Marriage, Bequest, and Assortative Matching in Rural Ethiopia[*]

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Abstract

This paper examines the determinants of human and physical capital at marriage. Using detailed data from rural Ethiopia, we find that assets brought to marriage are distributed in a highly unequal manner. For first unions, assets brought to marriage are positively associated with parents' wealth, indicating that a bequest motive affects assets at marriage. Parental wealth affects the inheritance of neither groom nor bride. Sibling competition from brothers affects grooms' inheritance, but sisters have no effect. The marriage market is a major conduit for rural and gender inequality, although avenues do exist for couples to accumulate wealth over their life cycle.

1. Introduction

In agrarian societies marriage is an event of deep economic importance. First, it typically marks the onset not only of a new household but also of a new production unit, e.g., a family farm. Assets brought to marriage determine the start-up capital of this new enterprise. The success of the enterprise thus depends to a large extent on what happens in the 'marriage market', that is, on the arrangement reached by the bride and groom and their respective families regarding the devolution of assets to the newly formed household. Farm formation cannot be dissociated from marriage market considerations. Second, in an environment where asset accumulation takes time and is particularly difficult for the poor, assets brought to marriage play a paramount role in shaping the lifetime prosperity of newly formed households: well married daughters can expect a life of relative comfort while poorly married daughters may spend most of their life in utter poverty. Assortative matching between spouses – the rich marry the rich, the poor marry the poor – not only increases inequality, it also reduces social mobility due to intergenerational transfers of assets at marriage.

The purpose of this paper is to examine patterns of marriage and parental transfers in rural Ethiopia. We do so in two separate steps. First, we investigate the extent to which the socioeconomic characteristics of spouses are correlated. In particular, we examine the correlation between both parental and personal characteristics of husbands and wives at the time of marriage. We find that marriage in rural Ethiopia is better characterized as an assortative matching process rather than as assignment driven by non-economic factors. This is hardly surprising given that most marriages are arranged by parents and relatives. We then investigate how rural society endows new couples with the assets they need to set up a farm and family – typically land and livestock, utensils, grains, and consumer durables such as clothing and jewelry. We also examine the determinants of intergenerational transfers, both at marriage and through bequests. We find that intergenerational transfers take place primarily at the time of marriage. This is particularly true for men, to whom most productive assets are bequeathed, whether at marriage or afterwards. We also examine the extent to which parental wealth affects the aggregate amount of wealth that the couple has at the beginning of marriage, controlling for characteristics of the couple which may enable them to accumulate assets on their own. We find that the correlation between parental wealth and

wealth at marriage is high, thereby suggesting relatively low intergenerational mobility. However, the correlation between assets at marriage and current assets is lower, indicating either that couples continue to accumulate assets over their married life, that bequests counteract some of the initial asset inequality at marriage, or that public redistribution policies have had an impact on current inequality.

Economic analysis of marriage and the family has grown tremendously since Becker's (1981) Treatise on the Family. Phenomena such as family formation, intergenerational transfers, and the allocation of resources within the family, previously the domain of anthropology and sociology, have increasingly been subject to economic investigation (e.g. Becker and Tomes 1986, Montgomery and Trussell 1986, Bergstrom 1997, Weiss 1997, Behrman 1997, Haddad, Hoddinott and Alderman 1997). Marriage, in particular, is an institution of great interest, since, in many developing countries, it represents the union not only of two individuals, but also of two family or kinship groups. Moreover, in many societies, marriage is the occasion for a substantial transfer of assets from the parent to the child generation (the other is the parent's death). Lastly, recent work testing the collective versus the unitary model of household decision making has paid increased attention to conditions prevailing at the time of marriage. In particular, it has been shown that the distribution of assets between spouses at the time of marriage acts as possible determinant of bargaining power within marriage (e.g. Thomas, Contreras and Frankenberg 1997, Quisumbing and de la Brière 2000, Quisumbing and Maluccio 2003). While it can be argued that assets at marriage do not completely determine the distribution of assets upon divorce (Fafchamps and Quisumbing 2002), these measures are, in themselves, worth investigating because they shed light on the institution of marriage and inheritance in rural societies.

This paper differs from these other works in two main respects. First, we examine the extent to which spousal characteristics—both personal and family characteristics—are correlated. Second, unlike marriage market studies which focus on dowry and brideprice *per se*, that is, on transfers at marriage from one family to the other (e.g. Rao 1993, Foster 1998), we examine the totality of assets brought to marriage, whether these were acquired from parents or other sources prior to marriage or received at the time of marriage. [1] This more inclusive measure is more appropriate in rural Ethiopia because gifts

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[1] This is not entirely new in the literature. Quisumbing (1994) and Thomas et al. (1997) examined the effects of assets at marriage on the allocation of land and schooling among children in the Philippines and on child health in Indonesia,

from the families to each other and to the couple account for only a small proportion of assets brought to marriage. The main purpose of these gifts seems to be to seal the marriage by providing a symbolic exchange between families, and to cover the cost of the wedding rather than to endow the new couple. This lesson should be kept in mind when conducting marriage market studies in other (African) countries.

Ethiopia is an ideal site for studying marriage customs because it is characterized by extensive agro-ecological and ethnic diversity. Different religions, with widely divergent views regarding matrimonial issues and the status of women, are well represented and tend to dominate different parts of the country – the Orthodox church of Ethiopia in the north, Sunni Muslims in the east and west, recently converted Protestants in the South, and animist believers in parts of the south. The ethnic and cultural makeup of the country is also quite varied, with Semitic traditions in the north, Cushitic traditions in the south and east, and Nilotic traditions in the west. Climatic and ecological variation is equally high, given the mountainous terrain and the fact that the country stretches from the dry Sahel to the humid equatorial zone. Finally, local traditions have remained largely untouched given the lack of roads and the relative isolation of the countryside.

The paper is organized as follows. We begin in Section 2 with a brief description of the survey and the survey area. We continue in Section 3 with a descriptive analysis of assets brought to marriage, disaggregated by number of unions, and examine the possibility that assortative mating characterizes Ethiopian marriages using the simple correlation coefficient of husband and wife characteristics. This provides the context for Section 4, where we analyze the determinants of the value of assets brought to marriage by the bride and groom. The distribution of assets at marriage between spouses is analyzed as a function of personal, parental, and marriage market characteristics. Owing to the importance of land in total assets, we pay special attention to land transfers at marriage and through bequests. Section 5 concludes.

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respectively. In their analysis of dowry in China, Zhang and Chan (1999) also investigate assets brought to marriage.

2. Study site and survey description

Our choice of country is partly motivated by the fact that Ethiopia is primarily an agrarian economy where marriage market issues are important determinants of welfare. Ethiopia is indeed a low-income, drought-prone economy with the third largest population on the African continent. Currently, it ranks as one of the poorest countries in the world, in part a reflection of its tumultuous recent history; over the past decade it has experienced drought, famine, civil war, and the demise of a military government. While some work on marriage markets and spousal selection has been done on South Asia (Foster 1998), East Asia (Boulier and Rosenzweig 1984), and West Africa (Jacoby 1995), very little is known about marriage markets in East Africa. An additional attraction of Ethiopia as a study site is that it has extensive agro-ecological and ethnic diversity, with over 85 ethnic groups and allegiance to most major world and animist religions (Webb, von Braun and Yohannes 1992), making generalizations about marriage patterns difficult. The ethnographic literature suggests, however, that women's status is relatively higher in the north but declines as one goes south. Ethiopia's diversity extends beyond the people and their cultures to its environment; agroecological zones, and consequently farming systems, vary substantially around the country. This diversity should provide enough variety in marriage market outcomes to identify important determinants.

For our analysis, we rely on the 1997 Ethiopian Rural Household Survey (ERHS) which was undertaken by the Department of Economics of Addis Ababa University (AAU) in collaboration with the International Food Policy Research Institute (IFPRI) and the Center for the Study of African Economies (CSAE) of Oxford University. The 1997 ERHS covered approximately 1500 households in 15 villages across Ethiopia, capturing much of the diversity mentioned above. While sample households within villages were randomly selected, the choice of villages themselves was purposive to ensure that the major farming systems were represented. Thus, while the 15 sites included in the sample may not be statistically representative of rural Ethiopia as a whole, they are quite representative of its agro-ecological, ethnic, and religious diversity.

The questionnaire used in the 1997 round includes a set of fairly standard core modules, supplemented with modules specifically designed to address intrahousehold allocation issues, particularly conditions at

the time of marriage. These modules were designed not only to be consistent with information gathered in the core modules, but also to complement individual-specific information. These modules were pretested by the authors in February/March 1997 in four non-survey sites with a level of ethnic and religious diversity similar to the sample itself. Data collection took place between May and December 1997. Questionnaires were administered in several separate visits by enumerators residing in the survey villages for several months. Careful data cleaning and reconciliation across rounds were undertaken in 1998 and 1999 by Bereket Kebede and IFPRI staff.

The respondent for most of the household survey modules was the household head, except for a special module on bargaining power, which was administered separately to both spouses. In our pretests, it proved difficult to interview females separately, unless the household was female-headed. Thus, information on the spouse (typically the wife) was reported by the husband. This is a potential source of misreporting, particularly on the attributes of the spouse's parents.[2]

The intrahousehold modules collect retrospective information on: the parental background and marriage histories of each spouse; the circumstances surrounding the marriage (e.g. type of marriage contract, involvement in the choice of a spouse); and the premarital human and physical capital of each spouse. A variety of assets brought to the marriage were recorded, as well as all transfers made at the time of marriage. These questions, which were asked separately for each union listed by the household head, pertained to assets brought to marriage by the head and his spouse(s) (or if the household head was female, for herself and her last husband). We must note that all retrospective surveys are likely to involve recall bias. However, because the questions refer to a significant event in people's lives, we expect that the extent of recall bias would be less than in surveys that are not designed around significant personal and cultural events. In this paper, we treat assets at marriage separately from brideprice and dowry, which we consider as exchanges or gifts between families at the time of marriage. Indeed, these account only for a small proportion of total assets at marriage, as will be discussed in Section 3.

Questions were as exhaustive as possible; they covered the value and quantity of land and livestock, as well as the value of jewelry, linen, clothing, grains, and utensils that each spouse brought to marriage.

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[2]Even if spouses (wives) reported on their own family background, it is possible that recall by wives will be less accurate than husbands' owing to the extremely low levels of literacy among women in rural Ethiopia.

In the analysis, values at the time of marriage are converted to current values using the consumer price index. Given the difficulties inherent in a long recall period and in the choice of an inflation correction factor suitable for all 15 villages, these values are likely to be measured with error. We also collected information on the value of the house brought to marriage by each spouse, if any. Although questions were asked about cash as well, they yielded very few responses, if any. This is because accumulation in the form of cash or financial instruments is essentially absent in the study area. Questions were asked about transfers from the bride's and groom's families at the time of marriage, whether to the couple, or to a specific individual. Parental background information was collected for each spouse and each union; these included landholdings of the parents at the time the household head was married, as well as educational attainment of each parent of each spouse. Since this information was obtained retrospectively, these also applied to parents who were deceased at the time of marriage, in which case the question referred to landholding size when the parents were living. Human capital characteristics of each spouse included age, education, and experience in three categories of work prior to marriage: farm work, wage work, and self-employment.

One asset, land, deserves a few words of caution. For some twenty years prior to the survey, rural land has legally been the property of the Ethiopian state and is distributed to individual farmers by the Peasants' Association (PA), a local authority operating at the village level. In this system, land is supposed to be periodically reallocated between farmers to accommodate the needs of young couples. Between these reallocations, farmers hold full user rights on the land. In practice, reallocations have occurred rather infrequently. Different regions also seem to have interpreted the law differently, some opting for a collectivist approach while others essentially followed the old system of inheritance (e.g. The World Bank 1998, Gopal and Salim 1999). The absence of land sales markets implies that land purchases, which could be an avenue for couples to accumulate land during their lifetime, are not possible. Most of the land brought in by grooms at the time of marriage, for example, was already theirs prior to marriage, obtained either directly through their parents, or more typically through indirect means by having their parents lobby the PA (Fafchamps and Quisumbing 2002). Many young men may wait until the PA allocates them land before deciding to marry. In many cases, the land that is allocated to young couples

is land that was formerly owned by their parents. Households can also acquire land to cultivate using share-tenancy agreements (Pender and Fafchamps 2002) It is also worth noting that, although the sale of agricultural land has been illegal in Ethiopia for over twenty years, virtually all surveyed households were able to value the land they had brought to marriage.[3] This leads us to expect that, in rural Ethiopia, parents continue to determine the land base of newly formed couples.

3. Characteristics of Marriage in Rural Ethiopia

Table 1 breaks down the sample by household category. We see that twenty percent of surveyed households are headed by unmarried individuals, most often divorced or widowed women. Monogamous couples living together represent some 62% of the sample. Polygamous households – or parts thereof – account for 7.6% of the sample, while separated couples account for the remaining 9%. Starting from these household level data, we construct a marriage data set that contains information recorded for each union separately. The rest of the analysis presented here is based on this union-level data set.

Survey results show that across all marriages, grooms bring nearly ten times more assets than brides to the newly formed family unit (Table 2), an average of 4,270 Birr (in 1997 prices), compared to 430 birr for brides.[4] For grooms, land is the asset with the highest average value. The next most valuable asset is livestock, followed by grain stocks and other minor assets. In contrast, brides bring very little land to the marriage. They bring some livestock but less than grooms. Two-thirds of the brides report bringing no asset to marriage. Gifts at the time of marriage are distributed more evenly between the groom and the bride but they are very small relative to assets brought to marriage, except for the bride where they are roughly equivalent. The survey area can thus be described as a system where grooms bring most of the start-up capital of the newly formed household. Indeed, parental landholdings of the bride are considerably less than those of the groom. This could reflect respondent biases in answering questions about one's in-laws (the husband was the person interviewed, owing to the reluctance to have wives

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[3] The absence of land sales markets also implies that respondents' valuation of land will be subjective, as there are no current market prices with which to value land. In practice, respondents recalled the value of the land when they received it.

[4] Because the reference point is marriage, our discussion is in terms of the new family unit formed by each union (marriage). But because we ask the same questions for all unions, not just the first union, we allow for the possibility that assets are "carried over" into subsequent unions.

interviewed except in female-headed households) as well as postmarital residence. The predominantly virilocal pattern of postmarital residence (husbands bring in a bride first to their parents', and then to their own homestead) implies that the transfer of labor is from the bride's family to the groom's (Pankhurst (1992): 112-113). Where uxorilocal marriages are reported, it is usually because the bride's family is wealthier, or has a greater need for a male laborer owing to larger landholdings. Given the prevalence of male-headed households in our sample, one can conclude that most of our survey households followed virilocal residence patterns.

Couples also acquire assets through inheritance or bequests, although typically this happens several years after marriage. The value of land inherited by grooms is slightly higher than what they receive at marriage, while the value of livestock inherited is considerably less. Brides inherit a larger value of land than they bring to marriage – the latter is negligible – although the median value is zero. Similar to grooms, livestock inheritance is less than the value brought to marriage.

Regarding human capital, newlyweds in rural Ethiopia bring very little in terms of education: one male out of four in our sample and one woman out of 10 has been to school (Table 2). If we include other forms of education such as literacy campaigns and religious education, only one third of surveyed husbands have a minimum level of literacy. Work experience prior to marriage is more extensive, especially for men who typically have 12 years of farming experience at the time of marriage, vs. 4 years for brides. This is a reflection of both the younger age of brides and the fact that women participate minimally in field work. Age at marriage also differs markedly, with an average age gap of 10 years. Work experience other than farming is extremely limited, especially for women – a finding consistent with the negligible role of non-farm employment in the Ethiopian countryside.

Table 2 also breaks down married couples by first and subsequent marriages of each spouse. While the majority of surveyed husbands (57%) and a higher proportion of wives (68%) have been married only once, multiple successive marriages are common. Forty-three percent of husbands have been married more than once, and 32% of wives.[5] The fluidity of marriage is consistent with the anthropological evidence

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[5] Twenty-three percent of husbands have been married twice, and 11% have been married thrice. Although we observe men who have been married more than three times, they account for only nine percent of the sample. Multiple unions are also common among wives, with 23% having been married twice, and 7% thrice. Only three percent of wives have been married more than thrice, and these numbers are driven by individuals with a large number of spouses.

(Pankhurst 1992); divorce is frequent and serial marriages are common. Rules regarding divorce and inheritance vary dramatically between different locations in Ethiopia. Assets brought to marriage affect the disposition of land and livestock upon divorce, although the correspondence is not exact, contrary to what is often assumed in empirical work on intrahousehold issues (Fafchamps and Quisumbing 2002). Women expect to receive more land and commonly held livestock upon divorce if they brought in some land. Conversely, they expect to get less if their husband brought a lot of land into the marriage. Control over productive resources tends to be centralized into the hands of the household head, be it a man or a woman, irrespective of ownership at or after marriage, and is associated with larger claims over these assets upon divorce.

Table 2 also presents characteristics of each spouse, by first and subsequent marriages. Grooms seem to bring more land, livestock, and assets in subsequent marriages. This is associated with being older and having more work experience, although the direction of causality cannot be established as the number of unions and waiting time to marriage are also endogenous. For example, men from poor or low status households may have to wait longer to marry because they need to accumulate some wealth first.[6] In recent years, marriages have been delayed both due to poverty and as an indirect effect of state policies due to new rigidities in land allocation, labor mobility, and house construction.[7] While brides may appear to bring more to subsequent marriages, gifts at later marriages are less, reflecting the value of the first marriage in Ethiopian society.

There is a lot of inequality with respect to assets brought to marriage (Table 3). The Gini coefficient for all combined assets is 0.621. Married couples thus do not all start equal. Some have much more assets with which to create a new farming enterprise. We also observe extreme inequality in assets brought to marriage by brides: most brides bring nothing while a few bring a lot. In such a polarized society, the presence of a few rich brides is likely to attract competition, an issue studied by Fafchamps and Quisumbing (2004). Gini coefficients for individual assets are higher than for total assets combined, the highest being for land, reflective of the high inequality in parental landholdings. This is a paradoxical

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[6] We thank an anonymous referee for pointing this out.

[7] Pankhurst (1992) notes that given chronic land shortages, a growing population, and increasing corruption, most young households had to wait before being allocated their own plot of land. The sale of labor within the community and seasonal labor migration were restricted, and after villagization, even building a new hut became problematic.

finding, given that the stated objective of the state-run land allocation system is to give land to the tiller. Because land reallocations do not take place every year, many starting couples have no land of their own, unless they are fortunate enough that their parents can spare land for them or unless they had already gained access to land prior to marriage. Inequality is also very large in initial livestock assets, an area in which there has been very little if any government intervention. It is of course conceivable that inequality in asset holdings diminishes over time as periodic land reallocations shift land toward younger generations, as parents give bequests to equalize asset holdings, and as families accumulate livestock over the life cycle. In fact, we find that, despite high inequality in the distribution of assets at marriage, the Gini coefficient for current assets is much lower, at 0.419. This reflects the low correlation between the value of assets at marriage and current asset values.[8] Correlation coefficients of grooms' assets at marriage with parental assets are much higher than the corresponding correlations with current assets.[9] For example, the pairwise correlation coefficient of the value of groom's assets at marriage with parental land is 0.205, and with current assets, 0.129. This may reflect some improvement in long-run asset distributions, either because couples continue to accumulate assets over their married life, because parents give bequests to offset initial inequality, or because public redistribution policies have had an impact on current inequality. Further study along these lines is needed.

One way of characterizing the marriage process is to examine the criteria through which spouses are matched. Are spouses matched randomly, or is marriage characterized by assortative matching? We examine the degree to which the socioeconomic characteristics of spouses are correlated, and whether this correlation has changed through time.

Table 4 presents simple correlation coefficients between a husband's and wife's personal and parental characteristics for five-year intervals corresponding to the year of marriage.[10] To avoid "noise' from excessively small sample sizes, we report only those correlation coefficients for samples with at least 14 observations. We present correlation coefficients for all unions, and separately for first and subsequent

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[8]We refer only to the household aggregate for current assets since assets brought into the household are marriage are managed by the household head, regardless of their original ownership at the time of marriage (Fafchamps and Quisumbing 2002).

[9]Correlation coefficients of the bride's value of assets at marriage with both parental land and current assets are very low, 0.006 and 0.065, respectively. Correlation coefficients of land area with parental land (measured in hectares) are higher than the similar coefficients computed using land values because of the variation in land values across survey sites.

[10]The analysis is similar to that in Quisumbing and Hallman (2003).

unions. Not surprisingly, age at marriage of both husband and wife is highly correlated in all time periods, with no discernible time trend in the correlation coefficients. Indeed, for all marriages, the highest correlation is between spouses' age at marriage, followed by years of schooling, and then gifts. Sorting based on assets at marriage is evident as well, although it is weaker than that based on years of schooling. Interestingly enough, sorting based on maternal schooling appears to be stronger than sorting based on paternal schooling or parental land—and both are weaker than sorting based on personal characteristics. The reciprocal nature of gifts at marriage is evident in the high correlation coefficients between gifts to the bride and groom, regardless of whether the marriage is a first or a subsequent marriage. There are indications that sorting based on spousal schooling seems to become stronger through time, although there is no discernable difference between first and subsequent marriages. In contrast, sorting based on land seems to have decreased through time, at least, in reference to the earliest five-year marriage intervals. This could reflect government intervention in the land market, particularly collectivization of land and control of land allocations by the Peasant Association. There is no clear trend in the correlation coefficients of livestock nor of other assets—both of which are not subject to government intervention. The trend towards increasing sorting based on human capital parallels those in countries as diverse as Bangladesh, the Philippines, South Africa, and Mexico, where, through time, personal characteristics have become more important than familial characteristics in one's choice of a spouse (Quisumbing and Hallman 2003).

4. Assets Brought to Marriage and Bequests after Marriage

We now examine more closely the determinants of assets at marriage and bequests after marriage. We begin with a set of reduced form regressions in which the dependent variable is the total value of all assets brought to marriage. As before, all values are expressed in 1997 Ethiopian Birr. Assets include land, livestock, grain, clothes, linens, jewelry, household utensils, and cash. We also run regressions on land, livestock, and other assets separately. The dependent variable is expressed in logarithms.[11] Because of censoring, tobit is the chosen estimator; marginal effects—the derivative of the expected value of the

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[11] To avoid losing observations, zero observations are replaced by 1 Ethiopian Birr, roughly the equivalent of 25 US cents.

dependent variable with respect to the independent variable– are reported in the Tables. The analysis is conducted for all marriages combined as well as for first unions and subsequent unions separately. Since more male than female respondents were previously married, the number of observations for subsequent unions is larger for men than women. This is but a reflection of the large age gap between men and women at marriage, combined with the fact that, in rural Ethiopia, previously married women are much less likely to remarry than men.

Assets brought to marriage by the bride and the groom are regressed on several variables capturing parental wealth, sibling competition, human capital, dummies for the five-year marriage interval, ethnicity, and religion. Returns and cost of education, as well as other location-specific factors, are controlled for via village dummies, which are not reported. Our measures of parental wealth W are parental land and a dummy that equals one if father went to school).[12] We control for the possibility of sibling competition, and gender differences therein by including, separately, the number of brothers and the number of sisters, following the specification in Butcher and Case (1994) and Garg and Morduch (1998b). We expect parental wealth to raise assets brought to marriage, but the effect of brothers or sisters will depend on gender differences in inheritance patterns.

We also include human capital characteristics as regressors. If schooling or work experience are treated as a substitute for wealth, we would expect parents to give less educated children more wealth (Quisumbing 1994). A negative sign on human capital would thus signal parents' desire to compensate their less educated children. On the other hand, a bride or groom with more work experience may also have accumulated more assets or may have built more implicit claims on their parents' resources. We would thus observe a positive sign on human capital if assets brought to marriage partly reflect the individual work effort of the bride and groom. We thus include four measures of human capital: a schooling index and years of work experience at marriage in three activities: farming, wage work, and non-farm self-employment. Ethnicity and religion are added as regressors to control for cultural differences in attitudes toward bequests. To control for the possibility of a time trend in marriage practices, we include dummies for the five-year interval during which the marriage took place. [13]. While we could have

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[12] This is the best we can do, given the very low levels of schooling parents of respondents have.

[13] We do not include age at marriage and number of previous unions in the regression as waiting time to marriage and

included marriage year dummies instead of dummies for the 5-year interval when the marriage took place, "bunching' of marriage year responses and collinearity among individual year dummies led us to use a longer (5-year) window to capture marriage timing. Another way of capturing time trends in marriage patterns would have been to include birth cohort dummies. However, birth cohort and marriage year are highly correlated; the correlation coefficient between birth cohort and marriage year is 0.566 for grooms and 0.717 for brides. Given that it was impossible to achieve convergence in the tobit estimates if both marriage year and birth cohort dummies are included, we opted to include the marriage 5-year dummies, as the focus of this paper is on events at the time of marriage.

Results are summarized in Tables 5and 6 for grooms and brides respectively. In both cases, we see that parental wealth – measured by father's land – has a strong positive effect on assets brought to marriage for both grooms and brides, although the effect is only significant at first marriage. These results are consistent with the bequest-at-marriage motive: wealthier parents pass on part of their wealth to their children at first marriage. No further bequest is made at subsequent marriages. Sibling competition is not evident for either brides or grooms. Human capital affects the assets that spouses bring to marriage. Results suggest that the groom's farming experience has a positive effect on assets brought to marriage. Years of wage work tend to reduce assets brought to marriage, a finding probably due to the correlation between menial wage work and a history of poverty and landlessness. Results for brides are in general inconclusive: their human capital seems to have little effect on the assets they bring to marriage.

Time trends do not seem to be significant for either brides or grooms. There are very strong village-level effects (not reported here), a possible sign of sharp wealth differences across regions. Ethnicity differences are significant for grooms, but only in subsequent marriages, but are important for brides in their first marriage. We find little evidence of religion effects.

To further investigate the possibility that transfers at marriage are a conduit for parental bequests, we estimate similar regressions using as dependent variable assets inherited after marriage. Because we cannot find a variable that influences assets at marriage but does not affect inheritance, we estimate reduced form bequest regressions, presented in Table 7.[14] For men, three quarters of inherited wealth

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the number of marriages are endogenous

[14]In a life-cycle framework, it is of course possible that parents first choose what to give the child at marriage, and

is land while the rest is livestock; the opposite is true for women. We run separate regressions for total inheritance and land inheritance. Unlike the results for assets at marriage, and specifically for land at marriage (see Table 8), parental land does not affect either total inheritance nor land inheritance of the groom. This suggests that most of the land transferred to sons occurs at the time of, or prior to, marriage. Neither does parental land affect total inheritance and land inheritance of brides. We find that the groom's number of brothers has a strong negative effect on both total and land inheritance, contrary to its insignificant effect on assets at marriage. This effect is very close to minus 0.5, indicating clear sibling competition in inheritance, but only from male siblings. However, the effect of an additional male sibling does not reduce inheritance one for one. We would have expected a coefficient of minus one if inheritance were equally divided among male siblings, similar to Menchik's (1980) finding of equal division of estates among siblings in the United States. In the Ethiopian situation, however, it seems that only male heirs are eligible heirs. With sisters, competition is much less pronounced, an expected result since women inherit much less in general. This result is consistent with findings on sibling rivalry in Africa (e.g. Garg and Morduch 1998a, Garg and Morduch 1998b, Morduch 2000).

Gender differences in inheritance can be understood in the context of old age support patterns in Ethiopia: sons are traditionally responsible for their parents' care in their old age, although recently daughters who are employed increasingly contribute to their parents' support as well. Brides typically do not inherit anything since daughters inherit only in the absence of an eligible male heir, although it is possible that parents will use bequests to provide for daughters who have done poorly in the marriage market.[15] Consistent with anthropological evidence that women in Tigray have higher status, brides in other ethnic groups inherit less relative to Tigrinians, with Amhara brides and brides from other/mixed ethnic groups inheriting significantly less. Human capital does not seem to affect bequests after marriage,

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conditional on transfers at marriage, decide on inheritance. For example, in India, women supposedly get their inheritance in the form of dowry at marriage, while men get it after their father's death. This argument is similar to sequential models of intergenerational transfers, in which investments in child education are made first, and then transfers are made later to equalize wealth among children (Behrman, Pollak and Taubman 1982). Estudillo, Quisumbing and Otsuka (2001) estimated a simultaneous-equations tobit model in which land transfers are made after education is (endogenously) determined; however, we do not have a credible instrument to identify the assets at marriage variable in this data set.

[15] The typical inheritance practice in rural Ethiopia is as follows: if a person had land and many sons and daughters, the land would have been divided equally among all the sons. However, the brothers would have let their sisters make use of their land in case the livelihood of their sisters was affected negatively. If the person had no sons, then the land would have been divided equally among all daughters. In urban areas, if a person had many properties, they would have been divided equally among the sons, or among the daughters if there were no sons. We thank Yisehac Yohannes for this insight into Ethiopian inheritance customs.

with the exception of wage work experience, which diminishes transfers to brides. It may well be that women who have to work for wages come from poorer families to begin with.

Because land accounts for the major proportion of assets at marriage and inheritance, we examine land inheritance separately. Similar to the results for total inheritance, parental land does not exert an important influence on land transferred either to brides or grooms. As will be evident when we examine the regressions on groom's assets, sibling rivalry continues to be an important factor in land inheritance for grooms, but not in land transferred at marriage.

Results for individual assets brought to marriage are reported in Tables 8 and 9. We focus on the groom's assets only due to the small number of non-zero observations for individual assets brought by brides. By and large, the Tables confirm earlier findings. Parental land is shown to be a strong determinant of land at marriage. This finding suggests that the land redistribution role of the Peasants' Association (PA) is insufficient to ensure equal access to land for all young couples. In contrast to the findings on inheritance, sibling competition effects for land are insignificant, except for the positive effect of the number of sisters on land received in subsequent marriages. Possibly because sons do not marry at the same time, or allocations from the PA are made at the time of marriage, siblings do not compete for parents' land resources at the same time, unlike in the case of inheritance, when an estate is typically divided among all eligible heirs at the same time. Parental land also has a positive effect on livestock, possibly since it is complementary to land.

Human capital also affects both land and livestock brought by the groom to marriage. More years spent in farming increase both land and livestock brought to marriage for subsequent marriages of the groom, while years of wage work experience as well as self-employment decrease land brought to marriage. This may reflect both low returns to wage work, as well the possible diversification away from farming activities by those engaged in self-employment.

Time trend effects are shown to affect the composition of assets at marriage. Over time, the (deflated) value of land brought by grooms has increased dramatically.[16] Since a similar increase in not shown when area is used as dependent variable instead of land value, this suggests that the value of land has increased

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[16]Brides bring very little land.

faster than inflation – probably because of increased population pressure. In contrast, the value of livestock has not changed much over time. Taken together, these results suggest that young couples in rural Ethiopia today start their life with fewer productive assets than their parents. In contrast, none of the parental wealth or sibling competition variables are significant in the regressions for other assets (not reported here); holdings of other assets at marriage seem to be driven mostly by village-specific effects.

Before concluding, we test whether the parents of the bride and groom indeed act as one when they decide to endow their offspring. So far we have assumed that they participate in the competition for brides and grooms. In related work (Fafchamps and Quisumbing 2004), we have also shown that they use their own assets to leverage better marriage prospects for their children. However, alternative models of parental behavior are conceivable. In one of these, conditional on a match having taken place, parents pool their resources so that if the parents of groom cannot afford to give much, the parents of the bride pitch in more. Pooling test results are presented in at the bottom of Table 10 in which we regress total assets at marriage on the total land of the bride and groom's parents, and test whether the coefficients are the same. Results are different for first and subsequent marriages. At first marriage, the land of the groom's parents has a strong influence on total assets brought to marriage by the bride and the groom together; the land of the bride's parents does not. Pooling is rejected. Parental education has no effect on assets at marriage, probably because so few parents in the sample received any education. In contrast, parental land (land of the groom's parents) has a weaker effect on assets brought to subsequent marriages—the marginal effect is half that on first marriages, and we cannot reject the null hypothesis of pooling. These results further confirm that the marriage market model fits the data better than more benign cooperative models of household formation—and especially so for first marriages.

5. Conclusion

We have examined the determinants of assets brought to marriage in rural Ethiopia. These determinants shape the distribution of assets and incomes in a society characterized by widespread poverty – and hence where it is difficult to accumulate. Assets at marriage also affect farm size distribution since newlyweds typically initiate their own, separate farming operations. Assets brought at marriage constitute the

dominant form of start-up capital for new farms.

Results indicate that assets brought to marriage are distributed in a highly unequal manner. This is true for all assets. We find no difference in the magnitude of inequality at marriage between land and livestock, in spite of two decades of a stated 'land to the tiller' government policy and (virtually) no intervention to redistribute livestock. These findings suggest that the land reallocation mechanism as practiced by Peasant Associations tends to penalize young couples. Given the extent of land inequality at marriage, land inequality is likely to endure in rural Ethiopia for the foreseeable future, although other avenues for acquiring cultivable land – allocations from the Peasant Association or a growing land rental market – now exist (Pender and Fafchamps 2002). Nevertheless, couples do manage to accumulate assets over time, as the extent of current asset inequality is much less than the inequality of assets at marriage.

We show that, to a large extent, the formation of new couples in rural Ethiopia is characterized by assortative matching, with sorting based on human capital becoming more important through time. Combined with high inequality in assets brought to marriage, our results suggest that the pairing of prospective brides and grooms favors the reproduction of rural inequality over time. This result is consistent with studies of earnings inequality elsewhere: Hyslop (2001), for instance, shows that in the United States assortative matching contributes over one-quarter of the level of permanent inequality, and 23 percent of the increase in inequality between 1979 and 1985.

We also examine what factors determine assets brought to marriage. We find that parental background – mainly parental land – helps predict what individuals bring to their first marriage. While parental land positively influences both brides' and grooms' assets at marriage, brides receive much less than grooms. The inequality between men and women continues at the time of inheritance, and the great majority of women receive nothing at marriage or later from their parents. Sibling competition and education of parents are not important determinants of inequality at marriage, but competition among brothers reduces inheritance for grooms.

Individual accumulation prior to marriage also plays a role. For the groom, a prior marriage is a strong determinant of land brought to marriage, an indication that peasant associations give land to already existing households and that husbands keep the land upon dissolution of the union. This is consistent with

the description of divorce and inheritance practices as described by rural Ethiopian households themselves (Fafchamps and Quisumbing 2002). Grooms also accumulate livestock over time. In contrast, women hardly ever own land and do not appear to accumulate livestock or retain it upon marriage dissolution. The only exception is assets other than land and livestock, which a small minority of women accumulate over time and across marriages.

The substitutability of human capital for wealth depends on the form of human capital. Schooling does not seem to be considered as a substitute for wealth. This is probably due to the low level of schooling recorded in the data and to the fact that, in traditional agriculture such as that practiced in Ethiopia, schooling is of little value to farming. Returns to schooling are in general higher in non-farm activity (e.g. Yang 1997, Fafchamps and Quisumbing 1999), but the surveyed rural areas report very little of it. However, more years of farm experience increase the assets that grooms in particular bring to marriage, while wage work and self-employment decrease it. For first marriages, we reject the hypothesis that parents of the bride and groom act as one after marriage partners have been identified. Taken together, these results suggest that the marriage market model provides a reasonable approximation of what goes on in rural Ethiopia. The rich marry the rich, the poor marry the poor, and social stratification is largely passed on from one generation to the next. What remains unclear from the analysis presented here is whether parents act strategically in transferring assets to their children at marriage and in choosing a suitable spouse for them. These issues are examined in detail by Fafchamps and Quisumbing (2004). Although we find a small number of richly endowed brides, the majority of women in the sample inherit nothing at marriage or afterwards from their parents. The marriage market appears to be a major conduit for household and gender inequality in the Ethiopian countryside.

To complete this picture, one would need to know how much social mobility there is after marriage, e.g., how fast households can accumulate assets and obtain land from the PA, and how easily they can switch to high income professions. While we would suspect that social mobility is low given the predominantly agrarian nature of the surveyed area and the relative lack of remunerative non-farm activities, the lower inequality in current assets suggests either that couples have been able to take advantage of other avenues for wealth accumulation during their married life, that parents make compensatory bequests, or that

redistribution policies have had some impact. This issue deserves more investigation.

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Table 1. Composition of the sample by category of household

Unmarried individuals	Number	Percent	
Single man living alone	72	5.1%	
Single woman living alone	239	16.8%	
Monogamous couples			21.9%
Monogamous couple living together	877	61.8%	
Monogamous couple, husband away	69	4.9%	
Monogamous couple, wife away	55	3.9%	
Polygamous households			70.5%
Polygamous household living together	81	5.7%	
Male headed part of a polygamous couple residing separately	21	1.5%	
Female headed part of a polygamous couple residing separately	6	0.4%	
			7.6%
Total	1420		

Table 2. Assets at marriage, Inheritance, Human Capital, and Parental Characteristics

	Groom						Bride					
	First marriage		Subsequent marriages		All marriages		First marriage		Subsequent marriages		All marriages	
Number of observations	674		505		1179		795		378		1173	
Percentage of all married males (females)	57%		43%		100%		68%		32%		100%	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Assets brought to marriage:												
Land value	1935	153	2218	693	2056	377	34	0	206	0	90	0
Livestock value	1128	0	1616	503	1337	287	254	0	394	0	300	0
Jewelry, clothes, linens, utensils and grain	853	408	908	481	877	448	28	0	64	0	40	0
Total value of assets prior to marriage	3916	1612	4743	2619	4270	1981	317	0	665	0	430	0
Gifts at marriage (1)	281	0	172	0	234	0	488	74	222	0	401	0
Inheritance after marriage:												
Inherited land	2587	0	1964	0	2320	0	129	0	210	0	155	0
Inherited livestock	263	0	256	0	260	0	72	0	97	0	80	0
Total assets at marriage plus inheritance	7047	3424	7126	4144	7081	3750	1006	367	1194	292	1066	353
Human capital												
Age at marriage	25.5	24.3	36.1	33.4	29.9	27.3	17.4	17.3	23.3	22.5	19.3	18.3
Literate (2)	40%	0%	24%	0%	33%	0%	14%	0%	11%	0%	13%	0%
At least some primary education	32%	0%	16%	0%	25%	0%	11%	0%	7%	0%	10%	0%
At least some secondary education	9%	0%	4%	0%	7%	0%	2%	0%	1%	0%	2%	0%
Years of farming experience	9.4	8.0	14.8	10.0	11.7	10.0	3.0	0.0	5.0	2.0	3.7	1.0
Years of wage work experience	0.6	0.0	0.8	0.0	0.7	0.0	0.1	0.0	0.1	0.0	0.1	0.0
Years of self-employment experience	0.8	0.0	0.8	0.0	0.8	0.0	0.3	0.0	0.4	0.0	0.3	0.0
Parental characteristics												
Father's land (in hectares)	7.7	0.6	4.9	0.7	6.5	0.6	1.7	0.4	2.5	0.4	1.9	0.4
Father went to school (yes=1)	7%	0%	8%	0%	7%	0%	7%	0%	7%	0%	7%	0%

Only currently married people included. All values expressed in 1997 Ethiopian Birr.

(1) Gifts made to bride and groom only. A few gifts given to both jointly are divided equally for the purpose of this table.

(2) Either some formal education or some literacy or religious education.

Table 3. Gini distribution of parental land, assets at marriage, and current assets

(All assets measured in 1997 Ethiopian Birr.)	Groom	Bride	Both
Parents' land	0.910	0.867	0.870
Assets at marriage			
Land	0.785	0.982	0.781
Livestock	0.764	0.913	0.753
Other assets	0.644	0.967	0.634
Total	0.631	0.890	0.621
Current assets	n.a.	n.a.	0.419

Table 4. Trends in assortative matching over time, by five-year marriage year intervals, simple correlation coefficients between husband and wife characteristics and family background

All marriages

	No. of marriages	Age at marriage	Years of schooling	Land	Livestock	Other assets	Total assets at marriage	Gifts	Father's schooling	Mother's schooling	Parents' land
1955-59	258	0.62	0.26	0.13	0.16	0.01	0.12	0.46	0.09	0.58	0.09
1960-64	105	0.69	0.32	.	0.15	0.01	0.29	0.24	-0.02	-0.01	0.00
1965-69	162	0.70	0.38	0.26	0.14	-0.03	0.44	0.68	0.36	-0.02	0.45
1970-74	124	0.69	0.36	0.11	0.05	0.08	0.06	0.17	0.26	0.70	-0.03
1975-79	152	0.81	0.42	0.16	0.29	0.03	0.20	0.52	0.29	0.32	0.10
1980-84	195	0.74	0.43	-0.02	0.42	-0.13	0.09	0.38	0.05	0.25	-0.01
1985-89	167	0.77	0.46	-0.10	0.03	-0.12	-0.09	0.51	0.16	0.18	0.10
Overall	1173	0.73	0.44	0.11	0.10	0.09	0.01	0.44	0.19	0.24	0.07

First marriages

	No. of marriages	Age at marriage	Years of schooling	Land	Livestock	Other assets	Total assets at marriage	Gifts	Father's schooling	Mother's schooling	Parents' land
1955-59	155	0.68	0.33	0.22	0.19	-0.02	0.10	0.34	0.21	.	0.01
1960-64	61	0.69	0.34	.	0.04	-0.05	0.30	0.23	-0.03	-0.02	0.27
1965-69	90	0.73	0.40	-0.01	0.20	-0.02	0.15	0.61	0.34	-0.02	0.49
1970-74	71	0.80	0.33	0.24	-0.05	0.21	-0.03	0.11	0.40	0.70	-0.06
1975-79	72	0.60	0.38	0.10	0.66	-0.10	0.23	0.45	0.27	0.70	0.47
1980-84	104	0.77	0.40	0.02	0.52	-0.13	0.49	0.38	0.06	0.26	-0.01
1985-89	58	0.63	0.34	-0.14	0.30	0.01	0.09	0.63	-0.05	0.43	0.16
Overall	612	0.68	0.44	0.04	0.11	0.04	0.03	0.36	0.16	0.29	0.02

Subsequent marriages

	No. of marriages	Age at marriage	Years of schooling	Land	Livestock	Other assets	Total assets at marriage	Gifts	Father's schooling	Mother's schooling	Parents' land
1955-59	103	0.48	0.03	0.28	0.12	0.00	0.20	0.61	-0.04	0.70	0.64
1960-64	44	0.70	0.30	.	0.28	0.01	0.26	0.27	.	.	0.00
1965-69	72	0.63	0.21	0.37	0.09	-0.07	0.55	0.81	0.41	-0.01	-0.02
1970-74	53	0.57	0.38	-0.08	0.61	-0.12	0.54	0.56	0.12	.	-0.03
1975-79	80	0.81	0.48	0.26	0.13	0.06	0.20	0.63	0.33	-0.02	0.08
1980-84	91	0.66	0.39	-0.03	0.48	-0.14	0.06	0.37	0.05	.	-0.05
1985-89	109	0.73	0.52	-0.12	0.01	-0.15	-0.13	0.25	0.38	-0.02	0.09
Overall	561	0.70	0.42	0.19	0.11	0.17	0.00	0.56	0.22	0.15	0.38

Table 5. Assets Brought to Marriage by the Groom
Marginal effects from tobit regressions
(dependent variable is the log of the value of all assets brought to marriage, expressed in current value)

	all marriages		first marriage		subsequent marriages	
Number of observations	1116		638		478	
Pseudo R-squared	0.035		0.045		0.069	
	dEy/dx	z-stat	dEy/dx	z-stat	dEy/dx	z-stat
Wealth of parents						
Land of father (log +1)	0.325	**3.68**	0.506	**3.83**	0.154	1.50
Whether father went to school	0.028	0.09	-0.225	-0.48	0.077	0.23
Competition among siblings						
Number of brothers (log+1)	0.015	0.11	-0.029	-0.15	0.063	0.38
Number of sisters (log+1)	0.116	0.84	-0.081	-0.40	0.204	1.26
Human capital						
Schooling index	-0.018	-0.45	0.018	0.33	-0.032	-0.59
Years of farming experience	0.033	**4.29**	0.022	1.47	0.022	**2.78**
Years of wage work experience	-0.071	**-2.32**	-0.086	**-1.66**	-0.065	**-2.08**
Years of self-employment experience	0.025	0.95	0.064	1.40	-0.021	-0.80
5-year marriage interval dummies (1950-55 omitted)						
1960-64	0.421	1.44	0.745	**1.88**	0.130	0.34
1965-69	0.450	1.76	0.617	**1.70**	0.121	0.39
1970-74	0.379	1.34	0.467	1.18	0.074	0.21
1975-79	0.266	0.98	0.421	1.05	0.108	0.34
1980-84	0.065	0.26	-0.111	-0.30	-0.030	-0.10
1985-89	0.617	**2.28**	0.670	1.47	0.323	1.10
1990-94	1.064	1.11	2.880	1.06	0.612	0.74
Ethnicity dummies (Tigray excluded)						
Amhara	0.270	0.46	-0.634	-0.77	3.253	**4.18**
Oromo	0.496	0.88	-0.650	-0.86	3.900	**5.10**
South-Central	0.743	1.06	-0.134	-0.14	3.528	**3.80**
Other/mixed	-0.044	-0.07	-1.369	-1.62	3.158	**3.65**
Religion dummies (Orthodox excluded)						
Muslim	0.116	0.30	-0.219	-0.39	0.296	0.64
Other Christian	0.111	0.38	0.391	0.93	-0.030	-0.08
Other	-0.342	-0.70	-0.099	-0.14	-0.647	-1.06
Number of censored observations	90		70		20	
Number of uncensored observations	1026		568		458	
Joint tests:	F-stat	p-value	F-stat	p-value	F-stat	p-value
Marriage year	1.28	0.259	1.35	0.223	0.32	0.943
Ethnicity	0.61	0.653	0.87	0.483	6.84	**0.000**
Religion	0.39	0.761	0.60	0.616	0.62	0.604

Village dummies included in regression but not reported.
Selection term and intercept not reported.
z statistics in bold are significant at 10% or better

Table 6. Assets Brought to Marriage by the Bride
Marginal effects from tobit regressions
(dependent variable is the log of the value of all assets brought to marriage, expressed in current value)

	all marriages		first marriage		subsequent marriages	
Number of observations	1022		727		295	
Pseudo R-squared	0.130		0.172		0.108	
	dEy/dx	z-stat	dEy/dx	z-stat	dEy/dx	z-stat
Wealth of parents						
Land of father (log +1)	0.203	**2.16**	0.183	**2.63**	-0.011	-0.05
Whether father went to school	0.211	0.70	-0.091	-0.51	1.138	1.36
Competition among siblings						
Number of brothers (log+1)	0.071	0.53	0.056	0.60	0.246	0.62
Number of sisters (log+1)	-0.019	-0.14	-0.071	-0.72	-0.001	0.00
Human capital						
Schooling index	-0.061	-1.11	-0.013	-0.36	-0.183	-1.07
Years of farming experience	-0.005	-0.41	-0.021	-1.58	0.019	0.70
Years of wage work experience	0.064	0.60	0.037	0.50	0.114	0.40
Years of self-employment experience	-0.001	-0.01	0.026	0.57	-0.031	-0.32
5-year marriage interval dummies (1950-55 omitted)						
1960-64	0.057	0.21	-0.033	-0.18	1.171	1.26
1965-69	-0.067	-0.29	-0.077	-0.51	0.610	0.75
1970-74	0.479	1.52	0.317	1.34	0.826	0.92
1975-79	0.406	1.37	0.270	1.05	0.501	0.71
1980-84	0.032	0.13	0.103	0.55	-0.093	-0.14
1985-89	0.791	**1.84**	0.532	1.39	1.063	1.10
1990-94	-0.986	**-10.06**	-0.478	**-7.39**	dropped	
Ethnicity dummies (Tigray excluded)						
Amhara	0.754	0.97	0.429	0.69	0.966	0.54
Oromo	0.799	1.05	0.646	1.02	0.512	0.29
South-Central	-0.034	-0.05	-0.471	-1.03	1.025	0.50
Other/mixed	-0.351	-0.75	-0.200	-0.63	-0.660	-0.46
Religion dummies (Orthodox excluded)						
Muslim	-0.074	-0.20	-0.208	-0.92	1.913	1.36
Other Christian	-0.082	-0.27	-0.109	-0.53	-0.274	-0.33
Other	-0.636	-1.60	-0.644	**-8.09**	-1.187	-1.32
Number of censored observations	737		561		176	
Number of uncensored observations	285		166		119	
Joint tests:	F-stat	p-value	F-stat	p-value	F-stat	p-value
Marriage year	1.65	0.131	1.20	0.303	0.81	0.566
Ethnicity	2.06	**0.084**	2.17	**0.071**	0.73	0.570
Religion	0.38	0.766	0.39	0.678	1.26	0.290

Village dummies included in regression but not reported.
Selection term and intercept not reported.
z statistics in bold are significant at 10% or better

Table 7. Bequests to the Groom and Bride, All Marriages
Marginal effects from tobit regressions
(dependent variable is the log of the value of all assets received as bequests (after marriage), expressed in current value)

| | Total inheritance | | | | Land inheritance | | | |
	Groom		Bride		Groom		Bride	
Number of observations	1117		1022		1117		1022	
Pseudo R-squared	0.083		0.111		0.087		0.111	
	dEy/dx	z-stat	dEy/dx	z-stat	dEy/dx	z-stat	dEy/dx	z-stat
Wealth of parents								
Land of father (log +1)	0.211	1.51	0.007	1.48	0.220	1.63	0.006	1.49
Whether father went to school	0.826	1.56	0.003	0.30	0.777	1.52	0.003	0.30
Competition among siblings								
Number of brothers (log+1)	-0.488	**-2.39**	0.005	0.95	-0.488	**-2.46**	0.005	0.94
Number of sisters (log+1)	-0.132	-0.64	-0.003	-0.52	-0.120	-0.59	-0.002	-0.54
Human capital								
Schooling index	0.060	1.02	0.000	-0.14	0.059	1.04	0.000	-0.15
Years of farming experience	-0.019	-1.64	-0.002	-1.61	-0.019	-1.62	-0.001	-1.61
Years of wage work experience	-0.065	-1.32	-0.205	**-2.22**	-0.063	-1.31	-0.191	**-2.22**
Years of self-employment experience	0.062	1.57	-0.002	-0.70	0.061	1.59	-0.002	-0.69
5-year marriage interval dummies (1950-55 omitted)								
1960-64	-0.133	-0.31	-0.007	-0.99	-0.117	-0.28	-0.006	-0.99
1965-69	-0.091	-0.24	-0.008	-1.14	-0.101	-0.28	-0.007	-1.13
1970-74	-0.189	-0.47	-0.011	-1.62	-0.188	-0.48	-0.011	-1.62
1975-79	-0.762	**-2.12**	-0.007	-0.96	-0.753	**-2.17**	-0.006	-0.94
1980-84	-0.330	-0.91	-0.008	-1.07	-0.321	-0.91	-0.007	-1.06
1985-89	-0.752	**-2.11**	-0.007	-0.94	-0.723	**-2.09**	-0.006	-0.93
1990-94	-0.986	-0.82	-0.011	**-1.98**	-0.996	-0.86	-0.010	**-1.98**
Ethnicity dummies (Tigray excluded)								
Amhara	-0.324	-0.32	-0.029	**-1.77**	-0.315	-0.32	-0.027	**-1.77**
Oromo	-0.253	-0.27	-0.011	-0.94	-0.334	-0.37	-0.011	-0.94
South-Central	-1.539	-1.51	-0.020	-1.15	-1.527	-1.54	-0.018	-1.13
Other/mixed	-0.880	-1.06	-0.013	**-1.78**	-0.866	-1.07	-0.012	**-1.76**
Religion dummies (Orthodox excluded)								
Muslim	1.610	**2.22**	-0.005	-0.35	1.605	**2.28**	-0.004	-0.34
Other Christian	0.169	0.38	0.003	0.20	0.156	0.36	0.003	0.20
Other	1.126	1.37	-0.022	**-1.99**	1.078	1.36	-0.021	**-1.99**
Number of censored observations	582		903		582		903	
Number of uncensored observations	535		119		535		119	
Joint tests:	F-stat	p-value	F-stat	p-value	F-stat	p-value	F-stat	p-value
Marriage year	0.99	0.436	0.62	0.715	1.00	0.431	0.62	0.717
Ethnicity	0.75	0.555	1.16	0.327	0.75	0.555	1.15	0.332
Religion	2.60	**0.051**	0.10	0.903	2.70	**0.045**	0.10	0.907

Village dummies included in regression but not reported.
Selection term and intercept not reported.
z statistics in bold are significant at 10% or better

Table 8. Land Brought to Marriage by the Groom
Marginal effects from tobit regressions
(dependent variable is the log of the value of land brought to marriage, expressed in current value)

	all marriages		first marriage		subsequent marriages	
Number of observations	1116		638		478	
Pseudo R-squared	0.055		0.061		0.08	
Wealth of parents	dEy/dx	z-stat	dEy/dx	z-stat	dEy/dx	z-stat
Land of father (log +1)	0.591	**4.26**	0.802	**4.40**	0.147	0.71
Whether father went to school	-0.175	-0.37	-0.259	-0.41	-0.582	-0.93
Competition among siblings						
Number of brothers (log+1)	-0.207	-0.99	-0.058	-0.21	-0.419	-1.31
Number of sisters (log+1)	0.030	0.14	-0.449	-1.54	0.622	**1.94**
Human capital						
Schooling index	0.065	1.06	0.191	**2.53**	-0.008	-0.08
Years of farming experience	0.060	**5.01**	0.017	0.81	0.058	**3.85**
Years of wage work experience	-0.150	**-2.97**	-0.178	**-2.27**	-0.185	**-2.88**
Years of self-employment experience	-0.076	**-1.69**	-0.128	**-1.93**	-0.082	-1.48
5-year marriage interval dummies (1950-55 omitted)						
1960-64	-0.034	-0.07	0.233	0.39	-0.389	-0.51
1965-69	1.180	**2.65**	1.094	**1.90**	0.754	1.16
1970-74	1.290	**2.57**	0.880	1.40	1.504	**1.97**
1975-79	1.379	**2.89**	0.819	1.31	1.568	**2.28**
1980-84	1.950	**4.26**	0.974	**1.67**	2.306	**3.42**
1985-89	3.983	**7.74**	3.127	**3.75**	3.774	**5.88**
1990-94	5.670	**2.95**	5.549	1.05	4.544	**2.52**
Ethnicity dummies (Tigray excluded)						
Amhara	0.387	0.39	-0.042	-0.04	3.148	**1.78**
Oromo	-0.351	-0.40	-0.226	-0.22	1.965	1.11
South-Central	-1.214	-1.10	-1.039	-0.77	0.823	0.40
Other/mixed	-0.877	-0.93	-1.356	-1.38	1.464	0.74
Religion dummies (Orthodox excluded)						
Muslim	1.184	**1.80**	0.001	0.00	2.650	**2.76**
Other Christian	-0.242	-0.53	-0.544	-0.96	1.345	**1.78**
Other	-0.824	-1.19	-1.270	**-1.66**	0.853	0.68
Number of censored observations	444		297		147	
Number of uncensored observations	672		341		331	
Joint tests:	F-stat	p-value	F-stat	p-value	F-stat	p-value
Marriage year	12.07	**0.000**	2.91	**0.005**	7.64	**0.000**
Ethnicity	1.08	0.364	0.71	0.584	1.41	0.231
Religion	2.03	0.108	0.78	0.505	2.88	**0.036**

Village dummies included in regression but not reported.
Selection term and intercept not reported.
z statistics in bold are significant at 10% or better

Table 9. Livestock Brought to Marriage by the Groom
Marginal effects from tobit regressions
(dependent variable is the log of the value of livestock brought to marriage, expressed in current value)

	all marriages		first marriage		subsequent marriages	
Number of observations	1117		638		479	
Pseudo R-squared	0.075		0.101		0.062	
Wealth of parents	dEy/dx	z-stat	dEy/dx	z-stat	dEy/dx	z-stat
Land of father (log +1)	0.253	**1.99**	0.420	**2.67**	0.123	0.60
Whether father went to school	-0.307	-0.71	-0.603	-1.16	-0.496	-0.77
Competition among siblings						
Number of brothers (log+1)	-0.182	-0.91	-0.189	-0.79	-0.010	-0.03
Number of sisters (log+1)	0.305	1.47	-0.170	-0.66	0.664	**2.00**
Human capital						
Schooling index	-0.103	**-1.72**	-0.031	-0.46	-0.149	-1.27
Years of farming experience	0.033	**2.94**	0.004	0.22	0.029	**1.81**
Years of wage work experience	-0.033	-0.73	-0.040	-0.61	-0.036	-0.56
Years of self-employment experience	-0.009	-0.20	0.010	0.16	-0.057	-0.89
5-year marriage interval dummies (1950-55 omitted)						
1960-64	0.347	0.75	0.847	1.49	-0.348	-0.46
1965-69	0.413	1.02	0.718	1.41	-0.477	-0.75
1970-74	0.654	1.41	1.247	**2.10**	-0.520	-0.73
1975-79	0.681	1.56	0.653	1.17	0.600	0.87
1980-84	0.288	0.72	0.447	0.88	-0.528	-0.85
1985-89	0.530	1.23	0.793	1.21	-0.326	-0.55
1990-94	1.464	0.86	-2.473	**-17.01**	0.015	0.01
Ethnicity dummies (Tigray excluded)						
Amhara	-0.381	-0.40	-0.975	-1.00	0.736	0.41
Oromo	0.595	0.63	-0.252	-0.27	2.565	1.36
South-Central	0.155	0.13	0.198	0.16	-0.045	-0.02
Other/mixed	-1.556	**-1.99**	-1.675	**-2.36**	-1.599	-0.97
Religion dummies (Orthodox excluded)						
Muslim	0.705	1.11	0.875	1.06	0.926	0.89
Other Christian	-0.018	-0.04	0.231	0.41	0.178	0.22
Other	0.640	0.69	0.832	0.72	1.474	0.86
Number of censored observations	507		330		177	
Number of uncensored observations	610		308		302	
Joint tests:	F-stat	p-value	F-stat	p-value	F-stat	p-value
Marriage year	0.61	0.75	1.08	0.37	0.65	0.71
Ethnicity	2.28	**0.06**	1.16	0.33	2.77	**0.03**
Religion	0.68	0.56	0.55	0.65	0.54	0.65

Village dummies included in regression but not reported.
Selection term and intercept not reported.
z statistics in bold are significant at 10% or better

Table 10. Testing Pooling of Parental Resources
(dependent variable is the log of the value of all assets brought to marriage by both spouses)

	All marriages			
	first marriage		subsequent marriages	
Number of observations	554		445	
Pseudo R-squared	0.053		0.065	
Wealth of parents	**dEy/dx**	**z-stat**	**dEy/dx**	**z-stat**
Land of groom's parents (log +1)	0.457	**3.17**	0.200	**1.90**
Land of bride's parents (log +1)	-0.085	-0.44	0.034	0.27
Whether groom's father went to school	-0.463	-0.89	0.079	0.21
Whether bride's father went to school	0.717	1.47	0.353	0.91
Competition among siblings				
Number of brothers of groom (log+1)	-0.061	-0.29	0.005	0.03
Number of sisters of groom (log+1)	-0.187	-0.84	0.151	0.88
Number of brothers of bride (log+1)	0.212	0.94	0.322	**1.74**
Number of sisters of bride (log+1)	-0.027	-0.11	-0.156	-0.89
Human capital of groom				
Schooling index	0.014	0.23	0.001	0.02
Years of farming experience	0.022	1.13	0.024	**2.44**
Years of wage work experience	-0.090	-1.60	-0.100	**-2.53**
Years of self-employment experience	0.088	**1.71**	-0.013	-0.45
Human capital of bride				
Schooling index	0.028	0.31	-0.039	-0.44
Years of farming experience	-0.018	-0.60	0.012	0.71
Years of wage work experience	-0.084	-0.30	0.064	0.63
Years of self-employment experience	-0.114	-1.01	0.102	**1.81**
5-year marriage interval dummies (1950-55 omitted)				
1960-64	0.480	1.12	0.752	**2.08**
1965-69	0.460	1.19	0.513	1.64
1970-74	0.254	0.60	0.808	**2.31**
1975-79	0.179	0.41	0.582	**1.73**
1980-84	-0.363	-0.89	0.383	1.18
1985-89	-0.160	-0.27	0.472	1.11
1990-94	2.723	1.00	dropped	
Ethnicity dummies (Tigray excluded)				
Amhara	-0.886	-1.00	2.275	**2.75**
Oromo	-0.778	-0.94	3.238	**3.98**
South-Central	-0.100	-0.09	3.110	**3.28**
Other/mixed	-1.610	**-1.79**	2.429	**2.77**
Religion dummies (Orthodox excluded)				
Muslim	-0.200	-0.32	-0.013	-0.03
Other Christian	0.173	0.37	-0.239	-0.62
Other	-0.123	-0.16	-1.070	**-1.68**
Number of censored observations	62		18	
Number of uncensored observations	492		427	
Joint tests:	F-stat	p-value	F-stat	p-value
Father's land	5.07	**0.01**	1.90	0.15
Father's schooling	1.31	0.27	0.48	0.62

Village dummies included in regression but not reported.
Selection term and intercept not reported.
z statistics in bold are significant at 10% or better