent of familial landholdings and wives 23 percent.

As expected, values of assets received prior to marriage are higher in the sample with complete inheritance. Husbands inherited 5,586 taka worth of assets (house, durables and cattle), whereas wives inherited less than a fifth, at 944.24 taka. Inheritance after marriage also favours husbands in the sub-sample with completed inheritance decisions: the total value of assets inherited by husbands amounted to 4,067 taka and wives 379 taka – less than a tenth of husbands' assets.

To summarise: Inheritance of land, house and other assets strongly favours men, who receive the bulk of their inheritance upon their parents' death. In contrast, most inheritance received by wives tends to be received prior to or at marriage. While both husbands and wives inherit from both parents, maternal inheritance is less biased against wives than is paternal inheritance.

4.2 Inheritance patterns and sibling support systems

Table 4 compares land received by both husbands and wives from their fathers and mothers, as well as land inheritance received by their sisters and brothers. The sample of wives included in this table is restricted to first wives and female heads of households, owing to the limited sample size of second wives. Similar to Table 2, we find 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) the widespread practice of renouncing their share in favour of their brothers. In our sample, when estate division occurred, about a third of the female respondents reported that they or their sisters gave up their share of land inheritance in favour of their brothers. In contrast, only 2-3 percent of husbands reported giving up their share of the inheritance. Moreover, women rarely request monetary compensation, since women view this practice as an insurance mechanism to maintain ties with their brothers, who would have to support them in the event of divorce or widowhood. Indeed, only about 11-14 percent of the 215 wives who gave up their inheritance reported being compensated, whereas about 40 percent of the much smaller number of husbands (18) who reported giving up their share of land received compensation.

Table 4: Incidence of practice of giving up land inheritance for siblings, and amount of compensation received

	Husbands				Wives (a)			
	Land from father		Land from mother		Land from father		Land from mother	
	n	Mean	n	Mean	n	Mean	n	Mean
Land owned by parent (decimal)	846	281.13	846	20.47	899	334.48	899	23.46
Whether parent divided property	766	0.74	228	0.59	820	0.40	317	0.25
Land received from parent (decimal)	845	81.01	839	6.58	895	30.60	895	5.56
Share of land received from parent	766	0.89	221	0.32	817	0.28	313	0.35
Average area received by brothers of parent's land (decimal)	716	74.65	709	5.73	821	98.54	778	5.66
Average area received by sisters of parent's land (decimal)	693	19.79	685	1.98	763	24.21	737	3.57
Whether sisters gave up their share of land	468	0.32	107	0.34	263	0.31	58	0.31
Whether respondent gave up share of land	573	0.02	152	0.03	304	0.36	76	0.33
If yes, whether compensation received	13	0.38	5	0.40	177	0.14	38	0.11

Note: Sample restricted to first wives and female heads of household only, because of limited sample size of second wives.

Table 5: Potential sibling support networks of husbands and wives

	Husbands		Wives	
	Mean	Median	Mean	Median
Number of brothers	2.45	2.00	2.71	3.00
Number of living brothers	1.79	2.00	2.23	2.00
Number of brothers living in same village	1.30	1.00	0.33	0.00
Number of sisters	2.48	2.00	2.60	2.00
Number of living sisters	1.86	2.00	2.16	2.00
Number of sisters living in same village	0.34	0.00	0.19	0.00

Table 5 presents indicators of potential sibling support networks for husbands and wives. Because of the practice of village exogamy (women leave their natal villages to marry), it is highly unlikely for a woman to live in the same village where her parents and siblings reside. Thus, husbands have, on average, 1.3 brothers living in the same village, whereas wives have 0.33 brothers. Half of the husbands in the sample have one brother living in the village, whereas half of the wives have no brothers living in the same village. It is therefore easier – in terms of distance and transactions costs – for husbands to seek assistance from their brothers than for wives to approach their brothers for help. Again, reflecting the practice of village exogamy, husbands tend to have 0.34 sisters living in the same village whereas wives have 0.19 sisters living in the same village. When we examine the median, we note that half



of husbands and half of wives have no sisters living in the same village. Compared with brothers, it seems more difficult for both husbands and wives to seek social support from their sisters, who are more likely to live in another village. Indeed, because husbands' sisters may have given up their share of their inheritance in favour of their brothers, husbands may be expected to support sisters living in a different village, rather than receive support from them.

To summarise: The distribution of inheritance among siblings tends to favour brothers, owing partly to Islamic law and partly to sisters' practice of renouncing their inheritance in favour of their brothers, in return for support in case they are widowed or divorced. Women rarely, if ever, receive compensation for foregone inheritance, whereas men are almost always compensated. Finally, owing to the practice of village exogamy, men are more likely to have brothers who live in the same village, compared with women, who have few blood relatives living in the same village.

4.3 Assets and transfers at marriage

Any discussion of inheritance in Bangladesh would be incomplete without paying attention to transfers that occur at the time of marriage, particularly the practice of giving dowries. To explore more fully the timing of intergenerational transfers, the 1996-97 survey contained detailed questions on assets that the couple brought to the marriage, distinguishing between assets that were received as part of their inheritance (discussed in the previous section), assets that each individual already had at the time of marriage or were transferred on the occasion of marriage and gifts to the couple and their families. The following discussion draws heavily on Quisumbing and de la Brière (2000), although this paper uses slightly different asset categories and all values have been converted to 2007 values.

Not counting inherited assets, husbands brought more assets to marriage than did their wives (Table 6). Husbands brought, on average, 0.61 decimals of land, compared with wives, who brought 0.23 decimals. 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. Among husbands' assets at marriage, the most important were a house, clothing and livestock. Wives' most valuable assets at marriage were clothing, livestock and food – a bride will typically bring stores of grain and other food items with her when she moves to her in-laws' compound. All in all, including land, husbands brought 5,748 taka of assets to marriage, whereas wives brought 1,343 taka.

Table 6: Assets and gifts received at marriage, husband and wife who are both in their first marriage (n=794)

	Husband	Wife
<i>Assets at marriage</i>		
Land (decimals)	0.61	0.23
Value of assets (in 2007 taka)		
Value of land	1237.59	124.09
Value of house	3979.59	0.00
Value of livestock	1727.24	470.35
Value of clothing	2021.41	1144.20
Value of utensils	175.25	58.08
Value of food items brought at marriage		340.13
Total value of assets at marriage	5747.66	1343.59
<i>Gifts received at marriage*</i>		
Gifts to the couple (individuals)		
Land (decimals)	0.00	0.00
Value of gifts (in 2007 taka)		
Value of land given	20.55	60.50
Value of jewellery	195.17	4452.55
Value of other gifts	9791.18	11277.84
Total value of gifts	10006.90	15790.90
<i>Gifts to the couple's families (in 2007 taka)</i>		
Value of jewellery	34.43	14.46
Value of other gifts	757.14	428.02
Value of gifts to the couple's families	791.57	442.49

Note*: Gifts to the bride at the time of marriage are typically called 'dowry' in most studies of marriage transfers.

Gifts at marriage are predominantly to the bride. Information on transfers at marriage was obtained from a specific module administered to the female respondents. Asset categories for these modules were complemented by specific questions about jewellery (nose pins) and cash (*shelami*) exchanges at the moment of the wedding. These specific assets were suggested by the qualitative analysis (Naved, 2000). 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'. Gifts to the couples' respective families are reported separately in Table 6.

Data presented in Table 6 point to larger gifts to the bride at the time of marriage, amounting to 15,790 taka compared with 10,007 taka to the groom.¹² Since only the wife was interviewed about these transfers, she might not have known about all transfers from her

¹² This paper uses the terms 'transfers at marriage' and 'assets at marriage' instead of the term 'dowry', since there is a great deal of ambiguity in the literature regarding terminology. Goody (1973), in one of the classic anthropological treatises on dowry and bridewealth, defines dowry as a pre-mortem inheritance to the bride, and bridewealth as a transaction between the kin of the groom and the kin of the bride. The definition used by Botticini and Siow (2003) is consistent with Goody's. However, Bloch and Rao (2002) define dowry as a payment in cash and/or kind made directly from a bride's family to a groom's.



family to her husband's family.¹³ 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 with the previous asset categories, as well as cash (excluding transportation and food costs that are part of wedding expenses).¹⁴ The groom's family, on the other hand, received substantially more gifts than did the bride's family – 792 taka compared with 442 taka. Taking into account all gifts received at marriage, our data show a net asset transfer to the wife's side, although the most recent weddings exhibit a net transfer to the groom and, on average, familial gifts favoured the groom's side. These data are thus consistent with the shift to dowry reported in the qualitative study (Naved, 2000), although the shift occurs quite late in the 1980s, which might be attributed to underreporting.¹⁵

Various theories have been proposed for the existence of dowry versus brideprice systems (see Fafchamps and Quisumbing, 2008 for a review and Botticini and Siow, 2003). One such theory (Botticini and Siow, 2003) suggests that in virilocal (mostly agricultural) societies, parents provide dowries for daughters and bequests for sons because sons (who live in the same village as parents) have a comparative advantage in working with the family assets relative to their sisters. If daughters leave home to marry, it will be difficult for them to claim parental assets upon their parents' death. Botticini and Siow predict that, as labour markets develop, children will become less dependent on their family's assets for their livelihoods. As the demand for different types of occupations grows, parents will invest more in general rather than family-specific human capital. Instead of the dowry, parents will transfer wealth to both sons and daughters as human capital investments and bequests. While we see indications of this trend in other societies, such is not yet the case in rural Bangladesh, even if schooling attainment of girls is catching up. Even if dowries are considered as 'advance inheritance' for daughters, in no case are the transfers at marriage enough to equalise the asset holdings of husbands and wives, especially when inheritance received prior to marriage is included. This is consistent with the structure of marriage markets in Bangladesh, where decisions to marry are made mostly by the parents of the bride and groom. Transfers at marriage represent only one outcome of the marriage bargaining between both families

¹³ 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, whereas men typically receive sizeable transfers upon the death of a parent. More recent work on dowries, however, involves interviews of both spouses (Ambrus *et al.*, 2007).

¹⁴ This is similar to the approach followed by Bloch and Rao (2002).

¹⁵ This phenomenon is also largely reported in India (see Bloch and Rao, 2002; Rao, 1993; and Rao, 1998 for references). Ambrus *et al.* (2007) develop a model in which dowries increase in response to new legislation governing marital separation in Bangladesh; in this model, the rise in dowries owes partly to the increase in the ex ante compensation to husbands for the traditional Islamic brideprice, which is payable upon divorce.



and the two families may negotiate the bargain based not only on transfers at marriage, but also on the expectation of inheritance and bequests.

To summarise: Not counting inherited assets, husbands bring about four times the value of assets that wives bring to marriage. Gifts at marriage are primarily to the bride, who receives one and a half times the value of what the groom receives. Taking into account all gifts received at marriage, the wife's side receives a net transfer of assets, although the most recent weddings exhibit a net transfer to the groom and, on average, the groom's family receives more gifts than the bride's.

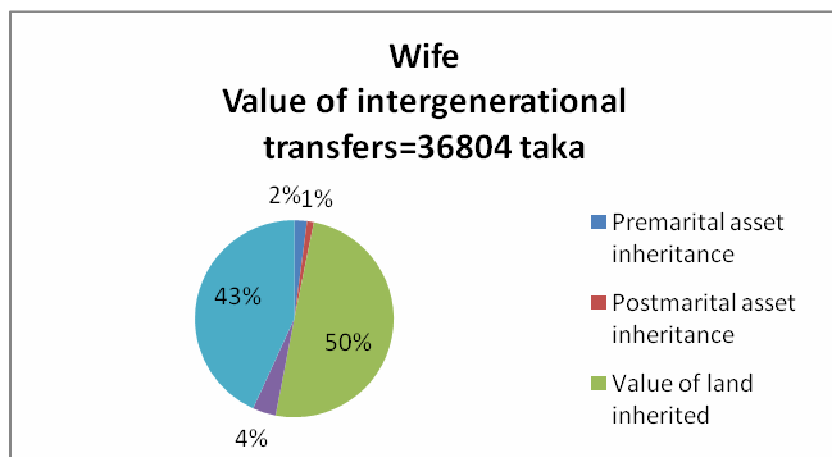
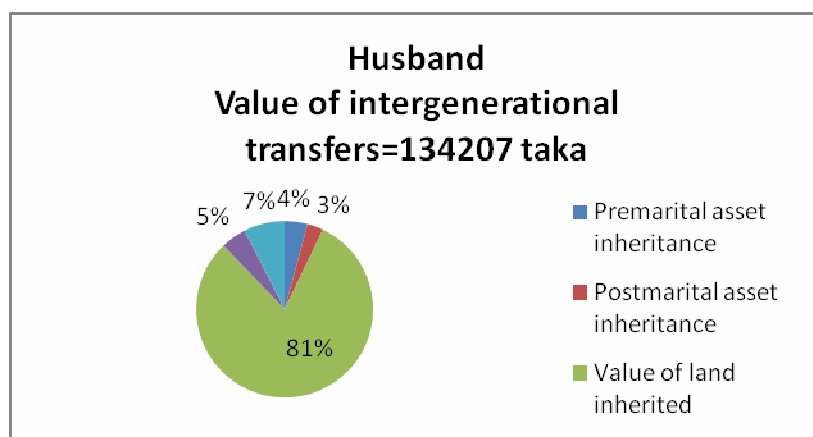
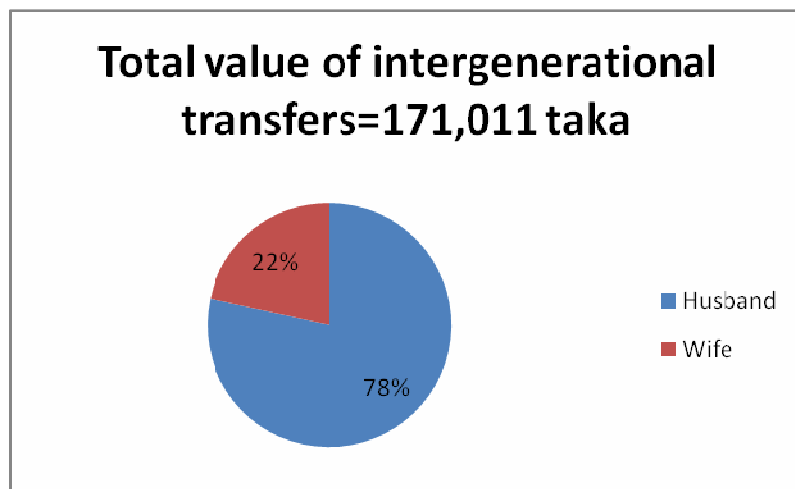
To better gauge the relative importance of inheritance and inter-vivos transfers such as dowry in husbands' and wives' wealth portfolios, one can compare the share of total intergenerationally transferred wealth contributed by husbands and wives, and the share of the intergenerationally transferred wealth of each spouse that originates from different forms of intergenerational transfers.

Figure 1 presents the distribution of intergenerational transfers first, for the average household, across husbands and wives, and then separately for husbands and wives, across five different types of transfers: premarital asset inheritance, post-marital asset inheritance, inherited land, assets at marriage and gifts at marriage. Husbands account for 78 percent of an average of 171,011 taka of intergenerationally transferred wealth, whereas wives account for only 22 percent. However, the relative importance of different types of transfers differs across spouses. Land clearly dominates the portfolio of transfers received by husbands, accounting for 81 percent of the value of transfers. Gifts at marriage are a distant 7 percent, followed by assets at marriage (5 percent), premarital asset inheritance (4 percent) and post-marital asset inheritance (3 percent).

While land is also the biggest item in wives' portfolios, accounting for 50 percent of the value of intergenerational transfers, gifts at marriage are a close second, at 43 percent. Other asset transfer categories are minimal compared with these two categories, which comprise more than 90 percent of transfers received by wives. Assets at marriage account for only 4 percent of total intergenerational transfers, followed by premarital and post-marital inheritance, at 2 and 1 percent, respectively. Despite the importance of inherited land in the wife's intergenerationally transferred wealth, given the practice of village exogamy, it is debatable whether the wife obtains actual control of the land she inherits. It can also be argued that wives may not always control assets that form part of the dowry, since husbands or in-laws may control them once they move into husbands' households. Nevertheless, the importance of gifts at marriage in the wife's portfolio of intergenerationally transferred assets emphasises the point that a narrow focus on inheritance may lead to the neglect of other forms of intergenerational transfers.



Figure 1: Distribution of intergenerational transfers of husbands and wives, by type of transfer (intact couple sample, n=794 couples)



Note: All values in 2007 taka.



To summarise: The husband accounts for almost 80 percent of the household's portfolio of intergenerationally transferred assets, with inherited land comprising 80 percent of the value of the husband's intergenerationally transferred portfolio. Inherited land is also important for wives, accounting for 50 percent of their intergenerationally transmitted assets, but gifts at marriage are also significant, accounting for 43 percent. All in all, inherited land and gifts at marriage add up to 93 percent of wives' intergenerationally transmitted assets.

4.4 Asset inheritance and inequality

Table 7: Gini ratios of schooling, inherited land and assets, assets and transfers at marriage and per capita consumption, by spouse

	Husband	Wife	Household
Years of schooling	0.658	0.758	0.651
Inherited land	0.685	0.904	0.669
Inherited assets	0.870	0.928	0.841
Assets at marriage	0.839	0.803	0.771
Transfers or gifts at marriage	0.623	0.528	0.533
Owned land in 2007	0.688	0.940	0.604
Value of assets in 2007	0.609	0.673	0.527
Per capita consumption in 2007	n.c.	n.c.	0.251

Notes: n.c. Not computed at individual level.

Household land and assets includes land and assets of other household members.

To what extent do these types of intergenerational transfers contribute to inequality? There is substantial inequality in inherited assets across all households (Table 7). The Gini coefficient for household inherited assets is 0.841, whereas Gini ratios for husbands' and wives' inherited assets are higher. Gini ratios for inherited assets are higher than the Ginis for inherited land, currently owned land, assets and per capita consumption. Inequality in assets at marriage is second highest, with a Gini ratio of 0.771 for all assets at marriage. Interestingly, inequality of the individual components of both inherited assets and assets at marriage is higher than inequality in the inherited assets of the household as a whole. The Gini ratio of a husband's inherited assets is 0.870, but that of the wife is 0.928, whereas the Gini ratio of assets at marriage is 0.839 for husbands and 0.803 for wives. The Gini ratio of inherited land is lower for both the household (0.669) and for husbands (0.685), but extremely high for wives (0.904), owing to the very small number of women who inherit land. Gifts at marriage are relatively more equal, probably because amounts are smaller and there are ritual exchanges among both families.

It seems, however, that inequality in asset holdings diminishes over time as families accumulate assets on their own. In fact, we find that, despite high inequality in inherited assets, the Gini coefficient for household current assets is much lower, at 0.527. The Gini coefficient on owned land in 2007 is 0.604, lower than that on inherited land. Moreover, the Gini coefficient of per capita consumption is quite low, at 0.251. This suggests that initial



asset inequality may be mitigated by formal and informal transfer mechanisms, labour- rather than asset-related income and public redistribution policies.

To summarise: The distribution of inherited assets is very unequal across households, even more unequal than the distribution of inherited land. However, inequality in current assets is lower, and inequality in current consumption is quite low. This suggests that initial asset inequality may be mitigated by households' accumulation of assets over time, formal and informal transfer mechanisms, labour- rather than asset-related income and public redistribution policies.

5 Determinants of intergenerational transfers and assets at marriage

To explore further the determinants of different types of intergenerational transfers, we estimate tobit regressions of years of schooling, inherited land area, inherited assets, assets at marriage and gifts at marriage. We estimate an equation of the form:

$$T_{ij}^* = \beta_0 + \beta_1 X_{cij} + \beta_2 X_{fij} + \beta_3 X_{mij} + \varepsilon_{ij}$$

where T_{ij}^* is a vector of intergenerational transfers $T_{ij}^* = [E_{ij}^*, L_{ij}^*, I_{ij}^*, A_{ij}^*, G_{ij}^*]$ and $E_{ij}^*, L_{ij}^*, I_{ij}^*, A_{ij}^*, G_{ij}^*$ are levels of schooling, area of inherited land, the value of inherited assets, the value of assets at marriage and the value of gifts received at marriage by spouse i (husband or wife) in household j . Regression parameters β_k and γ_m are vectors of coefficients for each type of transfer; X_c is a vector of individual-specific characteristics such as birth year, number of brothers, number of sisters and a dummy for being the child of the father's first marriage; X_f and X_m are vectors of exogenous human and physical wealth of each spouse's father and mother at the time of marriage, respectively; and ε_{ij} is the error term in each equation. We also include controls for whether the father or mother of each spouse is alive and dummies for unobserved locational characteristics.

Our data permit us to estimate this equation at several levels of disaggregation. First, we estimate this series of equations for the pooled sample of husbands and wives. Then, we estimate the equations separately for the husband and wife, as well as explore differences in the assets that husbands and wives within a family bring to their marriage, by estimating the equations in difference form¹⁶.

Table 8 presents the results for the pooled sample of intact couples. As expected, wives are disadvantaged in three out of the five forms of intergenerational transfers considered: schooling, land and asset inheritance. There appears to be no obvious gender disadvantage in terms of assets transferred at the time of marriage, and gifts at marriage are predominantly

¹⁶ The dependent and explanatory variables in the regressions are expressed as differences between the husband's and the wife's values, for each household.



to brides. In all the land and assets regressions, whether or not the parents are still living is negatively correlated with the size of land and value of assets inherited, owing to the practice of estate division upon the death of the parent.

Reflecting increased availability of schooling, later-born children complete more years of schooling. Schooling attainment is also positively correlated with schooling of both parents. Wealth effects appear to be important, as children of fathers with more land complete more years of schooling. One of the most important determinants of inherited land areas is the land owned by the parents themselves, with both father's and mother's land contributing significantly to children's land inheritance. In contrast with the positive trend on birth year for schooling, later-born children inherit smaller areas of land, possibly owing to population pressure and increasing land scarcity.¹⁷ Interestingly, spouses with more brothers inherit more land – but this could also reflect the possibility that parents with more land have more children.

Similar to the determinants of land inheritance, landholdings of the father and mother have positive impacts on the value of assets inherited. However, very few economic variables affect the value of assets transferred at marriage, with family composition playing a more important role. Daughters of a father's first marriage appear to have some advantage, although this coefficient is only weakly significant (at 10 percent). The number of brothers exerts a weak negative effect on the value of assets transferred at marriage, possibly owing to a sibling competition effect. Gifts at marriage seem to have increased over time, and are also positively correlated to father's schooling and father's land. Interestingly, spouses whose mothers are alive at the time of marriage receive more gifts. Also, gifts are the form of transfer that exhibits the least amount of censoring, suggesting that gifts, which are smaller in value and less lumpy, are typically received by most couples at the time of marriage. Location effects are significant in all of these regressions; we discuss these in greater detail shortly.

¹⁷ To examine whether determinants of intergenerational transfers have changed over time, a specification was estimated wherein birth year (as a proxy for time trends) was interacted with the other determinants. Interactions of the other variables with birth year were jointly significant only for land inheritance. However, these results should be taken with caution, because birth year tends to be highly correlated with the determinants themselves, particularly the size of the father's and mother's own land, as well as the dummies for whether or not each parent is still alive.

Table 8: Determinants of intergenerational transfers received by husbands and wives, intact couple sample, tobit regressions

	Years of schooling		In (land area +1)		In (assets+1)		In (assets at marriage +1)		In (gifts at marriage +1)	
	Coeff	t	Coeff	t	Coeff	t	Coeff	t	Coeff	t
Whether female	-5.105	-5.95	-1.941	-7.05	-3.177	-2.69	0.738	1.37	0.967	4.84
Birth year	0.040	1.95	-0.019	-2.84	-0.001	-0.04	0.022	1.60	0.020	4.02
Whether child of father's first marriage	-0.665	-1.16	-0.282	-1.48	0.382	0.46	-0.649	-1.56	0.111	0.73
Whether daughter in father's first marriage	1.323	1.41	0.187	0.60	0.415	0.31	1.033	1.72	-0.105	-0.47
Number of brothers	0.028	0.24	0.185	4.52	-0.068	-0.39	-0.132	-1.66	0.022	0.74
Number of sisters	0.114	1.01	0.042	1.04	0.187	1.05	-0.076	-0.99	0.046	1.63
Father has primary education	3.087	6.09	-0.477	-2.45	-0.009	-0.01	0.495	1.38	0.361	2.70
Father has secondary education	1.213	1.84	0.406	1.51	1.374	1.20	0.486	0.99	0.251	1.37
Mother has primary education	4.281	5.85	-0.228	-0.70	1.960	1.41	0.227	0.41	0.204	0.98
Mother has secondary education	-0.568	-0.37	-0.399	-0.49	0.650	0.20	0.726	0.61	0.404	0.89
Land of father	0.009	4.52	0.014	20.72	0.020	7.05	0.000	0.20	0.002	4.20
Land of mother	0.010	1.59	0.010	4.34	0.017	1.92	-0.002	-0.45	0.000	0.08
Whether father alive	1.314	2.81	-2.077	-11.30	12.083	-11.75	-0.599	-1.90	0.012	0.11
Whether mother alive	0.481	1.04	-0.721	-4.67	-2.237	-3.35	-0.250	-0.81	0.288	2.52
<i>Site dummies</i>										
Saturia	-3.126	-6.20	0.496	2.82	6.471	8.22	1.830	5.51	1.147	9.23
Jessore	-1.724	-3.56	0.581	3.29	2.296	2.85	-1.573	-4.63	0.218	1.75
Constant	-77.611	-1.97	39.379	2.95	-1.349	-0.02	-38.192	-1.46	32.484	-3.33
Number of obs	1542		1558		1558		1558		1558	
LR chi2(16)	360.19		1113.80		510.78		174.7		290.67	
Prob > chi2	0.00		0.00		0.00		0		0	
Pseudo R2	0.07		0.21		0.11		0.0236		0.0437	
Left-censored observations	948		820		1093		505		46	
Uncensored observations	594		738		465		1053		1512	

Note: t-values in bold are significant at 10% or better

Table 9. Determinants of intergenerational transfers received by husbands, tobit regressions

	Years of schooling		ln (land area+1)		ln (assets+1)		ln (assets at marriage +1)		ln (gifts at marriage +1)	
	Coeff	t	Coeff	t	Coeff	t	Coeff	t	Coeff	t
Birth year	0.003	0.09	-0.021	-2.96	0.051	1.64	0.030	1.11	0.038	4.56
Whether child of father's first marriage	-0.593	-0.95	-0.317	-2.04	0.405	0.58	-0.447	-0.73	0.132	0.70
Number of brothers	0.067	0.38	0.166	3.66	-0.512	-2.46	-0.401	-2.30	-0.044	-0.84
Number of sisters	-0.004	-0.02	-0.038	-0.87	0.235	1.17	-0.218	-1.28	0.059	1.13
Father has primary education	3.301	4.52	-0.346	-1.74	-0.169	-0.18	0.636	0.84	0.463	2.01
Father has secondary education	0.720	0.69	0.608	2.11	2.091	1.60	-0.374	-0.34	0.211	0.62
Mother has primary education	5.223	4.00	0.333	0.89	2.313	1.35	-0.606	-0.42	0.655	1.50
Mother has secondary education	-0.779	-0.24	-0.704	-0.72	2.432	0.60	-0.110	-0.03	-0.280	-0.25
Land of father	0.009	3.67	0.012	18.77	0.022	7.95	0.000	-0.01	0.003	3.37
Land of mother	0.004	0.39	0.006	2.33	0.013	1.26	-0.010	-0.91	0.004	1.12
Whether father alive	0.563	0.76	-2.167	-10.40	-16.332	-8.59	-1.946	-2.58	0.038	0.17
Whether mother alive	0.649	1.00	-0.614	-3.79	-1.823	-2.47	-1.118	-1.75	0.455	2.34
<i>Site dummies</i>										
Saturia	-2.512	-3.52	0.423	2.32	5.470	6.76	3.623	5.19	1.242	5.75
Jessore	-1.679	-2.36	0.120	0.65	-2.842	-3.22	-2.037	-2.77	0.030	0.14
Constant	-5.52169	-0.1	42.11066	3.11	-100.029	-1.65	-54.131	-1.03	-67.123	-4.15
Number of obs	766		772		772		772		772	
LR chi2(16)	116.08		586.53		389.13		107.21		108.30	
Prob > chi2	0.00		0.00		0.00		0.00		0.00	
Pseudo R2	0.04		0.19		0.13		0.03		0.03	
Left-censored observations	415		239		458		362		39	
Uncensored observations	351		533		314		410		733	

Note: t-values in bold are significant at 10% or better.

Table 10. Determinants of intergenerational transfers received by wives, tobit regressions

	Years of schooling		In (land area+1)		In (assets+1)		In (assets at marriage +1)		In (gifts at marriage +1)	
	Coeff	t	Coeff	t	Coeff	t	Coeff	t	Coeff	t
Birth year	0.096	3.30	-0.024	-1.44	-0.102	-1.75	0.026	2.07	-0.001	-0.12
Whether child of father's first marriage	0.380	0.57	-0.152	-0.42	1.008	0.79	0.076	0.26	0.041	0.34
Number of brothers	0.047	0.30	0.273	3.13	0.492	1.67	0.041	0.60	0.054	1.90
Number of sisters	0.265	1.86	0.187	2.14	-0.065	-0.21	0.016	0.25	0.033	1.19
Father has primary education	2.610	3.88	-0.797	-1.67	1.062	0.68	0.355	1.09	0.377	2.77
Father has secondary education	1.615	2.03	0.195	0.31	-0.902	-0.44	0.817	1.97	0.188	1.07
Mother has primary education	3.428	4.21	-1.295	-1.76	2.700	1.17	0.112	0.25	0.025	0.14
Mother has secondary education	-0.739	-0.47	0.404	0.24	-3.200	-0.56	0.705	0.80	0.733	1.97
Land of father	0.008	2.05	0.023	11.02	0.005	0.65	0.001	0.42	0.002	2.85
Land of mother	0.016	2.05	0.016	3.61	0.017	1.25	0.003	0.66	-0.003	-1.57
Whether father alive	1.579	2.78	-2.326	-6.02	-10.709	-7.06	-0.057	-0.22	0.077	0.71
Whether mother alive	0.417	0.65	-0.868	-2.47	-2.310	-1.90	0.430	1.53	0.140	1.19
<i>Site dummies</i>										
Saturia	-3.950	-5.71	0.587	1.40	10.665	5.98	0.606	2.03	1.102	8.79
Jessore	-1.901	-3.01	1.463	3.52	12.163	6.76	-1.404	-4.68	0.443	3.54
Constant	-192.804	-3.38	44.76889	1.37	185.843	1.63	-47.552	-1.91	9.111	0.87
Number of obs	776		786		786		786		786	
LR chi2(16)	218.56		257.05		170.83		80.69		119.75	
Prob > chi2	0.00		0.00		0.00		0.00		0.00	
Pseudo R2	0.10		0.15		0.10		0.02		0.04	
Left-censored observations	533		581		635		143		7	
Uncensored observations	243		205		151		643		779	

Note: t-values in bold are significant at 10% or better.



Because it is possible that the same factors affect transfers to husbands and wives differently, we estimate the determinants of transfers separately to husbands and wives in Tables 9 and 10, respectively. Similar to the aggregate results, years of schooling of husbands increase with father's primary education, mother's primary education and father's land. In contrast with the husband regressions, we see a positive trend in schooling attainment for later-born wives, suggesting that the positive trend in birth year for the pooled regressions is accounted for by increased schooling of women. The wife's number of sisters also has a weak positive effect on years of schooling, suggesting that sisters do not compete for schooling resources, as suggested in other literature on sibling rivalry (Garg and Morduch, 1998; Morduch, 2000). Similar to the husband regressions, father's and mother's schooling contribute to increased wife's schooling, while both land of father and mother also contribute to increased schooling attainment of wives. Finally, whether the father is alive is an important factor contributing to higher schooling attainment of wives – but not of husbands. Perhaps having a father who supports the family actively is more crucial to keeping girls in school than boys. Compared with Mymensingh, husbands and wives in Saturia and Jessore complete fewer years of schooling.

Individual and family characteristics have similar influences on land inherited by husbands and wives (Tables 9 and 10, respectively), although the husband regressions have more significant coefficients. Not surprisingly, land of the father and mother significantly increases areas inherited by both husbands and wives. Husbands and wives whose fathers have achieved primary schooling receive less land compared with those with no schooling (possibly because those fathers are more specialised in agricultural production), although husbands whose fathers have secondary schooling inherit more land. (Wives whose mothers have some primary schooling also inherit less land.) Later-born husbands receive less land, but birth year does not influence the amount of land inherited by wives (who account for a small proportion of land inheritance anyway). Husbands who are offspring of their father's first marriage inherit smaller areas of land, possibly because older fathers (in later marriages) would have acquired more land over the life cycle. There is no corresponding impact on wives. The number of brothers has a positive impact on areas of land inherited by both husbands and wives, and the number of sisters also has a positive influence on the area of land inherited by wives, but this may be correlated with fertility and land acquisition decisions of their parents. Interestingly, land areas inherited by husbands are larger in Saturia compared with Mymensingh, but land areas inherited by wives are larger in Jessore.

Asset inheritance of husbands is more strongly affected than that of wives by family background characteristics. Husbands' asset inheritance is positively correlated with father's land, but no similar effect exists for wives. However, family structure has asymmetric influences on asset inheritance of husbands and wives. The number of brothers negatively influences the value of assets inherited by husbands, but positively influences the value of assets inherited by wives. Relative to Mymensingh, husbands in Saturia inherit more assets,



whereas those in Jessore inherit less. However, reflecting the conservatism of Mymensingh, wives in both Saturia and Jessore inherit more assets than those in Mymensingh.

Similar to the results for inherited assets, husbands' assets at marriage decrease with the number of brothers, indicating that there is some competition between brothers for parental assets (though not land). Evidence for competition among brothers in asset inheritance can also be found in Ethiopia (Fafchamps and Quisumbing, 2005). In contrast, the number of brothers and sisters does not affect the assets that wives bring to marriage. While family structure does not influence gifts that husbands receive at marriage, having more brothers increases gifts to the wife, consistent with expectations of social support from brothers. Having a father with at least primary schooling, and a father with more land, increases gifts received by both husbands and wives. And having a living mother increases gifts to husbands, but not to wives. Relative to Mymensingh, both husbands and wives receive more assets and gifts at marriage in Saturia, and fewer assets at marriage in Jessore, whereas wives receive more gifts at marriage in both Saturia and Jessore.

Because most, if not all, marriages in rural Bangladesh are arranged by families, we expect that the relative positions of the bride's and groom's families affect the relative assets that each spouse brings to the marriage – whether at the time of marriage or upon inheritance (Quisumbing and Hallman, 2005). Appendix Table 1 shows how differences in individual and family background characteristics affect the difference between husband and wife assets. The most important driving factor in these regressions is the difference between land owned of the husband's relative to the wife's father. The greater the difference in land owned by the husband's father, the greater the advantage of the husband in terms of schooling, inherited land, inherited assets and assets at marriage. The only transfer difference that is negatively affected is gifts at marriage: the larger the land area of the groom's parents relative to the bride's, the larger the transfers to the bride. However, a husband whose father is better educated relative to the bride's father tends to receive more gifts.

To summarise: Even when individual and family background characteristics are controlled for, being female imparts a big disadvantage in almost all forms of inheritance, with the exception being gifts at marriage. Parental wealth – particularly father's land and schooling – increases all forms of intergenerational transfers to children. However, family structure has asymmetric effects on husbands and wives, depending on the type of transfer. While having more brothers does not diminish land area inherited by husbands, it decreases inherited assets and assets brought to marriage by husbands. In contrast, having more brothers increases land inheritance, asset inheritance and marriage gifts received by sisters.

Table 11: Impact of education, inherited assets and intergenerational transfers on current landholdings, current assets and per capita consumption

	Specification with inherited assets						Specification with all intergenerational transfers							
	In (owned land in 2007 +1)			In (assets in 2007 +1)			In (owned land in 2007 +1)			In (assets in 2007 +1)				
	Coeff	t		Coeff	t		Coeff	t		Coeff	t			
<i>Schooling</i>														
Husband's years of schooling	0.073	5.31		0.056	5.43		0.074	5.18		0.052	5.05		0.024	4.66
Wife's years of schooling	0.015	0.90		0.055	3.02		0.010	0.56		0.048	2.65		0.011	1.40
<i>Inherited land and assets</i>														
In (husband's inherited land)	0.187	5.62		0.042	1.34									
In (wife's inherited land)	0.034	1.10		-0.005	-0.16									
In (husband's inherited assets)	0.059	4.15		0.034	3.18									
In (wife's inherited assets)	-0.001	-0.07		0.011	0.72									
<i>Intergenerational transfers (inheritance and transfers at marriage)</i>														
In (husband's inherited land/land transferred at marriage)							0.230	7.81		0.058	2.18		0.018	1.89
In (wife's inherited land/land transferred at marriage)							0.024	0.80		-0.016	-0.61		-0.003	0.32
In (husband's inherited assets/transfers at marriage)							0.078	2.04		0.049	1.73		0.017	2.02
In (wife's inherited assets/transfers at marriage)							0.010	0.22		0.091	2.05		0.006	0.38
<i>Sibling support networks</i>														
Husband's living brothers	0.007	0.19		0.066	2.30		-0.010	-0.25		0.052	1.80		0.000	0.02
Husband's living sisters	0.025	0.76		-0.063	-1.90		0.028	0.83		-0.062	-1.87		-0.003	0.25
Wife's living brothers	0.022	0.73		0.029	0.87		0.018	0.55		0.027	0.81		0.027	2.77
Wife's living sisters	0.002	0.08		-0.030	-0.99		0.003	0.10		-0.028	-0.91		-0.005	0.44

Notes: t-values in bold are significant at 10% or better.

Total intergenerational transfers are the sum of inherited assets and transfers received at marriage.

For full results, see Appendix Tables 2 and 3.



6 Impact of inheritance on current assets, current landholdings, per capita consumption and poverty transition status

We take advantage of our longitudinal dataset to examine the consequences of these inheritance patterns on the accumulation of land and assets over the long term, current per capita consumption and poverty transition status over a ten-year period.

6.1 Impact of intergenerational transfers on current landholdings, assets and per capita consumption

Table 11 presents selected coefficient estimates of the impact of intergenerational transfers on landholdings, assets and per capita consumption in 2007. The full estimation results are presented in Appendix Tables 2 and 3, and include controls for age of the husband and wife in 1996, years of schooling of husband and wife, household size and share of the household in various demographic categories, intergenerational transfers of land and assets, sibling support networks (living brothers and sisters of the husband and wife) and shocks experienced between 1996 and 2006. Details regarding the construction of the consumption variable and the shocks variable are found in Quisumbing (2007).

We explore two specifications: (1) land and assets are limited to those obtained through inheritance; and (2) land and assets include land and assets transferred at marriage. The first specification uses a restrictive definition of intergenerational transfers that focuses only on inheritance, whereas the second includes inter-vivos transfers and therefore includes not only inheritance but also wealth transferred throughout the parents' lifetimes. The second specification is justified especially in the case of wives, for whom gifts at marriage account for a significant portion of intergenerationally transferred assets. In Table 11, these are denoted as 'inherited assets' and 'all intergenerational transfers', respectively. Table 11 also reports regression coefficients from the full regressions in Appendix Tables 2 and 3.

Husband's years of schooling – but not wife's education – has a positive and significant effect on the size of owned land in 2007. In the specification with inherited assets (left hand side of Table 11), husbands' inherited land and inherited assets have positive impacts on current landholdings. The coefficients on total intergenerational transfers in the current landholdings regression are larger than those on inherited assets alone (right side of Table 11), indicating that transfers at marriage do play a significant role in determining future landholdings of families. Both husband's and wife's schooling are important determinants of current asset holdings, regardless of the specification of intergenerational transfers. However, only the coefficient of husbands' inherited assets is positive and significant in the current asset equation, whereas, when transfers are defined to include transfers at marriage (right side of Table 11), husbands' land, husbands' assets and wives' assets are significant



determinants of current assets. Indeed, the coefficient on wives' assets is twice that on husbands' assets, and is significant at 5 percent, whereas that on husbands' assets is significant only at 10 percent. This suggests that considering only inherited assets may underestimate the contribution of women's assets, most of which are received at marriage, to long-term asset accumulation. It is also noteworthy that, despite the importance of land in wives' portfolios of intergenerationally transmitted wealth, wives' land has no impact on current owned land, current assets or current consumption. This may be related to the possibility that most land inherited by women is in their natal village, and therefore not under their direct control.

Sibling support networks are also important in determining current asset holdings. Reflecting patterns of sibling support, husbands' brothers increase current asset holdings, whereas the number of husbands' sisters – whom the husband is socially obligated to support – reduce them.

Finally, husbands', but not wives', schooling has a positive impact on per capita consumption in 2007. Inherited assets of the husband have a positive effect, but the wife's inherited assets have a weak negative effect, in the specification limited only to inherited assets. In the specification where all intergenerational transfers are considered, both the husband's land and assets have a positive impact on consumption, but the wife's land and assets are insignificant. A striking result is the importance of wives' living brothers in assuring families' living standards: an additional living brother increases families' per capita consumption by 3 percent.

To summarise: Husbands' years of schooling have positive and significant impacts on current land ownership, current assets and per capita consumption, whereas wives' schooling has a positive and significant impact only on current asset holdings. Land inherited by the husband is positively associated only with current landholdings but, when the definition of land acquired by the husband includes that acquired through inter-vivos transfers, the husband's land increases size of owned land, the value of non-land assets and per capita consumption in 2007. Intergenerationally transferred assets held by husbands, regardless of definition, increase current landholdings, current asset holdings and per capita consumption, but wives' intergenerationally transferred assets matter only when gifts at marriage are taken into account. Sibling support networks also matter, with the number of husbands' living brothers contributing positively to asset holdings and the number of wives' living brothers associated with higher per capita consumption.

Table 12: Impact of education, inherited assets and intergenerational transfers on poverty transition categories

	Specification with inherited assets				Specification with all intergenerational transfers							
	Probability Chronically poor		Never poor		Probability Chronically poor		Never poor					
	dy/dx	z	dy/dx	z	dy/dx	z	dy/dx	z				
<i>Schooling</i>												
Husband's years of schooling	-0.009	-2.74	0.036	5.79	-0.027	-4.82	-0.009	-2.62	0.035	5.13	-0.026	-4.14
Wife's years of schooling	-0.001	-0.11	0.022	2.14	-0.021	-2.18	-0.001	-0.16	0.021	2.06	-0.020	-2.05
<i>Inherited land and assets</i>												
In (husband's inherited land)	-0.006	-1.10	0.025	1.68	-0.019	-1.29						
In (wife's inherited land)	-0.003	-0.36	0.006	0.45	-0.004	-0.29						
In (husband's inherited assets)	0.000	-0.22	0.001	0.11	0.000	-0.04						
In (wife's inherited assets)	0.002	0.83	0.005	-0.70	0.003	0.43						
<i>Intergenerational transfers (inheritance and transfers at marriage)</i>												
In (husband's inherited land/land transferred at marriage)							-0.005	-1.25	0.023	1.57	-0.017	-1.24
In (wife's inherited land/land transferred at marriage)							-0.001	.	0.000	0.01	0.001	0.07
In (husband's inherited assets/transfers at marriage)							-0.008	-1.35	0.008	0.52	0.000	-0.01
In (wife's inherited assets/transfers at marriage)							0.010	0.96	0.015	0.57	-0.025	-0.95
<i>Sibling support networks</i>												
Husband's living brothers	0.000	0.05	0.012	-0.77	0.012	0.82	0.000	-0.04	-0.013	-0.83	0.013	0.93
Husband's living sisters	-0.001	-0.14	0.014	0.85	-0.013	-0.84	-0.001	-0.10	0.014	0.82	-0.013	-0.83
Wife's living brothers	-0.010	-2.09	0.021	1.69	-0.011	-0.89	-0.009	-2.01	0.021	1.68	-0.012	-0.92
Wife's living sisters	0.006	0.81	0.020	-1.54	0.013	0.93	0.006	0.77	-0.018	-1.42	0.012	0.84

Notes: t-values in bold are significant at 10% or better. Total intergenerational transfers are the sum of inherited assets and transfers received at marriage.

For full results, see Appendix Tables 4 and 5.



6.2 Impact of intergenerational transfers on poverty transitions

Table 12 presents selected marginal effects of different types of intergenerational transfers on the probability of belonging to one of four poverty transition categories: (1) chronically poor; (2) falling into poverty; (3) moving out of poverty; and (4) never poor. These probabilities are a function of household characteristics in the baseline survey, inherited land and assets, sibling support networks, shocks experienced by the household between the baseline survey and 2006-07 and unobserved community characteristics (proxied by site dummies), and were estimated using multinomial logit regressions. Full estimates are presented in Appendix Tables 4 and 5. Appendix Table 4 presents results from a specification where land and assets are restricted to inherited assets, whereas Appendix Table 5 uses a more comprehensive definition that includes transfers at marriage. Marginal effects are presented – that is, the impact of a one unit change in the independent variable on the probability of being in one of the four states. Although coefficient estimates were obtained for all four categories, the estimates for the ‘falling into poverty’ category were unreliable because of the very few observations in that category, and are not reported.

Husbands’ years of schooling exert a strong negative effect on the probability of being chronically poor in both specifications of intergenerational transfers, but neither the wife’s nor the husband’s intergenerationally transferred assets have a significant impact on keeping the household out of chronic poverty, regardless of specification. Instead, the number of living brothers that the wife has reduces the probability of being chronically poor – suggesting that the trade-off between inheritance and sibling support has some justification, even if it leaves brothers with more bargaining power than their sisters.

Both husbands’ and wives’ years of schooling have a positive and significant impact on the probability of never being poor, whereas land inherited by the husband has a weak positive impact on the probability of never being poor, in the specification restricted to inherited assets. In both restricted and expanded definitions of intergenerational transfers, the number of wives’ living brothers has a weak positive impact on the probability of never being poor. Similar to earlier results on poverty transitions in Quisumbing (2007), we do less well in predicting movements in or out of poverty than chronic conditions. The negative impact of husbands’ and wives’ years of schooling on the probability of moving out of poverty is likely to reflect the negative impact of those variables on having been in poverty in the first place.

How important, therefore, are physical compared with human forms of intergenerational transfers in preventing chronic poverty? These results suggest that human capital is more important – higher levels of schooling of the husband significantly reduce the probability of being chronically poor, and higher levels of schooling of both husband and wife increase the probability of never being poor –whereas inherited land and assets are, with one exception, insignificant influences. The single exception is land inherited by the husband, which has a



weak positive influence on the probability of never being poor, in the specification with a restricted definition of intergenerational transfers. While previous analysis of these data shows that land, assets and livestock owned as of 1996-97 certainly are protective against chronic poverty (Quisumbing, 2007), inherited land and assets may not *by themselves* protect households from falling into chronic poverty. It may be the combination of intergenerationally transferred human capital, working together with intergenerationally transferred land and assets, which facilitates the accumulation of land and assets over the life cycle, protecting the household from chronic poverty.

To summarise: Husbands', but not wives', schooling is associated with lower probabilities of being chronically poor and higher probabilities of being non-poor. With the exception of husbands' inherited land, intergenerationally transferred land and assets by themselves do not prevent households from being chronically poor. The wife's social networks – the number of her living brothers – are positively associated with never being poor and negatively associated with chronic poverty.

7 Concluding remarks and areas for further work

This preliminary exploration into the patterns and consequences of intergenerational transfers in Bangladesh has revealed both that intergenerational transfers are biased against women, and that intergenerational transfers play an important role in the intergenerational transmission of poverty. The analysis also suggests that, to understand the intergenerational transmission of poverty, one needs to look beyond inheritance as the only form of wealth that is transmitted across generations, since an exclusive focus on inheritance neglects the importance of schooling or investment in human capital, as well as inter-vivos transfers, such as transfers at the time of marriage.

These findings are interrelated. First, parental investment in children, whether through investment in schooling or transfers of land and assets, tends to be biased against girls. Even if transfers at marriage favour brides, they do not compensate for the asset gap in inherited assets and schooling. Second, sisters often give up their share of their inheritance for their brothers, in return for economic and social support. Thus, a very small share of the household's human and physical assets comes from wives – most of the household's assets originates from, and is controlled by, husbands. Third, regressions on current money-metric outcomes – current assets, current landholdings and per capita consumption – show that intergenerational transfers are important determinants of current outcomes. Most of the transfers that significantly affect monetary measures of wellbeing are male-held transfers, such as husbands' schooling, husbands' land and husbands' assets, although the totality of intergenerationally transferred assets to wives is also an important determinant of current assets. Taking these results at face value, it seems that intergenerational transfers received



by women do not play an important role in family welfare. Indeed, one of the most important safety nets against falling into chronic poverty is the number of brothers that the wife has.

These results need to be interpreted carefully in the Bangladeshi context. Women not only bring extremely low levels of schooling and assets to marriage, but also operate in an environment where they may not be able to realise economic or monetary returns to those transfers. Thus, it is not surprising to see low monetary returns to women's physical and human assets. In contrast, the existing analysis shows high returns to women's social networks – their network of brothers. Taken together, these findings imply that women are extremely dependent on male relatives – their husbands and their brothers. Other studies that examine non-monetary outcomes using the earlier dataset – such as health and educational attainment of children – show that resources controlled by women increase investments in child schooling (Quisumbing and Maluccio, 2003) and improve child health, particularly for girls (Hallman, 2003). In an environment where women are restricted from realising monetary or economic returns to intergenerationally transferred assets, women invest in non-monetary assets – their children – and also realise returns from non-monetary assets, such as their support network of brothers. Similarly, in an environment that is not conducive to women's realising returns to their physical and human capital, sisters are a drain on the household's resources rather than an asset – a sharp contrast with societies like the Philippines, where daughters are better educated and act as the family's insurers (Quisumbing *et al.*, 2004). An analysis of the intergenerational transmission of poverty would therefore do well to examine not only physical and financial assets transferred, but also intra-generational support networks.

The finding that schooling, but not inherited assets, is a significant deterrent against chronic poverty is worth noting. While inherited land and assets help build a household's asset base, which in itself is protective against chronic poverty, as the Bangladeshi economy modernises and non-farm enterprises become more important, investment in human capital will become even more crucial in helping households move out – and stay out – of poverty. Moreover, if modernisation of the economy is accompanied by relaxation of those labour market constraints that diminish returns to women's labour (as in rise of garment factories and female employment), we may see women's education become more important to money-metric measures of welfare and movements out of poverty.

Future work will need to explore the sensitivity of these results to sample attrition. Finally, the analysis also needs to be expanded to explore how intergenerational transfers affect non-monetary factors related to the poverty and wellbeing of future generations, such as investments in education, health and nutrition.



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Appendix

Appendix table 1: Husband-wife differences in intergenerational transfers

	Education		Land		Inherited assets		Assets at marriage		Gifts at marriage	
	Coeff	t	Coeff	t	Coeff	t	Coeff	t	Coeff	t
<i>Husband-wife differences in</i>										
Birth year	-0.018	-0.67	2939.732	1.64	383.682	1.63	180.267	0.57	1.734	0.01
Whether child of father's first marriage	-0.383	-1.82	-9934.472	-0.70	-2878.281	-1.55	5469.352	2.17	248.672	0.26
Number of brothers	-0.017	-0.32	-3878.614	-1.08	-694.586	-1.47	-577.796	-0.91	-106.910	-0.44
Number of sisters	-0.041	-0.78	-192.904	-0.05	553.630	1.19	-190.213	-0.30	128.483	0.54
Educational attainment of father	-0.008	-0.24	1141.145	0.51	-423.938	-1.45	-420.785	-1.06	312.612	2.08
Educational attainment of mother	0.044	0.59	-2492.974	-0.49	-419.180	-0.63	-199.840	-0.22	194.317	0.57
Father's owned land	0.003	2.99	830.121	11.57	45.118	4.79	26.177	2.05	-14.937	-3.09
Mother's owned land	-0.002	-0.60	3098.123	14.11	22.171	0.77	-15.196	-0.39	-0.390	-0.03
<i>Site dummies</i>										
Satulia	-0.191	-0.63	6253.524	0.30	2372.628	0.88	-4744.025	-1.30	-5155.198	-3.72
Jessore	-0.467	-1.53	-13781.810	-0.67	-7611.431	-2.80	-7399.774	-2.01	-4887.485	-3.50
Constant	1.346	4.01	63619.950	2.79	10497.060	3.50	9480.940	2.34	-1175.677	-0.76
Number of obs	695		700		700		700		700	
F(10, 723)	1.88		38.92		5.51		1.63		3.16	
Prob > F	0.04		0.00		0.00		0.09		0.00	
R-squared	0.03		0.36		0.07		0.02		0.04	
Adj R-squared	0.01		0.35		0.06		0.01		0.03	

Notes: t-statistics in bold are significant at 10% or better.

For the land regression, the dependent variable was defined as the difference in the value of inherited land because standard errors were not defined when land area was the dependent variable

Appendix table 2: Impact of schooling, inherited land and assets on current land and asset holdings and per capita consumption, 2007, OLS regressions with robust standard errors clustered on village

	ln (owned land in 2007 +1)		ln (assets in 2007 + 1)		ln per capita consumption, 2007	
	Coeff	t	Coeff	t	Coeff	t
Husband's age in 1996	-0.002	-0.24	0.001	0.11	-0.005	-1.16
Wife's age in 1996	-0.004	-0.33	-0.006	-0.57	0.007	1.47
Husband's years of schooling	0.073	5.31	0.056	5.43	0.025	4.95
Wife's years of schooling	0.015	0.90	0.055	3.02	0.012	1.57
<i>Demographics as of baseline round</i>						
Household size	0.123	6.02	0.071	2.92	0.004	0.68
Proportion males 0-4	0.002	0.29	-0.004	-0.88	-0.001	-0.41
Proportion females 0-4	-0.005	-1.04	-0.006	-1.04	0.000	-0.18
Proportion males 5-13	0.004	1.28	0.003	1.15	0.002	1.66
Proportion females 5-14	-0.002	-0.71	-0.007	-2.36	-0.001	-0.37
Proportion males 55 and over	0.008	0.81	-0.005	-0.58	-0.001	-0.23
Proportion females 55 and over	0.009	1.27	-0.002	-0.37	0.001	0.57
<i>Inherited land and assets</i>						
ln (husband's inherited land)	0.187	5.62	0.042	1.34	0.014	1.36
ln (wife's inherited land)	0.034	1.10	-0.005	-0.16	0.003	0.22
ln (husband's inherited assets)	0.059	4.15	0.034	3.18	0.009	2.50
ln (wife's inherited assets)	-0.001	-0.07	0.011	0.72	-0.009	-1.71
<i>Sibling support networks</i>						
Husband's living brothers	0.007	0.19	0.066	2.30	0.003	0.25
Husband's living sisters	0.025	0.76	-0.063	-1.90	-0.003	-0.31
Wife's living brothers	0.022	0.73	0.029	0.87	0.028	2.93
Wife's living sisters	0.002	0.08	-0.030	-0.99	-0.006	-0.57
<i>Shocks experienced between 1996 and 2006</i>						
Flood shocks (village)	-0.151	-0.63	0.052	0.20	0.107	1.21
Crop losses (village)	0.867	2.07	-0.158	-0.52	-0.155	-1.27
Livestock diseases (village)	0.148	0.28	-0.015	-0.05	-0.031	-0.24
Asset losses (village)	-0.020	-0.04	-0.524	-0.97	0.290	1.41
Legal and political shocks (village)	0.783	1.25	0.684	1.43	0.232	1.37
Death of main income earner	-0.432	-2.04	-0.589	-2.81	-0.095	-1.85
Death of other household member	0.515	1.67	0.457	1.85	-0.067	-0.96
Illness of income earner	-0.422	-3.03	-0.397	-1.97	-0.130	-2.39
Illness of other household member	0.023	0.21	-0.131	-1.30	0.019	0.54
Dowry and wedding expenses	0.130	1.28	0.091	1.09	0.070	2.18
Property division	-0.065	-0.31	-0.084	-0.26	0.231	2.36
<i>Site dummies</i>						
Saturia	-0.313	-1.16	0.506	3.02	-0.036	-0.70
Jessore	-0.486	-2.38	0.105	0.83	0.053	1.10
Constant	2.231	4.32	9.467	26.12	6.884	58.12
Number of obs	650		652		652	
F(32, 46)	55.05		35.89		29.38	
Prob > F	0.00		0.00		0.00	
R-squared	0.42		0.26		0.19	

Notes: Complete results.

t-values in bold are significant at 10% or better.

Appendix table 3: Impact of schooling and total intergenerational transfers on current land and asset holdings and per capita consumption, 2007, OLS regressions with robust standard errors clustered on village

	ln (owned land in 2007 + 1)		ln (assets in 2007 + 1)		ln per capita consumption, 2007	
	Coeff	t	Coeff	t	Coeff	t
Husband's age in 1996	0.001	0.06	0.003	0.40	-0.005	-1.09
Wife's age in 1996	-0.005	-0.40	-0.006	-0.53	0.006	1.46
Husband's years of schooling	0.074	5.18	0.052	5.05	0.024	4.66
Wife's years of schooling	0.010	0.56	0.048	2.65	0.011	1.40
<i>Demographics as of baseline round</i>						
Household size	0.134	6.24	0.073	2.96	0.003	0.50
Proportion males 0-4	0.000	0.08	-0.004	-0.97	-0.001	-0.46
Proportion females 0-4	-0.007	-1.44	-0.006	-1.20	-0.001	-0.36
Proportion males 5-13	0.003	0.79	0.002	0.79	0.001	1.51
Proportion females 5-14	-0.002	-0.67	-0.008	-2.47	-0.001	-0.35
Proportion males 55 and over	0.003	0.32	-0.007	-0.86	-0.001	-0.36
Proportion females 55 and over	0.011	1.68	-0.001	-0.12	0.002	0.72
<i>Intergenerational transfers (inheritance and transfers at marriage)</i>						
ln (husband's inherited land/land transferred at marriage)	0.230	7.81	0.058	2.18	0.018	1.89
ln (wife's inherited land/land transferred at marriage)	0.024	0.80	-0.016	-0.61	-0.003	-0.32
ln (husband's inherited assets/transfers at marriage)	0.078	2.04	0.049	1.73	0.017	2.02
ln (wife's inherited assets/transfers at marriage)	0.010	0.22	0.091	2.05	0.006	0.38
<i>Sibling support networks</i>						
Husband's living brothers	-0.010	-0.25	0.052	1.80	0.000	0.02
Husband's living sisters	0.028	0.83	-0.062	-1.87	-0.003	-0.25
Wife's living brothers	0.018	0.55	0.027	0.81	0.027	2.77
Wife's living sisters	0.003	0.10	-0.028	-0.91	-0.005	-0.44
<i>Shocks experienced between 1996 and 2006</i>						
Flood shocks (village)	-0.204	-0.84	0.036	0.15	0.095	1.06
Crop losses (village)	0.942	2.28	-0.055	-0.18	-0.125	-1.00
Livestock diseases (village)	0.155	0.30	0.024	0.08	-0.029	-0.22
Asset losses (village)	-0.107	-0.19	-0.634	-1.18	0.264	1.26
Legal and political shocks (village)	0.871	1.43	0.681	1.48	0.261	1.57
Death of main income earner	-0.391	-1.83	-0.561	-2.55	-0.101	-1.90
Death of other household member	0.490	1.45	0.450	1.86	-0.053	-0.73
Illness of income earner	-0.422	-3.13	-0.411	-2.12	-0.121	-2.29
Illness of other household member	0.028	0.26	-0.114	-1.15	0.018	0.54
Dowry and wedding expenses	0.090	0.84	0.050	0.58	0.060	1.86
Property division	-0.085	-0.46	-0.112	-0.32	0.223	2.44
<i>Site dummies</i>						
Saturia	-0.244	-0.93	0.467	2.93	-0.050	-0.98
Jessore	-0.532	-2.48	0.040	0.28	0.027	0.53
Constant	1.469	2.20	8.257	16.79	6.708	41.82
Number of obs	650		652		652	
F(32, 46)	35.92		20.47		23.04	
Prob > F	0.00		0.00		0.00	
R-squared	0.40		0.27		0.18	

Notes: Complete results. *t*-values in bold are significant at 10% or better. Total intergenerational transfers are the sum of inherited assets and transfers received at marriage.

Appendix table 4: Impact of education, land and inherited assets on poverty transition category

	Probability					
	Chronically poor		Never poor		Moving up	
	dy/dx	z	dy/dx	z	dy/dx	z
Husband's age in 1996	0.003	1.46	-0.006	-1.37	0.003	0.70
Wife's age in 1996	-0.001	-0.62	0.004	0.87	-0.003	-0.60
Husband's years of schooling	-0.009	-2.74	0.036	5.79	-0.027	-4.82
Wife's years of schooling	-0.001	-0.11	0.022	2.14	-0.021	-2.18
<i>Demographics as of baseline round</i>						
Household size	-0.011	-2.57	-0.006	-0.49	0.016	1.25
Proportion males 0-4	0.002	1.67	-0.012	-3.54	0.010	2.99
Proportion females 0-4	0.001	1.20	-0.010	-2.34	0.009	2.15
Proportion males 5-13	0.000	-0.37	-0.005	-2.67	0.005	2.83
Proportion females 5-14	0.001	1.08	-0.007	-3.57	0.006	3.22
Proportion males 55 and over	0.000	-0.18	0.004	1.13	-0.003	-0.86
Proportion females 55 and over	-0.001	-0.76	-0.006	-1.66	0.007	2.15
<i>Inherited land and assets</i>						
In (husband's inherited land)	-0.006	-1.10	0.025	1.68	-0.019	-1.29
In (wife's inherited land)	-0.003	-0.36	0.006	0.45	-0.004	-0.29
In (husband's inherited assets)	0.000	-0.22	0.001	0.11	0.000	-0.04
In (wife's inherited assets)	0.002	0.83	-0.005	-0.70	0.003	0.43
<i>Sibling support networks</i>						
Husband's living brothers	0.000	0.05	-0.012	-0.77	0.012	0.82
Husband's living sisters	-0.001	-0.14	0.014	0.85	-0.013	-0.84
Wife's living brothers	-0.010	-2.09	0.021	1.69	-0.011	-0.89
Wife's living sisters	0.006	0.81	-0.020	-1.54	0.013	0.93
<i>Shocks experienced between 1996 and 2006</i>						
Flood shocks (village)	-0.067	-1.27	-0.190	-1.70	0.258	2.16
Crop losses (village)	0.043	0.98	0.065	0.46	-0.108	-0.68
Livestock diseases (village)	0.076	1.45	-0.100	-0.67	0.025	0.16
Asset losses (village)	-0.046	-0.72	0.468	2.13	-0.422	-1.84
Legal and political shocks (village)	-0.074	-0.89	0.177	0.79	-0.103	-0.40
Death of main income earner	0.040	1.05	0.037	0.42	-0.077	-0.85
Death of other household member	0.003	0.04	0.026	0.19	-0.029	-0.26
Illness of income earner	0.068	1.48	-0.073	-1.54	0.005	0.10
Illness of other household member	-0.001	-0.04	0.106	2.32	-0.106	-2.36
Dowry and wedding expenses	0.001	0.07	-0.051	-1.05	0.050	0.98
Property division	-0.083	-6.51	-0.198	-1.58	0.282	2.23
<i>Site dummies</i>						
Saturia	0.004	0.15	0.217	2.93	-0.222	-2.90
Jessore	-0.063	-3.35	0.248	4.08	-0.184	-3.13
Predicted probability	0.06		0.35		0.59	
Actual probability	0.12		0.36		0.51	

Notes: Marginal effects from multinomial logit regressions.

z-values in bold indicate significance at 10% or better.

Although the category for falling into poverty was included in the estimation, marginal effects for this category were not computed since standard errors were unreliable owing to the very small number of households in this category.

Appendix table 5: Impact of education and intergenerational transfers of land and assets on poverty transition category

	Probability					
	Chronically poor		Never poor		Moving up	
	dy/dx	z	dy/dx	z	dy/dx	z
Husband's age in 1996	0.003	1.41	-0.006	-1.35	0.003	0.69
Wife's age in 1996	-0.001	-0.64	0.005	0.90	-0.003	-0.62
Husband's years of schooling	-0.009	-2.62	0.035	5.13	-0.026	-4.14
Wife's years of schooling	-0.001	-0.16	0.021	2.06	-0.020	-2.05
<i>Demographics as of baseline round</i>						
Household size	-0.010	-2.51	-0.008	-0.77	0.018	1.52
Proportion males 0-4	0.002	1.63	-0.012	-3.66	0.010	3.10
Proportion females 0-4	0.001	1.30	-0.010	-2.45	0.009	2.21
Proportion males 5-13	0.000	-0.40	-0.005	-2.70	0.005	2.86
Proportion females 5-14	0.001	1.03	-0.007	-3.65	0.006	3.23
Proportion males 55 and over	0.000	-0.11	0.004	1.12	-0.004	-0.88
Proportion females 55 and over	-0.001	-0.74	-0.006	-1.68	0.007	2.13
<i>Inherited land and assets</i>						
ln (husband's inherited land/land transferred at marriage)	-0.005	-1.25	0.023	1.57	-0.017	-1.24
ln (wife's inherited land/land transferred at marriage)	-0.001	.	0.000	0.01	0.001	0.07
ln (husband's inherited assets/transfers at marriage)	-0.008	-1.35	0.008	0.52	0.000	-0.01
ln (wife's inherited assets/transfers at marriage)	0.010	0.96	0.015	0.57	-0.025	-0.95
<i>Sibling support networks</i>						
Husband's living brothers	0.000	-0.04	-0.013	-0.83	0.013	0.93
Husband's living sisters	-0.001	-0.10	0.014	0.82	-0.013	-0.83
Wife's living brothers	-0.009	-2.01	0.021	1.68	-0.012	-0.92
Wife's living sisters	0.006	0.77	-0.018	-1.42	0.012	0.84
<i>Shocks experienced between 1996 and 2006</i>						
Flood shocks (village)	-0.069	-1.34	-0.193	-1.70	0.262	2.16
Crop losses (village)	0.049	1.07	0.091	0.64	-0.140	-0.87
Livestock diseases (village)	0.072	1.38	-0.086	-0.57	0.014	0.09
Asset losses (village)	-0.054	-0.81	0.453	2.03	-0.399	-1.71
Legal and political shocks (village)	-0.071	-0.87	0.177	0.78	-0.106	-0.41
Death of main income earner	0.040	1.01	0.031	0.35	-0.071	-0.77
Death of other household member	-0.014	-0.21	0.047	0.34	-0.034	-0.29
Illness of income earner	0.065	1.48	-0.065	-1.42	0.000	-0.01
Illness of other household member	0.000	-0.02	0.109	2.42	-0.109	-2.50
Dowry and wedding expenses	0.001	0.03	-0.057	-1.13	0.056	1.07
Property division	-0.082	-6.41	-0.201	-1.67	0.283	2.35
<i>Site dummies</i>						
Saturia	0.007	0.28	0.184	2.12	-0.191	-2.11
Jessore	-0.067	-3.35	0.226	3.30	-0.159	-2.36
Predicted probability	0.06		0.35		0.59	
Actual probability	0.12		0.36		0.51	

Notes: Marginal effects from multinomial logit regressions.

z-values in bold indicate significance at 10% or better.

Although the category for falling into poverty was included in the estimation, marginal effects for this category were not computed since standard errors were unreliable owing to the very small number of households in this category.



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