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Marriage in Transition: Evidence on Age, Education, and Assets from Six Developing Countries

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Abstract

Marriage is an event of great social and economic significance in most societies. Despite the centrality of marriage in an individual's life history, the literature on marriage patterns pays little attention to men. This paper examines trends in schooling, age, and assets at marriage for both men and women, and spousal differences in these variables in six countries—Bangladesh, Ethiopia, Guatemala, Mexico, the Philippines, and South Africa—using comparable data sets and methodologies.

Descriptive statistics show that the correlation between personal characteristics is increasing compared to the correlation between parental characteristics, indicating greater personal choice in marriage. Multivariate results indicate that both husbands and wives are better educated and older in more recent marriages. Husbands' assets at marriage increase through time in four countries and remain constant in two. Wives' assets at marriage increase in three countries, remain constant in two, and decline in one.

Husband educational advantage at marriage has decreased in three countries, has not changed in two, and has increased in one. Husband age seniority has decreased in four countries and remained constant in two. However, the distribution of assets at marriage continues to favor husbands. In three of the six countries studied, the husband–wife asset difference has not changed through time—and therefore continues to favor husbands—and has increased in the other three.

While the reduction of husband–wife gaps in schooling and age may improve the balance of power within the family, persistent differences in assets in favor of husbands may have important effects on family well-being. Lastly, the implications of increased personal choice and delayed marriage on the institution of marriage itself deserve further investigation.

Marriage is an event of great social and economic significance in most societies. It is a rite of passage that marks the beginning of an individual's separation from the parental unit, even if generations continue to be socially and economically interdependent. In many developing countries, it represents the union not only of two individuals, but also of two families or kinship groups. In many societies, it also entails a substantial transfer of assets from parents to children.

Assets brought to marriage are more than a form of intergenerational transfer—they may affect the distribution of bargaining power and resources within the marriage itself.

Recent work testing the collective versus the unitary model of household behavior suggests that conditions at the time of marriage may affect the distribution of welfare within marriage. In particular, it has been shown that the distribution of assets between spouses at the time of marriage is a possible determinant of bargaining power within marriage (Quisumbing and de la Brière 2000; Quisumbing and Maluccio 2002; Thomas, Contreras, and Frankenberg 1997, 2002). The value of assets at marriage confers bargaining power because it influences the exit options available to spouses. While assets at marriage may 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.

Given the centrality of marriage in an individual's life history, surprisingly little has been written regarding trends in marriage patterns. Because the timing of first marriage critically influences subsequent life events for women, most of the analyses have focused on the female mean singulate age at marriage (e.g., United Nations 1990) and its determinants. Using data from 40 Demographic and Health Surveys (DHS) in developing countries, Singh and Samara (1996) found that, while age at marriage is increasing, a substantial proportion of women in developing countries continue to marry as adolescents. Increases in age at marriage are associated with major social-structural changes such as increases in educational attainment, urbanization, and the emergence of new roles for single women. Jejeebhoy (1995) analyzed 51 studies based on a number of data sources, mostly the World Fertility Surveys and DHS, and found that education is the single factor most strongly related to the postponement of marriage, but the relationship may be subject

to threshold effects. In many countries, the tendency for education to raise marriage age becomes universal only after a few years of primary education. However, because the results of the few studies available are contradictory, little can be said about trends in the relationship between education and age at marriage over time (Jejeebhoy 1995, p. 66).

Because research on marriage timing has been largely motivated by a demographic interest in the initiation of reproduction (Malhotra 1997), and because few fertility surveys collect marriage data for men, most of the studies on age at marriage have been limited to women's experiences (Singh and Samara 1996). As Malhotra (1997) argues, the focus on women neglects the fact that entry into marriage is also an important life course transition for men, which reflects family structure, gender relations, and social change. Malhotra's own work in Indonesia is one of a few recent studies that examine the determinants of marriage timing for both men and women. Hertrich (2002) documents trends in marriage age for men and women in Africa. (Earlier studies on timing of marriage include Dixon [1971] and Smith [1980].)

In addition, the literature on marriage rarely pays attention to the resources that men and women bring to the union. This is a serious gap as empirical work on intrahousehold behavior suggests that the distribution of resources at marriage may affect bargaining power within marriage. Part of this gap is due to limitations of the data.

Anthropological studies are detailed and informative, but only for a small set of people in a particular setting, and very rarely follow the same group through time. However, anthropological techniques have been innovatively used to study changes in marriage patterns. For example, Caldwell, Reddy, and Caldwell (1983) combine data collected using quasi-anthropological approaches and small-scale surveys in a rural area of the south Indian state of Karnataka to examine the changing nature of marriage. Economic analyses have focused mainly on transfers at marriage such as brideprice and dowries (Rao 1993a, 1993b; Zhang and Chan 1999), and not the totality of assets that spouses bring to marriage. Even if brideprice or dowries have great social and cultural significance, there is evidence that they account for only a small proportion of assets brought to marriage in rural Ethiopia (Fafchamps and Quisumbing 2002), and none at all in countries that do not practice either. In general, scant quantitative data capture

both cross-sectional and longitudinal variation with enough detail to describe the significance of conditions at marriage in different cultures. Thus, work analyzing marriage patterns and resources at marriage in a number of countries, using comparable data collection methodologies and empirical analyses, has been scarce.

This paper analyzes data on husband's and wife's human and physical capital and conditions surrounding marriage collected by the International Food Policy Research Institute (IFPRI) in six developing countries.[1] Four data sets—from Bangladesh, Ethiopia, Guatemala, and South Africa—were collected as part of a larger research program on gender and development policy at IFPRI (Bouis et al. 1998; Fafchamps and Quisumbing 2002; Hallman 2000; Hallman et al. 2002; Maluccio, Haddad, and May 2000; Quisumbing and de la Brière 2000; Ruel et al. 2002); the data from Mexico were collected for the evaluation of PROGRESA (Programa Nacional de Educación, Salud y Alimentación), a nationwide program that conditions transfer benefits upon child school and health care attendance (de la Brière and Quisumbing 2000; Skoufias 2001); and the data from the Philippines were part of an earlier study on gender difference in intergenerational transfers (Quisumbing 1994).[2] The data sets from the six countries used comparable data collection methodologies, drew from qualitative studies or the anthropological literature to formulate quantitative survey modules, and contain retrospective data on family background and physical and human capital at marriage for both husbands and wives. The IFPRI study countries were also chosen to capture geographic and cultural variation, as well as to focus on specific policy issues related to gender. Assets at marriage are deflated using the appropriate consumer price index so that the real value of assets from earlier and later marriages can be compared. Unlike those from the Demographic and Health Surveys, the samples are relatively small and are not nationally representative; the study sites are not, however, outliers relative to living conditions within each country (see Appendix Table 1). Moreover, because the surveys were not designed to examine demographic variables (e.g., fertility histories or age at marriage), it is possible that these aspects of the data are less reliable than the economic modules. These caveats must be considered when interpreting some of the regression results, particularly those on age at marriage.

We use these data to estimate similar regressions for all countries: (1) regressions on levels of human capital (education), age at marriage, and assets at marriage (considered separately for husband and wife) as a function of the parental background of each spouse; the population sex ratio (ratio of females to males of mean sample marriageable age, an indicator of the "marriage market squeeze") in the five-calendar-year interval during which the marriage took place; and the year of marriage; and (2) regressions on differences in age, human capital, and assets at marriage between husband and wife, as a function of the year of marriage, the sex ratio when the marriage took place, and differences in the corresponding parental background variables. The second set of regressions enables us to examine whether schooling differences, age differences, and asset differences are changing through time, controlling for parental background effects.

Our results show that more recently married husbands and wives are better educated and older than husbands and wives in earlier cohorts. Although husbands bring more physical assets to marriage than wives, trends in physical assets at marriage are less clear-cut. Asset values of husbands increase through time in four countries and remain constant in Ethiopia and the Philippines. Asset values of wives increase in three countries (Guatemala, Mexico, and South Africa), remain constant in Ethiopia and the Philippines, and decrease in Bangladesh. In four out of six countries, age differences between husband and wife have decreased; the exceptions are the Philippines and South Africa where females marry later. In three out of six countries, husband–wife gaps in schooling attainment at marriage have also decreased. Despite trends toward equality in age and education (which argues for an improvement in the balance of power within marriages), the distribution of assets at marriage continues to favor husbands. In three out of six countries, the husband–wife asset difference has not changed through time—and therefore continues to favor husbands—and in the other three countries it has increased. Persistent differences in assets in favor of men have important implications for household well-being and the welfare of future generations, given recent findings that show that increasing women's status and control of assets has favorable effects on a number of human capital outcomes, particularly in the next generation.

BACKGROUND AND METHODS

Assets at marriage and bargaining power

The IFPRI studies collected data on assets at marriage and conditions surrounding marriage to arrive at quantifiable indicators of bargaining power within marriage that are exogenous to current marital decisions. Data on human capital at marriage, such as schooling, have been collected in numerous surveys, but data on assets at marriage are relatively rare. The data collection effort was largely motivated by the desire to test the collective model of the household, which predicts that one's share of resources received within a relationship will be determined by one's bargaining power within that relationship.[3] Because bargaining power is an elusive concept, candidate proxies for bargaining power have included: (1) public provision of resources to specific household members and exogenous policy changes that affect the intrahousehold distribution thereof (Lundberg, Pollak, and Wales 1997; Rubaclava and Thomas 2002); (2) shares of income earned by women (Hoddinott and Haddad 1995); (3) unearned income (Schultz 1990; Thomas 1990); (4) current assets (Doss 1999); (5) inherited assets (Quisumbing 1994); and (6) assets at marriage (Thomas, Contreras, and Frankenberg 2002). Of course, none of these measures is perfect. In most contexts there are no public programs that can serve as a natural experiment. Labor income, typically included in the calculation of income shares, is problematic because it reflects time allocation and labor force participation decisions that are likely to have been the result of some bargaining process within the marriage. Several studies use nonlabor income, either directly or as a way to determine total income (Thomas 1993). However, the assumption that nonlabor income is independent of tastes and labor market conditions may not be true if much of it comes from pensions, unemployment benefits, or earnings from assets accumulated over the life cycle.

Current asset holdings, used by Doss (1999) in her study of Ghanaian households, may also be affected by asset accumulation decisions made within marriage. Depending on provisions of marriage laws, assets acquired within marriage may be considered joint property and will not be easily assignable to husband or wife. The validity of inherited assets as an indicator of bargaining power may be conditional upon the receipt

of assets prior to marriage, unless bargaining power also depends on the expected value of inheritance. Inherited assets could also be correlated with individual unobservables, such as previous investments in the individual during childhood (Strauss and Thomas 1995). Assets brought to marriage, however, are plausible indicators of bargaining power that are not affected by the decisions made within the marriage (i.e., they are exogenous to those decisions, although assets of husband and wife could be correlated if the marriage market is characterized by assortative matching).

Differences in other husband–wife characteristics and their implications

While a clear body of evidence has begun to emerge on how the assets of the husband versus those of the wife affect various human capital investments and outcomes within the household, assets brought to marriage are only one aspect of the conditions surrounding marriage and later bargaining power within the union. Husband's age and educational seniority have also been used to connote male control over women (e.g., Cain 1984; Miller 1981). Educational differences can be viewed as a proxy for differences in earning power, which influences bargaining power (e.g., Sen 1989). For example, Smith et al. (forthcoming) base their measure of women's decisionmaking power relative to their male partners (usually their husbands) on four underlying indicators: whether a woman works for cash, her age at first marriage, the age difference between her and her husband, and the educational difference between her and her husband.

Aside from their use as proxies for differential economic resources, the effects of spousal age differences on power imbalances have not been well studied. One issue has to do with measurement error: Measurement error in the age variable is likely in low-literacy populations with unreliable civil registration systems. Another issue is the difficulty of predicting the effect of age differences outside a particular social and cultural context.

Recent studies from sub-Saharan Africa, for example, show that wider age differences between sexual partners lead to greater HIV vulnerability for young women (e.g., Gregson et al. 2002; Kelly et al. 2001), presumably through their correlation with male wealth advantage and, hence, the lower bargaining power of females. However, the

reverse effect could also be true if women, especially in patriarchal settings, derive status from their husband's characteristics. This would imply that having a husband who is senior in age, education, or economic means would impart well-being (e.g., Kishor 1995). In fact, only a handful of studies have documented the extent of such differences between spouses. Notable exceptions include Luke and Kurz (2002), who reviewed literature on the extent of age-mixing in sexual relationships in sub-Saharan Africa and found that a sizable proportion of sexual partners of adolescent girls are at least 6–10 years older. Hertrich (2002) documents trends in age at first marriage for men and women in African countries where survey or census information is available for at least two points in time; she finds women's marriage age is increasing, the trend for men is mixed, and spousal age differences are declining.

Mensch, Bruce, and Greene (1998) used DHS data from Colombia, Egypt, and Turkey to document spousal age differences by woman's age at marriage and found that even after controlling for female education, spousal age differences are larger among women who marry before age 20. Kishor and Neitzel (1996), also using DHS data, report spousal educational differences for 25 countries. In 16 countries husbands are likely to have more education; in seven countries education levels are likely to be equal; only in Brazil and the Philippines are women more likely to be better educated than their husbands. Casterline, Williams, and McDonald (1986) examine spousal age differences in 28 developing countries using World Fertility Survey data; they find that age differences are generally largest in societies that are patriarchal and have patrilineal kinship organization (including much of sub-Saharan Africa and the Middle East and some of South Asia) and smallest in settings where the traditional social structure allows for more equal status of spouses and/or where processes of modernization have improved the status of women (including many countries in Southeast and East Asia, Latin America, and the Caribbean).

Data collection methodology

Separate qualitative studies on different aspects of gender, including marriage customs, informed the design of surveys in Bangladesh, Ethiopia, Guatemala, and South

Africa. In Mexico and the Philippines, an extensive review of the anthropological literature and interviews with anthropologists and researchers who had worked on marriage customs in those countries influenced questionnaire design. The authors and their colleagues participated in intensive pretests of the survey modules in all countries except Mexico.

Because each data set has specific features related to the purpose of the survey, we discuss only the common features of the data in this section, and leave the country-specific details for later. All the modules on assets brought to marriage include information on the premarital human and physical capital of each spouse (e.g., age, education, work experience, land, livestock, other assets), year of marriage, and parents' background. A variety of assets brought to the marriage were recorded, as well as all transfers made at the time of marriage (brideprice, dowries, and gifts) where applicable. Some of the surveys also collected information on the marriage histories of each spouse (Ethiopia), the circumstances surrounding the marriage (e.g., type of marriage contract, involvement in the choice of a spouse, relative ranking of parents' social status; Bangladesh, Ethiopia); social networks of the wife (Bangladesh, Guatemala, South Africa); inheritance by siblings (Philippines); and gender-specific information on income streams and control and ownership of land, livestock, and other assets (Bangladesh, Ethiopia, Philippines). In four of the surveys (except Mexico and South Africa), the reported values of assets at the time of marriage have been converted to survey-year values using the national consumer price index and the year of marriage. For Mexico, we used an asset index, and for South Africa, a count of assets at marriage. Details regarding the construction of the asset measures are found in the country-specific sections.

Empirical methodology

We first estimate a series of levels regressions on husband's and wife's human capital (education), age at marriage, and assets brought to marriage using the general form:

$$\begin{aligned} \mathbf{A}_i = \alpha + \beta(\text{year of marriage}) + \gamma_1(\text{sex ratio}) + \\ \gamma_2(\text{human capital of parents})_i + \gamma_3(\text{physical capital of parents})_i + \\ \delta(\text{other family background variables})_i + \varepsilon_i \end{aligned} \quad (1)$$

where **A** is a vector consisting of outcomes such as human capital, age at marriage, and assets, all evaluated at the time of marriage for each i, i = h, w (for husband and wife, respectively); year of marriage is the reported year of marriage, which is the same for husband and wife; sex ratio is the ratio of females to males of marriageable age in the five calendar-year interval in which the marriage took place; human capital of parents is an indicator of the parents' educational attainment (usually years of schooling); physical capital of parents includes landholdings of parents (which in some cases are disaggregated for fathers and mothers); other family background variables include other indicators of parental status, number of male and female siblings, birth order, and so forth; and ε is an error term. We estimate (1) separately for husbands and wives.

With the exception of the sex ratio, all explanatory variables were obtained from the household surveys. The sex ratio (defined as the ratio of females in the age category corresponding to the mean marriage age of females to that of males in the corresponding mean marriage age category) was obtained from United Nations country-level population statistics. While it would have been desirable to have district- or village-level sex ratios corresponding to the marriage year, historical data at this level of disaggregation for each study site were not available. We therefore used the country-level figures instead. Because this variable is defined at the country level, it masks the possibility that some areas within the same country (e.g., rural areas with high rates of male outmigration) may have a relative surplus of marriageable wives, while other areas may have a deficit. It also does not capture possible differences in the supply of marriageable individuals of a specific caste or race, if interracial or intercaste marriages are rare. Thus, the coefficients on the sex ratio variable should be interpreted with caution as it is a very imperfect measure of the "marriage squeeze." We use year of marriage rather than year of birth as an explanatory variable owing to difficulties in recalling birth year; because marriage is a more recent event, respondents were better able to recall the year of marriage or the number of years they had been married.[4] We do not include education as a regressor in the age at marriage equation because the same variables that determine age at marriage may also influence educational attainment, especially in societies where young women leave school in order to get married. While one approach could have been to estimate an age at marriage equation with education treated as endogenous, in prac-

tice it is very difficult to find instrumental variables that would affect only education but not age at marriage.

To ascertain whether differences between husbands and wives are narrowing across time, we also estimate a version of (1) in difference form:

$$dA = \alpha' + \beta'(\text{year of marriage}) + \gamma_1'(\text{sex ratio}) + \gamma_2' d(\text{human capital of parents}) + \gamma_3' d(\text{physical capital of parents}) + \delta' d(\text{other family background variables}) + \eta \quad (2)$$

where d is the difference between husband's and wife's variables, all variables in the equation (except year of marriage and the sex ratio) are in difference form, and η is the error term.

Marriage Patterns in Asia, Africa, and Latin America: An Overview

In this section we present a descriptive overview of marriage trends in the six study countries, characterizing the societies in which the data were gathered, describing the samples, and examining trends in spousal characteristics and assortative matching over time. Our sample consists of two countries each in Asia, sub-Saharan Africa, and Latin America. Although partly motivated by reasons of data availability, we also chose countries that were different rather than similar within each geographical region to highlight the role of cultural differences and to determine whether, despite these differences, there are common emerging trends.[5]

Country overviews

Table 1 consists of means and standard deviations of spousal characteristics at marriage—age, schooling, and assets—while Table 2 presents trends in these variables through time for all six study countries.

Bangladesh.[6] Similar to other societies in South Asia, Bangladeshi society is dominated by a patrilineal and patrilocal kinship system. Despite Islamic law, which in principle applies to 85 percent of the population and allows women to own property, the practices of *benami,* where husbands acquire property in their wives' name, and *naior,* where daughters are encouraged to relinquish their inheritance claims to their brothers, illustrate some of the limitations that rural women face in exercising their property rights (Subramanian 1998).

Table 1 Assets at marriage and human capital of husband and wife

	Husband		Wife	
	Mean	**SD**	**Mean**	**SD**
Asia				
Bangladesh				
Age at marriage (years)	23.8	5.7	15.0	3.8
Years of schooling	3.2	4.0	1.7	2.8
Value of assets + transfers at marriage (1996 taka)	36,428.5	150,560.2	12,950.1	20,139.5
Value of assets at marriage (1996 taka)	32,146.0	148,767.9	2,542.9	10,477.0
Value of transfers at marriage to husband/wife (1996 taka)	4,258.7	15,116.7	10,333.5	16,339.0
Philippines				
Age at marriage (years)	25.1	5.7	22.2	5.1
Years of schooling	6.3	3.1	6.3	3.0
Land area at marriage (hectares)	0.5	0.9	0.2	0.6
Value of nonland assets at marriage (1989 peso)	761.8	769.3	463.3	473.2
Africa				
Ethiopia				
Age at marriage (years)	26.3	7.6	17.9	6.0
Years of schooling	1.7	2.3	0.7	1.6
Value of assets at marriage (1997 birr)	4,584.0	8,340.3	1,918.0	3,744.4
South Africa				
Age at marriage (years)	28.5	8.4	23.2	7.1
Years of schooling	5.2	3.8	5.1	3.6
Count of assets at marriage	2.1	1.6	0.7	1.0
Value of transfers from husband's/wife's family at marriage (1998 rand)	36,272.4	50,740.4	6,435.4	22,680.6
Latin America				
Mexico				
Age at marriage (years)	23.3	6.3	18.4	4.0
Years of schooling	3.2	2.9	3.0	2.8
Owned land at marriage (1 if yes)	0.13	0.34	0.00	0.06
Asset score at marriage	0.02	0.08	0.01	0.06
Guatemala				
Age at marriage (years)	22.6	5.1	19.9	3.7
Years of schooling	7.2	3.5	6.0	3.7
Value of assets at marriage (1999 quetzal)	5,226.8	12,013.8	727.4	1,684.5

The survey was conducted in 47 villages from three sites in rural Bangladesh, each chosen as part of an impact evaluation of two agricultural technology dissemination programs (IFPRI-BIDS-INFS 1998). In two of the sites (Jessore and Saturia), NGO

Table 2 Trends in husband and wife characteristics at marriage, by five-year marriage-year intervals

	No. of marriages	Years of schooling		Age at marriage		Marriage assets + transfers		Assets at marriage		Transfers to		Sex ratio
		Husband	Wife	Husband	Wife	Husband	Wife	Husband	Wife	Husband	Wife	
Asia												
Bangladesh												
1930–34	1	0.00	0.00	27.00	9.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02
1935–39	2	0.00	0.00	28.19	12.50	0.00	0.00	0.00	0.00	0.00	0.00	1.02
1940–44	3	5.00	1.67	19.42	11.33	0.00	0.00	0.00	0.00	0.00	0.00	1.02
1945–49	16	2.31	0.88	20.84	11.32	0.00	0.00	0.00	0.00	0.00	0.00	1.02
1950–54	34	2.82	0.82	22.93	13.05	8,621.90	21,507.74	5,679.54	5,335.48	2,770.26	19,021.64	1.02
1955–59	50	2.64	0.86	22.47	13.62	40,355.99	19,638.39	28,739.80	19,257.46	9,955.70	15,727.31	1.06
1960–64	62	2.44	0.97	22.40	12.70	33,399.62	23,142.25	27,329.91	11,918.45	5,621.68	19,977.07	1.12
1965–69	94	3.86	1.77	24.39	14.45	37,466.66	20,959.34	32,792.70	7,388.71	4,673.96	18,009.26	1.11
1970–74	120	3.54	1.42	22.92	14.16	65,319.44	18,201.53	58,167.31	5,800.13	5,442.83	15,576.75	1.31
1975–79	121	4.38	2.15	23.22	14.98	44,708.19	11,703.86	39,691.58	16,617.34	4,355.09	7,400.15	1.10
1980–84	141	2.76	1.46	24.09	16.01	28,593.82	6,524.70	28,571.70	3,468.11	3,243.71	4,995.88	1.11
1985–89	108	2.42	1.44	24.64	16.28	27,741.57	6,919.89	24,637.40	13,602.81	2,400.25	4,085.83	1.08
1990–94	83	3.13	3.39	26.26	17.45	27,482.85	5,679.25	24,900.69	1,885.30	3,547.63	4,703.04	1.07
1995–99	6	3.33	5.17	26.54	16.00	30,184.62	3,228.01	26,947.19	1,334.24	3,237.43	2,548.52	1.06

	No. of marriages	Years of schooling		Age at marriage		Land area at marriage		Assets at marriage		Sex ratio
		Husband	Wife	Husband	Wife	Husband	Wife	Husband	Wife	
Philippines										
1925–29	2	5.50	9.50	16.00	22.00	0.00	0.50	407.64	472.45	1.15
1930–34	4	4.75	3.25	23.25	19.75	0.25	0.67	693.72	299.84	1.15
1935–39	8	2.75	3.63	21.50	23.50	0.10	0.24	723.82	413.82	1.15
1940–44	12	4.08	4.08	24.17	19.75	0.18	0.50	888.83	442.27	1.15
1945–49	14	4.64	4.86	25.21	22.14	0.02	0.52	704.53	435.28	1.15
1950–54	29	4.34	5.24	24.45	22.45	0.27	0.40	902.62	506.99	1.15
1955–59	28	7.32	5.46	25.75	22.25	0.89	0.26	790.80	582.67	1.29
1960–64	27	5.93	6.63	24.04	21.30	0.48	0.39	516.27	434.45	1.15
1965–69	33	6.61	6.15	24.45	21.97	0.66	0.11	757.92	490.17	1.17
1970–74	34	6.85	6.74	25.29	21.38	0.72	0.12	595.65	388.06	1.13
1975–79	38	7.37	7.58	27.71	24.13	0.37	0.00	868.60	449.85	1.26
1980–84	30	7.87	7.73	24.20	21.80	0.52	0.03	847.86	440.84	1.17
1985–89	3	10.00	10.00	34.00	31.00	0.00	0.64	1,243.85	700.34	1.16

continued

Table 2 *continued*

	No. of marriages	Years of schooling		Age at marriage		Assets at marriage		Sex ratio
		Husband	Wife	Husband	Wife	Husband	Wife	
Africa								
Ethiopia								
1955–59	144	0.69	0.08	31.68	20.11	6,664.50	2,360.70	1.37
1960–64	56	0.67	0.09	25.52	16.44	6,661.85	3,450.78	1.38
1965–69	84	1.20	0.36	23.76	15.72	4,964.11	1,789.68	1.39
1970–74	62	2.29	1.00	23.65	16.32	3,818.32	2,548.83	1.39
1975–79	72	2.31	1.03	24.08	17.01	2,925.50	1,233.61	1.39
1980–84	99	2.86	1.52	24.17	17.98	2,873.41	1,059.34	1.45
1985–89	53	3.29	1.24	26.29	19.43	2,565.61	1,133.21	1.47
1990–94	1	5.00	0.00	50.25	46.25	1,605.21	500.00	1.45

	No. of marriages	Years of schooling		Age at marriage		Assets at marriage		Transfers from		Sex ratio
		Husband	Wife	Husband	Wife	Husband	Wife	Husband	Wife	
South Africa										
1950–54	7	2.57	2.14	17.86	11.57	1.14	0.00	17,477.13	7,413.69	1.06
1955–59	14	3.36	2.50	25.36	17.93	2.00	0.36	44,270.71	6,480.63	1.07
1960–64	30	3.30	3.00	24.03	18.17	1.60	0.63	51,014.27	8,110.00	1.12
1965–69	66	4.15	3.62	26.03	21.42	1.89	0.53	46,676.74	8,617.73	1.18
1970–74	67	5.51	4.69	26.55	21.82	1.96	0.55	46,719.09	15,143.04	1.17
1975–79	92	5.39	5.30	26.08	20.75	2.20	0.77	55,176.04	7,624.90	1.20
1980–84	83	6.00	6.04	30.13	24.18	2.22	0.80	29,727.18	3,713.56	1.12
1985–89	72	5.75	5.57	31.92	26.19	2.47	0.82	16,419.83	1,792.36	1.17
1990–94	47	5.68	6.38	34.04	28.87	2.40	1.04	11,608.50	937.60	1.19
1995–99	14	6.29	7.43	39.00	35.93	1.93	1.57	6,517.53	1,007.00	1.11

continued

Table 2 *continued*

	No. of marriages	Years of schooling		Age at marriage		Land owned at marriage		Asset score at marriage		Sex ratio
		Husband	Wife	Husband	Wife	Husband	Wife	Husband	Wife	
Latin America										
Mexico										
1920–24	1	0.00	0.00	17.00	16.00	0.00	0.00	0.00	0.00	1.15
1925–29	1	1.00	0.00	23.00	17.00	0.00	0.00	0.00	0.00	1.15
1930–34	17	0.76	0.39	22.24	17.00	0.21	0.00	0.01	0.01	1.15
1935–39	52	0.73	0.58	21.79	17.00	0.23	0.00	0.02	0.02	1.15
1940–44	128	0.84	0.54	22.41	17.00	0.16	0.01	0.01	0.02	1.15
1945–49	215	0.97	0.75	22.37	18.00	0.15	0.00	0.01	0.01	1.15
1950–54	421	1.33	0.83	23.15	18.00	0.15	0.01	0.02	0.01	1.15
1955–59	665	1.47	1.04	23.06	18.00	0.15	0.00	0.01	0.01	1.14
1960–64	889	1.56	1.26	23.24	18.00	0.15	0.01	0.02	0.01	1.20
1965–69	1,210	1.86	1.46	23.44	18.00	0.14	0.00	0.02	0.01	1.19
1970–74	1,457	2.23	1.87	23.45	18.00	0.14	0.00	0.02	0.01	1.24
1975–79	1,854	2.88	2.51	23.42	18.00	0.14	0.01	0.02	0.01	1.24
1980–84	2,008	3.44	3.09	23.25	18.00	0.13	0.01	0.02	0.01	1.22
1985–89	2,165	4.27	4.08	23.04	19.00	0.12	0.01	0.03	0.01	1.26
1990–94	2,047	4.94	4.92	22.99	19.00	0.11	0.00	0.03	0.01	1.24
1995–99	1,038	5.36	5.34	24.05	20.00	0.13	0.00	0.04	0.02	1.10

	No. of marriages	Years of schooling		Age at marriage		Assets at marriage		Sex ratio
		Husband	Wife	Husband	Wife	Husband	Wife	
Guatemala								
1945–49	2	—	1.00	—	20.00	16,075.40	700.50	1.14
1950–54	3	4.00	0.00	18.00	22.00	167.79	773.91	1.14
1955–59	1	3.00	7.00	24.00	16.00	0.00	0.00	1.07
1960–64	4	5.33	7.00	21.33	17.75	374.50	375.75	1.13
1965–69	7	1.50	2.00	20.50	18.00	306.25	932.53	1.20
1970–74	18	5.53	3.00	26.33	19.83	900.50	141.61	1.25
1975–79	55	5.75	4.00	22.34	19.58	1,818.03	204.96	1.17
1980–84	117	6.09	4.00	22.90	19.73	5,224.25	525.46	1.22
1985–89	224	6.83	6.00	23.45	20.61	3,876.46	469.78	1.21
1990–94	424	7.13	6.00	23.24	20.53	5,476.17	728.64	1.23
1995–99	435	7.60	6.00	23.35	21.10	6,288.56	1,236.61	1.21

programs targeting women only promoted group-based fishponds and vegetable gardening, respectively, providing training and credit. In the third site (Mymensingh), project staff and Department of Fisheries extension agents provided training in fishpond cultivation to relatively well-off households and the same training, combined with credit, to relatively poorer households. This program was intended for both men and women, although in practice more men were beneficiaries. Each round of the four-round survey, conducted every four months from June 1996 to September 1997, collected information on household expenditures on various food, health, and other items. In addition, information on parental and sibling background for both the husband and wife was collected, and in the last round information was collected on premarriage assets, transfers at marriage, inheritance, and indicators of women's mobility and empowerment. In particular, respondents were asked to recall the assets they owned before their wedding (e.g., land, cattle, housing, food items, and "durables"—jewelry, clothes, and household utensils). Questions were designed based on the findings of a qualitative study conducted in two villages from each of the three sites (Naved 2000). The reported values of these assets at the time of marriage were converted to current values using the national consumer price index.

The first notable finding is that Bangladeshi wives bring far less to the marriage than do their husbands, as measured by the value of premarital assets (in 1996 taka) and years of schooling (Table 1). Indeed, the value of female assets seems to have decreased through time, while that of males has increased (Table 2). Female assets typically consist of food items and durable goods. In addition, a specific module about gifts and transfers at marriage was administered to the female respondents. Transfers to the bride and groom include assets and cash and were computed by summing up all transfers to each individual and assigning to each individual half of the transfers reported "to the couple." Data presented in Table 1 show an average net transfer to the bride at the time of marriage, although more recent weddings exhibit a net transfer to the groom (Table 2). This is consistent with the shift from brideprice (paid by the groom) to dowry (paid by the bride's family) reported in Naved (2000).[7] In no case are the transfers at marriage enough to overcome the value of the other resources, including cattle and housing, that men bring to the union, however, as indicated by the husband's advantage in the sum total of prewedding assets and marriage transfer payments.

Bangladeshi women have the youngest age at marriage across the six studies (Table 1), although age at marriage has been increasing through time (Table 2). Men's age at marriage is on par with that of men from the Philippines and Latin America. There is also a gender gap in education of spouses. However, with the introduction in the past decade of "Food for Education" and other female education subsidy programs (Ahmed and del Ninno 2002), spousal education gaps are narrowing (see Table 2; discussed more below). Indeed, the higher levels of schooling reported by wives in the last five-year period may be the result of such programs that link receipt of food and other assistance to secondary school attendance.

Philippines. Unlike Bangladesh, the other Asian country in our sample, the Philippines is characterized by bilateral kinship and bilateral inheritance patterns, and both anthropological studies (e.g., Medina 1991) and studies on intrahousehold allocation support the notion that Philippine society is basically egalitarian (Estudillo, Quisumbing, and Otsuka 2001a, 2001b). For example, the word for "child" in Tagalog does not distinguish between "son" or "daughter"; in some Philippine languages there is no distinction between "husband" and "wife." Egalitarian distribution does not necessarily mean that men and women within the same household receive the same transfers from parents. In the lowland Philippines, for example, parental preferences in land inheritance may favor male children in communities where farming requires intensive male labor (Estudillo, Quisumbing, and Otsuka 2001a, 2001b). Among the Ilocanos of the northern Philippines parents traditionally give a portion of their landholdings to a newly married son as a gift. Some writers (e.g., MacArthur 1977, cited in Caldwell et al. 1998) term this as bridewealth; the local term (*sabong*) means male land dowry (Anderson 1962). Both primogeniture and ultimogeniture—inheritance by the first- and last-born, respectively—are practiced among the Ilocanos depending on the availability of land. Among the Ilonggos of Panay Island in the middle Philippines, daughters and sons may receive land rights more equally and independently than the Ilocanos, although in land-constrained households, children who help their parents farm receive more land than do their siblings.

Preferential land inheritance in favor of males is balanced by higher educational attainment of females, at least since the expansion of public education in the 1960s. An

ethnographic study by Bouis et al. (1998) indicates that parental decisions regarding schooling depend on the inherent attitudes of the child. According to this study, Filipino parents invest in the schooling of girls because they are "more studious," "patient," "willing to sacrifice," and "interested in their studies," traits that would make them succeed in school. Boys, on the other hand, are more prone to vices (such as drinking), are fond of "roaming around" and "playing with their *barkada*" (peer group), and have to be "reminded" and "scolded" to do their schoolwork.

The data used for our analysis come from a retrospective survey of 344 households in five rice-growing villages in the Philippines with different agroecological characteristics conducted from June to October 1989. Two of the villages are in Central Luzon and three are on Panay Island. The 1989 survey included questions on the parents, siblings, and children of the respondents, yielding information on three generations called the grandparents', parents' (respondents and siblings), and (grand)children's generations. Respondents were asked about the premarriage wealth (education and land ownership) of their parents and in-laws, their own and their spouses' education and inheritance, and the schooling of and proposed bequests to their children. Spouses were present during most of the interviews, facilitating collection of data on spouses' family background.[8] Respondents were also asked about the transfers of land and assets received by each sibling regardless of whether the individual lived in the survey area or had migrated.[9]

Compared with Bangladesh, women in the Philippines marry at later ages (Table 1), although, in this rural sample, there is no clear trend toward rising marriage age (Table 2). Filipino men bring more land and assets to marriage, but there is no gender gap in education in this group of respondents.

Ethiopia. Ethiopia is characterized by substantial ethnic and religious diversity; the country has over 85 ethnic groups with most major world and animist religions represented, making it difficult to generalize about gender roles (Webb and von Braun 1994). 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. Currently, Ethiopia 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.

The 1997 Ethiopian Rural Household Survey (ERHS) interviewed approximately 1,500 households in 15 villages across Ethiopia, thus capturing much of the diversity described above.[10] While sample households within villages were randomly selected, the choice of the villages themselves was purposive to ensure that the major farming systems were represented. As such, the sample cannot be taken as representative of rural Ethiopia as a whole, but it does capture much of the country's diversity.

The survey collected information from ever-married individuals regarding their circumstances at the time of marriage (e.g., age, education, experience, family background, and assets) as well as the circumstances surrounding the marriage itself (e.g., type of marriage contract used, if any; decisionmaker regarding the choice of a spouse; and so forth). Assets brought to the marriage and transfers made at the time of the marriage were recorded. The value of assets at the time of marriage is inflated to current value based on the date of marriage and a national consumer price index. Only households with a partnership are considered, yielding a sample of 1,347 households, of which this paper examines approximately 550 first marriages.[11] Marriage is a fluid state in Ethiopia; divorce is frequent and serial marriages are common (Pankhurst 1992). We focus on first marriage because of its significance in Ethiopian society, which is due to the economic value put on virginity and the greater likelihood that the marriage involved a bond between households, rather than a personal arrangement by the bride and groom (Pankhurst 1992, p. 122).

Given the complications inherent in a long recall period and the choice of inflation factor for these items it is difficult to measure premarital assets precisely. Nonetheless clear patterns emerge. On average men bring substantially more physical and human capital to the marriage than do women (Table 1). Contrary to expectations, ritual gifts (e.g., brideprice or dowry) account for only a small proportion of the transfers of ownership that take place at the time of marriage (Fafchamps and Quisumbing 2002). On average, the groom's family spends three times as much as the bride's family in gifts to the bride's

family or to the bride and groom. The amounts involved are quite small, on average, however, and the median is always zero; hence we do not analyze them separately.

The great majority of the new couple's assets are brought to the marriage by the newlyweds themselves, with grooms bringing substantially more start-up capital than brides. Assets brought to marriage vary dramatically among couples, however, with a median of zero for most asset categories except livestock and jewelry/clothing/linen. Contrary to the preconception that marriage is the time at which parents endow their offspring with farmland, most of the land brought by grooms was already theirs prior to marriage. This finding may be specific to Ethiopia, given that the state nominally owns all land (e.g., Gavian and Ehui 1999; Gavian and Teklu 1996). User rights over land are supposed to be allocated by peasant associations (PAs), the local administrative units in rural areas, although many regions of the country have not experienced land reallocations in recent years. Many young men may wait until the PA allocates them land before deciding to marry. In recent years, marriages have been delayed both because of poverty and because of state policies that have restricted land allocation, labor mobility, and house construction. 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,[12] even building a new hut was problematic. This is reflected in lower values of assets at marriage through time for both husbands and wives, but particularly for husbands (Table 2). Whether these time trends are significant must be confirmed by the regressions that control for other confounding variables. While both husbands and wives appear to be obtaining more schooling through time, the improvement in schooling attainment seems to be greater for husbands.

South Africa. KwaZulu-Natal, South Africa's most populated province, is ethnically diverse, although not to the degree of Ethiopia. More than three-quarters of its people are African (nearly all of these Zulu), 10 percent are Indian, 7 percent are white, and 1 percent are colored. Ethnographic evidence on marriage contracts and other relations between men and women indicate large differences in African versus Indian cultural traditions. The marriage agreement in the Zulu tradition, as is common in many

other African cultures, involves a bridewealth payment, or *lobola,* from the groom and his family to the bride's family before the couple can marry. Among Indians, the more common traditional scenario is dowry, with the majority of payments being made from the bride's to the groom's family.

The South African survey, the KwaZulu-Natal Income Dynamics Study (KIDS), includes Africans and Indians from both rural and urban areas.[13] Aside from Guatemala, South Africa is the only other country in this study that includes urban areas. Despite the fact that South Africa is an upper-middle-income country with a 1997 per capita GNP of approximately $3,000, the country's wealth is distributed very unequally, and the majority of the population lives in poverty (Carter and May 1998). Although it is not the poorest province, KwaZulu-Natal is relatively poor despite being relatively urban. In addition to their cultural differences, Africans and Indians differ economically. For example, annual per capita expenditures for Africans average just under $500 while for Indians expenditures are nearly four times as large. Africans and rural residents have relatively low educational attainment, reflecting historical disparities in access to education.

For couples (75 percent of whom were African and 25 percent Indian), information was collected on whether or not each partner owned a variety of assets before marriage, including cattle, other livestock, land, a house, and jewelry. A simple count of the number of assets owned by each partner is used as a proxy for assets owned at marriage (Table 1). While this measure obviates the need for respondents to impute values of items owned in the distant past, it suffers from the same concerns regarding assets at marriage described in detail above, that is, it is imprecise. Owing to sensitivities in the reporting of asset ownership (stemming from apartheid-era abuses), information on family background wealth was not collected. However, given the combination of late age at marriage and short life expectancy of parent generations, survival of the parent to a child's marriage year is not always the rule (approximately 80 percent of mothers and 65 percent of fathers are living at the time of their child's marriage), and is therefore used as an indicator of parental social and economic resources available to a bride or groom.

In South Africa, as in the other countries described in this paper, men bring far more assets to the marriage than do women. They do not, however, have more schooling

than women, reflecting historic and current trends in gender equity in educational attainment within traditional race categories (Statistics South Africa 2001; United Nations Development Programme 2000). Both men's and women's schooling levels have risen through time (Table 2). Compared with Ethiopia, South African men and women marry late (Table 1), with age at marriage rising in recent years as well (Table 2). Owing to the dominance of the Zulu population in our sample, we see large mean marriage payments from the groom's side to the bride's side. However, marriage payments from each side have fallen with time, reflecting the modernization that has come with the opening up of former African homelands and with later generations of Indians becoming more distanced from the dowry customs of South Asian society (Table 2). Africans make higher marriage transfer payments than Indians, and amounts transferred from the husband's side are more than double those from the wife's side, consistent with the Zulu tradition of *lobola*. Over time, differences in spousal education and marriage payments from each side have narrowed. Disparities in age at marriage and assets brought to marriage appear not to have changed, although the mean differences here are not large to begin with. For Africans, however, there are statistically significant spousal differences in each outcome. Relative to their wives, African men are one year older, have one less year of schooling, bring more assets to marriage, and have families that make more marriage payments.

Mexico. Data on assets at marriage in rural Mexico were collected as part of the evaluation of the impact of PROGRESA on women's status and intrahousehold decisionmaking (Adato et al. 2000; de la Brière and Quisumbing 2000). IFPRI and PROGRESA teams jointly designed a module to collect information on family background and the human and physical capital of the husband and wife (assets at marriage).[14] Previous work on marriage patterns in Mesoamerica (e.g., Robicheaux 1997) was instrumental in the design of this module, which was first administered to a group of *promotoras* (community organizers) in February 1999 as a pilot. Based on the results of the pilot and further discussion with PROGRESA staff, a module on family background was fielded as a part of the June–July 1999 evaluation survey round.[15]

The module on family background and assets at marriage asked the wife to report whether or not she and her husband owned land, farm assets, farm animals, a house, or

consumer durables at the time of marriage. The question was asked separately regarding the husband's and wife's assets but neither the quantity in each category nor the value of each asset was asked. We used a modification of a procedure employed by Morris et al. (1999) to arrive at an aggregate asset index for each spouse.[16] The asset score for each spouse was computed by assigning to each item on the list of assets (g) a weight equal to the reciprocal of the proportion of husbands and wives who reported owning the item at the time of marriage (w_g), multiplying that weight by the indicator (zero or one) that the spouse owned the particular asset g (f_g), and summing the product over all possible assets

$$\text{spouse's asset score} = 100\ (\Sigma f_g \bullet w_g) \text{ for } g = 1, ..., G. \quad (3)$$

The choice of the weighting system is based on the assumption that households would be progressively less likely to own a particular item the higher its monetary value. Morris et al. (1999) find that the log of the asset score is highly correlated with the log of the household asset value (computed by summing the reported value of assets) and thus is a good proxy indicator of household wealth.[17] We did not include land in the asset score; rather, two dummy variables indicate whether the husband and the wife had land at the time of marriage.

Husbands enter marriage with more physical capital than their wives: husbands' asset scores were twice those of their wives (Table 1). Thirteen percent of husbands had land at the time of marriage, compared to less than one percent of wives. Table 1 also indicates that husbands have more years of schooling than wives, suggesting that they enter a union with slightly more human capital as well. If, as the literature suggests, human and physical capital significantly influence bargaining power within marriage, rural Mexican husbands wield more power within their households than their wives. However, Table 2 indicates that women's schooling levels have increased through time, although the asset index continues to favor males. The age at marriage has also increased for women, with no clear trends for males. This suggests that for some measure of resources at marriage—those related to human capital—gaps between husband and wife may be decreasing.

Guatemala. The data from Guatemala were collected as part of an IFPRI impact evaluation of the *Hogares Comunitarios* government-sponsored daycare program.[18] It included a random sample of 1,363 women with a child aged 0–7 years from Mixco, one of the three urban zones of Guatemala City where *Hogares Comunitarios* was operating in 1999.

The household survey collected data on household demographic and socioeconomic characteristics, maternal characteristics and employment, childcare arrangements, maternal family background and social networks, and maternal and child anthropometry. Among the family background variables of interest are factors that may have shaped a woman's labor force behavior during adolescence and early adulthood, such as the composition of her natal household and her mother's work behavior and childcare utilization patterns when the study woman was a child, as well as the value of nine major categories of assets that the woman or her husband brought to her most recent marriage (or union) (house, land, furniture, vehicle, stove, sewing machine, linens and bedding, savings, other).

As the purpose of the original study was to evaluate the benefits children and their mothers received from the *Hogares Comunitarios* daycare program, family background information on husbands was not collected. Human capital information was available, however, for current husbands. In this sample 1,290 women had ever been married; 1,136 were currently married; and 997 current marriages were first marriages, of which 976 wives were able to provide complete background information on themselves.

In Guatemala, husbands have completed more years of schooling than wives (Table 1), and they bring more assets to marriage as well. Both husbands' and wives' years of schooling have increased through time (Table 2), along with wife's age at marriage. Although both husbands and wives also bring more assets to marriage through time, the relative percentage that wives bring is increasing only slightly with time.

Trends in assortative matching through time

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? While a thorough analysis of assortative matching—the tendency of individuals to select partners who are most similar to them—is outside the scope of this paper (see Fafchamps and Quisumbing 2003b), we can examine the degree to which the socioeconomic characteristics of spouses are correlated, and whether this correlation has changed through time. We examine patterns in the correlation between personal characteristics of husbands and wives, and between their parents' characteris-

tics, to indicate whether personal characteristics are more or less important than familial characteristics in one's choice of a spouse, and whether the importance of personal versus parent characteristics has changed through time.

Table 3 presents simple correlation coefficients between a husband's and wife's personal and parent characteristics for five-year intervals corresponding to the year of marriage for all our study countries. To avoid "noise" from excessively small sample sizes, we report only those correlation coefficients for samples with at least 14 observations. 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. In Bangladesh, positive assortative matching based on schooling appears to be stronger than matching based on assets or parent characteristics. Matching based on wedding transfer payments is greater than that on assets brought to marriage, while the correlation between parents' land is higher than that between parents' schooling. The strength of sorting based on personal versus parent characteristics is a possible indication of individual choice, as individuals—particularly girls—become more educated and exercise a stronger role in the choice of a spouse, even if marriages are still arranged by parents.

In the Philippines, positive assortative matching is evident in nonland assets at marriage in addition to sorting based on age and schooling. Matching based on spousal characteristics is greater than that based on parental characteristics, with the exception of maternal schooling. In the Philippines, marriages are no longer arranged by parents, although young people are reluctant to marry without parental approval (MacArthur 1977). Surprisingly, the correlation between mothers' schooling is higher than that for fathers' schooling, or even parents' land, probably indicating the importance that mothers play in the choice or approval of a future spouse. An interesting feature is the low, and often negative, correlation between spouses' land at marriage. Although a groom's parents will typically give their son land to farm, if a groom enters marriage without land, the bride's parents will provide land. Thus, land bestowal behavior tends to be compensatory rather than strategic in Philippine marriages.

In Ethiopia, the highest correlation is between spouses' age at marriage, followed by years of schooling. Sorting based on assets at marriage is evident as well, indicating

Table 3 Trends in assortative matching at marriage, by five-year marriage-year intervals (correlation coefficients between husband and wife)

	No. of marriages	Age at marriage	Years of schooling	Land at marriage[a]	Assets + transfers[b]	Assets at marriage	Transfers to marriage	Father schooling	Mother schooling	Parents' land
Asia										
Bangladesh										
1945–49	16	0.69	0.78	—	—	—	—	—	—	–0.02
1950–54	34	0.49	0.57	—	0.32	0.09	0.45	–0.02	–0.06	0.71
1955–59	50	0.71	0.80	—	0.34	0.03	0.07	0.30	0.09	0.58
1960–64	62	0.27	0.62	—	–0.03	0.05	0.52	0.01	0.10	0.00
1965–69	95	0.58	0.72	—	–0.12	–0.08	0.22	0.14	0.18	0.33
1970–74	121	0.58	0.68	—	0.08	0.01	0.28	0.30	0.18	0.36
1975–79	122	0.56	0.68	—	0.00	–0.02	0.43	0.13	0.25	0.47
1980–84	144	0.63	0.54	—	0.03	–0.04	0.47	0.17	–0.03	0.35
1985–89	108	0.63	0.49	—	0.20	0.00	0.18	0.12	0.09	0.80
1990–94	83	0.81	0.58	—	0.10	0.02	0.39	0.22	0.28	0.51

	No. of marriages	Age at marriage	Years of schooling	Land at marriage	Assets at marriage[c]	Father schooling	Mother schooling	Parents' land
Philippines								
1930–34	4	—[d]	—	—	—	—	—	—
1935–39	8	—	—	—	—	—	—	—
1940–44	12	—	—	—	—	—	—	—
1945–49	14	0.73	0.51	–0.10	0.80	0.27	0.44	0.37
1950–54	29	0.86	0.37	–0.09	0.91	0.12	0.22	–0.02
1955–59	28	0.78	0.05	–0.10	0.58	0.13	0.50	0.25
1960–64	27	0.64	0.54	–0.30	0.57	0.07	0.11	0.15
1965–69	33	0.75	0.53	0.48	0.79	0.38	0.65	0.24
1970–74	34	0.18	0.44	0.02	0.76	0.25	0.56	0.20
1975–79	38	0.70	0.63	–0.03	0.90	0.29	0.25	–0.12
1980–84	30	0.59	0.13	–0.20	0.80	0.41	0.04	0.09
1985–89	3	—	—	—	—	—	—	—

continued

Table 3 *continued*

	No. of marriages	Age at marriage	Years of schooling	Land at marriage[a]	Assets at marriage[b]	Father schooling	Mother schooling	Parents' land
Africa								
Ethiopia								
1955–59	144	0.75	0.37	—	0.20	–0.02	—	0.00
1960–64	56	0.54	0.52	—	0.37	–0.03	–0.03	0.29
1965–69	85	0.63	0.44	—	0.37	0.26	—	0.46
1970–74	62	0.78	0.34	—	–0.01	0.28	—	–0.06
1975–79	72	0.48	0.38	—	0.25	0.27	0.70	0.41
1980–84	99	0.75	0.39	—	0.45	0.06	0.29	–0.01
1985–89	53	0.60	0.34	—	0.54	–0.07	0.43	0.32
1990–95	1	—	—	—	—	—	—	—

	No. of marriages	Age at marriage	Years of schooling	Marriage payments from each family	Assets at marriage[e]	Fathers have any education[f]	Mothers have any education[f]
South Africa							
1955–59	14	0.51	0.85	0.87	0.37	0.15	–0.21
1960–64	30	0.70	0.65	0.47	0.52	0.43	0.39
1965–69	66	0.74	0.68	0.13	0.47	0.54	0.53
1970–74	67	0.66	0.84	0.35	0.41	0.65	0.36
1975–79	92	0.65	0.72	0.05	0.47	0.49	0.35
1980–84	83	0.82	0.79	0.13	0.33	0.42	0.39
1985–89	72	0.60	0.61	0.07	0.39	0.55	0.39
1990–94	47	0.90	0.66	–0.02	0.39	0.50	0.27
1995–99	14	0.55	0.60	–0.14	0.63	0.28	–0.03

continued

Table 3 *continued*

	No. of marriages	Age at marriage	Years of schooling	Land at marriage	Assets at marriage	Father schooling	Mother schooling	Parents' land
Latin America								
Mexico								
1930–34	19	–0.28	–0.01	—	0.14	—	—	0.14
1935–39	53	0.36	0.58	—	0.44	—	—	0.65
1940–44	134	0.10	0.24	–0.04	0.71	—	—	0.16
1945–49	220	0.25	0.57	—	0.29	0.50	0.71	0.43
1950–54	437	0.25	0.30	0.09	0.19	0.40	0.58	0.55
1955–59	679	0.35	0.30	–0.02	0.21	0.00	0.00	0.30
1960–64	904	0.33	0.39	0.04	0.25	0.39	0.77	0.24
1965–69	1,233	0.37	0.38	—	0.16	0.44	0.38	0.37
1970–74	1,484	0.42	0.44	0.00	0.23	0.36	0.23	0.29
1975–79	1,899	0.39	0.45	0.01	0.19	0.23	0.23	0.31
1980–84	2,038	0.47	0.45	0.03	0.18	0.31	0.23	0.27
1985–89	2,198	0.45	0.41	–0.03	0.19	0.30	0.16	0.27
1990–94	2,075	0.49	0.42	0.05	0.24	0.17	0.23	0.25
1995–99	1,086	0.49	0.44	–0.03	0.18	0.30	0.13	0.34

	No. of marriages	Age at marriage	Years of schooling	Assets at marriage
Guatemala				
1970–74	18	0.14	0.58	–0.13
1975–79	55	0.52	0.46	–0.07
1980–84	117	0.42	0.60	0.07
1985–89	224	0.33	0.53	0.10
1990–94	424	0.50	0.51	0.07
1995–99	435	0.55	0.49	0.22

[a] Land is included with assets. [b] Value of assets plus transfers to and from both families. [c] Nonland assets only. [d] Correlation coefficients not reported for cell sizes less than 14. [e] Count of assets. [f] 1 = yes; 0 = no.

the presence of assortative matching, although it operates on a variety of levels that cannot be summarized into a single additive index (Fafchamps and Quisumbing 2003b). In South Africa, the strongest correlations are between age at marriage and years of schooling; assortative matching based on assets appears to be weaker. Interestingly, the correlation between marriage payments is weak, and in more recent years is negative, indicating both that traditional marriage systems are weakening and that, instead of competing to bestow their children with assets, families of the bride and groom may "trade off" or compensate transfers from each side. While we have limited information on family background in the South Africa survey, the available data show that sorting along paternal education exists, and is stronger than that along maternal education. The correlation between maternal education of both spouses has decreased through time.

In both Latin American countries, the strongest correlations are between spousal age and years of schooling. In Mexico, matching based on land brought to marriage is weak, probably because women very rarely, if ever, bring land to marriage. Correlations among parent characteristics—fathers' schooling, mothers' schooling, and land—are positive, but not as strong as the correlation with spouses' schooling. Indeed, the correlations between fathers' schooling, mothers' schooling, and parents' land seem to have decreased through time. This is consistent with evidence that personal characteristics of spouses have become more important in the choice of a marriage partner; younger Mexican women emphasize trust, intimacy, and communication more than women of their mothers' generation, who attach greater importance to marrying someone from a good family (Hirsch 2003). Owing to limited information on the family background of husbands, we cannot perform the same degree of analysis for the Guatemala data; however, we find that correlations between spouses' age at marriage and years of schooling are high, higher than those between assets at marriage for both spouses.

Regression Results

Bangladesh. Table 4 presents regressions on years of schooling, age at marriage, and value of assets at marriage for husbands and wives. Findings show that while both spouses are more educated in more recent marriages, the gains for women are larger. This finding is consistent with recent shifts in education finance policies designed to

Table 4 Determinants of years of schooling, age at marriage, and assets at marriage (assets include marriage payments), Bangladesh

	Years of schooling (Tobit)				Age at marriage (OLS with robust SEs)				Value of assets at marriage (Tobit)			
	Husband		Wife		Husband		Wife		Husband		Wife	
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t
Year of marriage	0.04	**1.88**	0.10	**4.54**	0.09	**4.10**	0.12	**10.43**	827.53	**2.60**	–318.18	**–5.19**
Sex ratio	3.89	1.17	–6.78	**–1.98**	–3.94	–1.61	–3.12	**–1.96**	135,290.20	**3.08**	37,851.37	**4.27**
Own birth order	–0.04	–0.27	–0.15	–1.17	–0.20	**–1.87**	–0.08	–1.30	9,456.12	**4.98**	771.82	**2.16**
No. of brothers	–0.03	–0.17	0.16	1.05	–0.03	–0.22	–0.03	–0.47	–417.54	–0.18	–197.34	–0.45
No. of sisters	0.07	0.39	0.25	**1.71**	–0.08	–0.56	0.12	1.40	–5,606.05	**–2.44**	–343.39	–0.81
Value of parents' land	0.00	**6.78**	0.00	**3.89**	0.00	0.60	0.00	**–2.31**	34.00	**3.66**	4.69	**4.79**
Father's schooling	1.31	**5.98**	1.19	**5.95**	–0.24	–1.58	0.18	**1.70**	–1,699.95	–0.57	1,630.56	**2.79**
Mother's schooling	1.77	**4.14**	1.60	**5.97**	–0.15	–0.45	–0.41	**–2.69**	4,379.91	0.69	1,826.25	**2.05**
Site 2	2.98	**4.52**	3.36	**5.22**	1.37	**2.66**	0.67	**2.16**	17,002.77	**1.97**	–5,672.38	**–3.27**
Site 3	1.04	1.59	1.49	**2.33**	0.32	0.65	–0.11	–0.35	–12,291.70	–1.49	–5,470.40	**–3.26**
Constant	–98.47	**–2.10**	–201.37	**–4.49**	–142.94	**–3.41**	–217.81	**–9.57**	–1,788,906.00	**–2.80**	593,495.00	**4.83**
No. of observations					779		786					
F-statistic					3.09		14.54					
Prob >F					0.00		0.00					
R^2					0.05		0.17					
Chi^2	775		778						755		766	
LR chi^2	171.82		240.44						67.27		103.63	
Prob >chi^2	0.00		0.00						0.00		0.00	
Pseudo R^2	0.06		0.11						0.00		0.01	

t-statistics in bold indicate significance at 10 percent or better.

close the male–female schooling gap. Despite this trend toward more gender equity in education, changes over time in the value of assets brought to marriage (defined here as the sum of premarital assets and payments made at the time of marriage) show distinct patterns favoring men.[19] Age at marriage has been rising for both sexes over time, but more so for women. Rising education and age at marriage, especially for females, reflect overall changes in the economy of Bangladesh. Severe declines in the average size of landholdings of rural households owing to population growth may encourage parents to invest in the education of their children in the hope that they will be better-equipped to obtain nonfarm jobs in the emerging market-based economy (Caldwell et al. 1998).

The female-to-male marriageable age population sex ratio at the time of the marriage has the effect of reducing women's schooling and age at marriage, consistent with a hypothesis of female competition for scarce males. Increases in this ratio also raise the total wealth (assets plus transfers) that both men and women bring to marriage, but the effect for males is much greater.

Parent characteristics are important determinants of education, age, and assets at marriage. The value of own parents' land, the major form of wealth-holding in rural Bangladesh, increases levels of schooling and the value of assets brought to marriage of both husbands and wives. This is consistent with better-resourced parents investing in and passing on resources to the next generation regardless of sex (Edlund 1997, 2000; Gardner 1995). Parents' land, however, reduces age at marriage for women, consistent with the notion that wealthier parents do not have to save for long periods of time to accumulate sufficient dowry to marry their daughters. Young marriage age for women has traditionally been highly valued in Bangladeshi society. It is argued by Goody (1976, cited in Caldwell et al. 1998) that this is based on the notion that girls can better marry into "good" families if they are virgins and hence bring no possibility of "other" descendants (through past sexual relations or pregnancy) who may attempt to claim entitlement to inheritance or property. Higher-birth-order children bring more assets to marriage, although after controlling for birth order, additional siblings reduce the marriage assets of husbands. Parental schooling increases the educational attainment of both husbands and wives. For wives, paternal and maternal education each increase the value of

Table 5 Determinants of (husband–wife) differences in years of schooling, age at marriage, and assets at marriage, Bangladesh (OLS with robust standard errors)

	Years of schooling		Age at marriage		Value of assets at marriage	
	Coefficient	t	Coefficient	t	Coefficient	t
Year of marriage	–0.03	**–3.20**	–0.04	**–2.98**	386.16	**1.80**
Sex ratio	2.31	**1.72**	–0.51	–0.23	48,648.66	1.04
Differences in:						
No. of brothers	–0.03	–0.52	0.03	0.44	3,278.32	1.60
No. of sisters	–0.02	–0.30	0.00	0.06	1,304.91	0.87
Value of parents' land	0.00	–1.25	0.00	**2.09**	11.04	**2.17**
Father's schooling	0.02	0.25	–0.10	–0.95	–472.77	–0.19
Mother's schooling	0.12	0.88	–0.16	–1.14	–215.10	–0.07
Constant	57.43	**3.13**	96.34	**3.26**	–794,488.00	**–1.86**
No. of observations	724		729		710	
F-statistic	2.67		2.50		2.34	
Prob >F	0.01		0.02		0.02	
R^2	0.03		0.02		0.02	

t-statistics in bold indicate significance at 10 percent or better.

total assets she brings to marriage but have opposing effects on her marriage age, possibly reflecting differences in parental preferences regarding daughter's marriage age.

Turning to differences between husbands and wives, we observe in Table 5 that husband age and schooling seniority are decreasing over time but husband asset advantage is getting larger. In an earlier specification with assets and transfer payments entered separately, not reported here, it was found that net wedding transfer payments are made increasingly to husbands, consistent with evidence of dowry inflation in South Asia. The sex ratio significantly increases husband's schooling advantage. The only family background variable that is statistically significant is the difference between parents' land values, and the magnitude of the effects is not large. The greater the difference between land owned by the husband's and the wife's family, the greater the difference between husband's and wife's age and assets brought to marriage.

Philippines. Table 6 presents regressions on years of schooling, age at marriage, land area, and nonland assets at marriage for husbands and wives. Reflecting the expansion of public education in the 1960s, both husbands and wives are more educated in

Table 6 Determinants of years of schooling, age at marriage, land area, and assets at marriage, Philippines

	Years of schooling (OLS with robust SEs)				Age at marriage (OLS with robust SEs)				Land area at marriage (Tobit)				Nonland assets at marriage (Tobit)			
	Husband		Wife		Husband		Wife		Husband		Wife		Husband		Wife	
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t
Year of marriage	0.08	**5.55**	0.07	**5.28**	0.12	**3.79**	0.08	**2.51**	0.02	1.55	–0.04	**–3.20**	2.79	0.85	–2.24	–1.04
Sex ratio	0.71	0.21	–0.99	–0.28	5.32	0.76	8.40	1.24	–0.61	–0.23	–0.09	–0.03	1,391.35	**1.86**	655.98	1.32
Father's schooling	0.09	1.42	–0.01	–0.09	–0.09	–0.72	–0.13	–1.12	–0.10	**–1.72**	–0.01	–0.09	9.44	0.62	26.45	**2.38**
Mother's schooling	0.10	1.22	0.27	**3.13**	–0.49	**–3.03**	–0.20	–1.32	0.04	0.63	–0.01	–0.20	–34.48	**–1.87**	–12.92	–0.99
Father's land	0.06	0.96	0.09	1.29	0.17	**2.29**	0.35	**2.02**	0.09	**2.17**	0.20	**3.76**	12.87	1.08	8.72	0.77
Mother's land	0.13	1.12	0.09	0.83	0.05	0.44	0.03	0.15	–0.01	–0.23	0.19	**2.21**	51.98	**3.11**	3.68	0.19
Village dummies																
P2 dummy	0.82	1.22	0.71	1.12	0.00	0.00	0.70	0.63	0.31	0.63	–0.33	–0.65	699.73	**5.28**	368.56	**4.10**
P3 dummy	–0.97	**–2.02**	–1.25	**–2.80**	0.38	0.34	1.80	1.57	1.09	**2.43**	0.64	1.50	166.05	1.32	136.21	1.63
CL1 dummy	0.44	0.80	–0.77	–1.54	–2.97	**–3.10**	–1.40	–1.43	1.14	**2.59**	0.75	**1.87**	1,404.18	**11.80**	927.27	**12.10**
CL2 dummy	–0.35	–0.75	–1.02	**–2.04**	–3.69	**–3.68**	–1.21	–1.27	0.68	1.54	–0.84	**–1.68**	353.81	**2.94**	515.60	**6.49**
Constant	–143.77	**–5.39**	–134.16	**–5.13**	–214.95	**–3.49**	–139.10	**–2.26**	–37.08	–1.58	72.14	**3.15**	–6,948.45	–1.09	3,544.47	0.84
No. of observations	259		259		259		259		259		259		259		259	
F-statistic	**9.27**		**10.43**		**4.50**		**2.88**									
Prob >F	0.00		0.00		0.00		0.00									
R^2	0.24		0.28		0.18		0.11									
Chi^2									**16.71**		**57.82**		**164.52**		**148.14**	
Prob >chi^2									0.08		0.00		0.00		0.00	
Pseudo R^2									0.03		0.15		0.04		0.04	

t-statistics, F-statistics, and chi^2 statistics in bold indicate significance at 10 percent or better.

more recent marriages. In line with rising levels of education, age at marriage has also been increasing for both men and women. However, while husband's land area at marriage has remained constant, the trend is distinctly negative for women, probably because of increased land scarcity and the increasing tendency of Filipino parents to give land to sons and schooling to daughters (Estudillo, Quisumbing, and Otsuka 2001b). There are no clear time trends in nonland assets.

Parental characteristics are important determinants of both age at marriage and human and physical capital brought to marriage. Father's land, a proxy for parental wealth, increases age at marriage and land area for both husband and wife. In Ilocano-speaking areas such as our Central Luzon sites, land from the groom's parents is considered essential for starting a new family unit. Mother's land increases land area that wives bring to marriage, as well as husband's nonland assets. Father's schooling increases nonland assets of the wife, but has a slight negative effect on husband's land, probably because fathers with more schooling are likely to be working in nonagricultural occupations and may have less land. Mother's schooling has a positive and significant effect on wife's schooling, which is larger than the effect of father's schooling, and a negative (but only weakly significant) effect on husband's nonland assets. Unlike in Bangladesh, the sex ratio does not affect years of schooling, age at marriage, or land area, and has only a weak positive effect on husband's nonland assets.

Turning to changes in the difference between men and women over time, we find that age, schooling, and asset differences do not change through time (Table 7). This is not surprising given the underlying egalitarian social structure of Philippine society. The only gap that seems to be increasing through time is that in land area: Husbands are bringing more land to marriage than their wives. While this may seem to increase the bargaining power of men within the household, it is offset by women's rising education levels and their increasing propensity to be employed in nonfarm jobs, which have higher returns to schooling (Estudillo, Quisumbing, and Otsuka 2001b). The only significant parental background variable in the entire set of regressions is the difference between husband's and wife's fathers' land, which is positive and significant. That is, the greater the difference between land owned by the husband's father and the wife's father, the greater the difference between the husband's and wife's land area at marriage. The sex

Table 7 Determinants of (husband–wife) differences in years of schooling, age at marriage, land area, and assets at marriage, Philippines (OLS with robust standard errors)

	Years of schooling		Age at marriage		Land area		Nonland assets	
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t
Year of marriage	0.00	0.22	0.02	0.79	0.02	**3.83**	1.97	0.81
Sex ratio	1.28	0.31	–0.71	–0.12	0.00	0.00	755.26	1.15
Differences in:								
Father's schooling	0.02	0.42	–0.06	–0.80	0.01	0.30	–16.17	–1.37
Mother's schooling	–0.01	–0.20	–0.10	–0.92	0.01	0.20	–13.36	–0.91
Father's land	0.02	0.47	0.06	1.05	0.05	**2.54**	0.99	0.13
Mother's land	0.22	1.62	0.00	–0.03	0.03	1.11	24.11	**1.66**
Constant	–7.05	–0.29	–36.43	–0.71	–33.61	**–3.87**	–4,459.98	–0.95
No. of observations	259		259		259		259	
F-statistic	0.70		0.88		4.49		1.31	
Prob >F	0.65		0.51		0.00		0.25	
R^2	0.04		0.01		0.08		0.04	

t-statistics in bold indicate significance at 10 percent or better.

ratio or "marriage squeeze" factor does not affect the gap between the resources that each spouse brings to marriage.

Ethiopia. Similar to the results from Bangladesh and the Philippines, more recent marriages are characterized by husbands and wives with more schooling (Table 8). Father's schooling has a strong positive influence on husband's schooling, but none of the parental background variables significantly affects wife's schooling. Trends in age at marriage in Ethiopia appear counterintuitive: age at first marriage seems to be declining for both men and women. This could be due to reporting error in the age variable and thus should be taken with caution. Evidence from Hertrich (2002) and the National Family Fertility Survey (Central Statistical Authority 1993), for example, suggests that women's age at marriage, though still quite low, has increased over time (World Bank 1998).[20] Husbands whose parents have more land appear to marry later, while those with more brothers marry earlier, perhaps because of the availability of substitutes for male labor on the family farm. While human capital has been increasing at marriage, the real value of physical capital brought to marriage has not changed appreciably through time, contrary to the descriptive results.[21] Parental land increases the value of assets that husbands bring to marriage, while mother's schooling increases the value of assets that

Table 8 Determinants of years of schooling, age at marriage, and assets at marriage, Ethiopia, first marriages only

	Years of schooling (Tobit)				Age at marriage (OLS with robust SEs)				Value of assets at marriage (Tobit)			
	Husband		Wife		Husband		Wife		Husband		Wife	
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t
Year of marriage	0.19	**3.74**	0.31	**3.36**	–0.34	**–4.42**	–0.18	**–2.74**	–132.24	–1.59	4.23	0.10
Sex ratio	–0.92	–0.07	–9.65	–0.44	53.05	**2.89**	51.40	**3.42**	–3,458.13	–0.15	–14,842.62	–1.27
Father's schooling	2.27	**2.77**	1.81	1.43	1.13	0.72	0.08	0.11	757.76	0.52	–842.93	–1.13
Mother's schooling	0.80	0.38	–0.18	–0.08	1.12	0.42	–0.01	–0.01	5,649.13	1.61	2,278.18	**1.95**
Parents' land	0.00	0.65	–0.04	–0.53	0.01	**4.74**	0.01	0.13	17.23	**4.90**	–9.78	–0.54
No. of brothers	0.14	1.22	0.17	0.98	–0.51	**–3.63**	0.01	0.10	–248.52	–1.32	102.06	1.08
No. of sisters	0.08	0.64	0.25	1.32	–0.18	–1.00	–0.14	–0.99	–16.75	–0.08	–204.45	**–1.98**
Region (Tigray excluded)												
Amhara	–0.51	–0.61	2.64	1.48	–2.55	**–2.13**	–1.23	–1.19	–701.44	–0.54	–3,017.56	**–4.73**
Oromo	1.02	1.29	4.16	**2.39**	–4.48	**–4.01**	–1.64	**–1.75**	–376.69	–0.31	–4,682.03	**–7.58**
South-Central	1.37	**1.84**	4.03	**2.39**	–2.05	**–1.84**	–0.18	–0.20	–904.75	–0.77	–4,045.30	**–6.99**
Constant	–374.06	**–4.52**	–603.02	**–3.89**	626.59	**4.88**	305.47	**2.73**	270,900.40	**2.02**	17,929.32	**0.27**
No. of observations	546		532		554		554		558		555	
F-statistic					**22.7**		**2.37**					
Prob >F					0.00		0.01					
R^2					0.16		0.03					
Chi^2	**122.83**		**92.75**						**65.94**		**85.51**	
Prob >chi^2	0.00		0.00						0.00		0.00	
Pseudo R^2	0.07		0.10						0.01		0.01	

t-statistics, F-statistics, and chi^2 statistics in bold indicate significance at 10 percent or better.

Table 9 Determinants of (husband–wife) differences in years of schooling, age at marriage, and assets at marriage, Ethiopia, first marriages only (OLS with robust standard errors)

	Years of schooling		Age at marriage		Value of assets at marriage	
	Coefficient	t	Coefficient	t	Coefficient	t
Year of marriage	0.04	**1.72**	–0.18	**–3.45**	–124.89	–1.52
Sex ratio	–0.55	–0.08	–3.59	–0.27	8,407.69	0.47
Differences in:						
Father's schooling	1.26	**3.82**	–0.31	–0.45	–750.54	–1.53
Mother's schooling	–0.01	–0.01	–2.48	**–1.90**	2,982.81	1.57
Parents' land	0.00	**–4.62**	0.00	1.31	19.17	**13.11**
No. of brothers	–0.05	–1.29	0.03	0.38	–155.96	–1.40
No. of sisters	0.00	0.04	–0.10	–1.10	–152.99	–1.57
Constant	–76.84	–2.10	368.26	**4.27**	236,732.10	1.69
No. of observations	525		548		552	
F-statistic	**11.81**		**12.52**		**43.47**	
Prob >F	0.00		0.00		0.00	
R^2	0.07		0.139		0.09	

t-statistics and F-statistics in bold indicate significance at 10 percent or better.

wives bring. Probably due to sibling competition effects, wives with more sisters bring fewer assets to marriage.

The ratio of women to men of marriageable age affects neither schooling nor assets brought to marriage, but increases marriage age for both men and women. This may reflect a longer waiting time for women, owing to a larger supply of marriageable women. Facing a market in which there are fewer males per marriageable woman, males may also feel no pressure to marry early.

How have differences between husbands and wives changed over time? Age differences between husbands and wives have declined (Table 9). A marriage in which the husband's mother is better educated than the wife's mother is associated with a smaller age difference between husband and wife. The increasing gender gap in schooling attainment at marriage is more surprising, although this effect is only weakly significant. While overall schooling levels of husbands and wives have increased, the difference between husbands and wives is also increasing. Differences in father's schooling in-

crease the gap between husband's and wife's schooling, but differences in parental land in favor of the husband's parents reduce the schooling gap between husband and wife. It is possible that fathers who are better educated invest more in their sons' education, but families who have more land are less likely to do so, given the heavy involvement of males in Ethiopian agriculture. Husbands also tend to bring more assets than their wives to marriage if their families have more land, although the trend shows no narrowing in asset gaps over time. In contrast, the sex ratio does not affect years of schooling, age differences between spouses, or differences in the resources that they bring to marriage.

South Africa. Table 10 presents regressions on years of schooling, age at marriage, asset counts, and transfers made at marriage of husband and wife. Here the values of prewedding assets and marriage transfers could not be combined because assets are merely counted and values not imputed. Whereas in South Asia payments may come from one's own family, in South Africa most payments are transferred across families. Regression results show that years of schooling, age at marriage, and assets at marriage have been rising over time for both men and women. Across the six study countries both schooling and age at marriage are rising for both sexes at an average rate of about 0.10 units per year (with the exception of Ethiopia where the level of education is rising at over twice the average rate and age at marriage is falling). While time trends in educational advances in South Africa are around this average, age at marriage is rising at three times the rate in the other countries. Observing marriage patterns before independence, Schapera (1933, quoted in Caldwell et al. 1998) describes rising age at marriage across southern African countries and attributes it to the suppression of polygyny by the government and religious authorities in combination with the need for high bridewealth payments: older men could no longer legally take younger second and third wives, and young men may have had to delay marriage because they had not yet accumulated sufficient resources for payment of bridewealth. While this is no doubt a factor, it does not explain the major increase in age at marriage observed in the 1980s and 1990s. The later increase is likely the result of: (1) the opening of the economy and associated structural adjustment and capital intensification that raised unemployment to astronomical levels; and (2) increases in HIV prevalence and deaths due to AIDS. Both factors may delay

Table 10 Determinants of years of schooling, age at marriage, assets at marriage, and marriage payments, South Africa

	Years of schooling (Tobit)				Age at marriage (OLS with robust SEs)				Count of assets at marriage (Tobit)				Value of marriage payments from family (Tobit)			
	Husband		Wife		Husband		Wife		Husband		Wife		Husband		Wife	
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t
Year of marriage	0.10	**6.15**	0.13	**8.85**	0.33	**10.28**	0.35	**11.73**	0.02	**2.44**	0.04	**4.71**	–1,545.46	**–6.08**	–500.31	**–2.83**
Sex ratio	–4.27	–0.94	–4.64	–1.08	0.61	0.07	8.07	0.98	2.29	0.96	0.02	0.01	182,234.20	**2.52**	–18,834.74	–0.37
African race	–2.06	**–4.20**	–0.99	**–2.14**	1.42	**1.66**	0.28	0.35	1.55	**5.84**	0.20	0.72	52,227.22	**6.27**	20,263.96	**3.46**
Urban resident	2.79	**6.32**	2.02	**4.87**	–0.85	–0.97	–0.20	–0.25	–0.35	–1.50	0.39	1.55	–9,897.23	–1.40	6,362.25	1.30
Mother alive at wedding	0.49	1.19	0.12	0.29	–4.50	**–4.23**	–1.85	**–2.15**	0.18	0.81	–0.47	**–1.92**	1,655.72	0.25	9,310.94	**1.79**
Father alive at wedding	0.22	0.64	–0.02	–0.07	–1.63	**–2.56**	–0.66	–1.13	–0.05	–0.26	0.06	0.29	1,674.52	0.31	–3,962.29	–1.03
Mother any education	1.59	**4.24**	1.55	**4.30**	–1.47	**–2.08**	–0.99	–1.35	–0.24	–1.20	–0.30	–1.36	2,139.56	0.34	12,130.33	**2.73**
Father any education	1.20	**3.09**	1.39	**3.63**	–1.34	**–1.89**	–1.69	**–2.45**	0.44	**2.12**	0.61	**2.60**	12,145.61	**1.89**	1,378.11	0.29
Constant	–182.99	**–5.89**	–247.80	**–8.58**	–624.85	**–9.86**	–679.01	**–11.61**	–41.86	**–2.57**	–85.02	**–4.69**	2,831,604.00	**5.69**	973,536.40	**2.83**
No. of observations					492		492									
F-statistic					20.42		19.48									
Prob >F					0.00		0.00									
R^2					0.30		0.30									
Chi^2	492		492						492		492		492		492	
LR chi^2	275.98		242.77						92.64		41.02		110.35		35.36	
Prob >chi^2	0.00		0.00						0.00		0.00		0.00		0.00	
Pseudo R^2	0.11		0.10						0.05		0.03		0.01		0.01	

t-statistics in bold indicate significance at 10 percent or better.

marriage in part by reducing family resources available for marriage ceremonies and bridewealth payments. In addition, marginal increases in the female-to-male population sex ratio raise the value of bridewealth payments. This result was unexpected but needs to be taken with caution given the level of aggregation of the "marriage squeeze" variable.

Parent survival to child marriage, a proxy for access to parental resources and support, reduces age at marriage, especially for men. Parent education, particularly that of the father, has a similar effect. These two factors may help ensure availability of bridewealth payment, thus hastening the marriage of young men. Education of mothers and fathers increases the education of children at marriage regardless of sex. Education of the father increases the assets that a husband and wife bring to marriage, which may reflect paternal earning power and hence unmeasured parental wealth. The year of marriage coefficients in the marriage payment regressions are negative, indicating that more recent marriages involve lower payments. These results are consistent with the time trends presented in Table 2.

Table 11 presents determinants of husband–wife differences. More recent marriages are characterized by lower disparities in spouse education and marriage payments made by each family. Differences in spouse age and assets do not appear to have changed over time. A higher female-to-male marriageable age population ratio at the time of the wedding increases the marriage payments made by husbands. This result runs contrary to a "scarce husband" hypothesis, and the same caveat as above applies. Being African means that relative to his wife a man is one year older, has one less year of schooling, brings more assets to marriage, and has a family that makes more marriage payments. In urban areas, husband–wife asset disparities are smaller. A husband's mother surviving to his marriage results in a smaller spouse age difference. If a husband's mother has more schooling than his wife's mother, he will be closer to his wife in age, and the difference in the number of assets he and his wife bring to marriage will be smaller. If on the other hand his father is more educated than his father-in-law, he will have more assets at marriage than his wife.

Mexico. For both husband and wife, years of schooling increase with later marriage years (Table 12). More years of schooling are also associated with literate parents (both father and mother), and primary school attendance and completion by both par-

Table 11 Determinants of (husband–wife) differences in years of schooling, age at marriage, assets at marriage, and marriage payments, South Africa (OLS with robust standard errors)

	Years of schooling		Age at marriage		Count of assets at marriage		Value of marriage payments	
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t
Year of marriage	–0.03	**–2.59**	–0.02	–0.99	0.00	–0.66	–1,015.39	**–4.85**
Sex ratio	0.94	0.26	–4.67	–0.71	2.36	1.37	155,126.70	**2.37**
African race	–0.98	**–2.49**	1.08	**1.81**	0.92	**5.19**	23,929.24	**3.02**
Urban	0.50	1.46	–0.76	–1.29	–0.55	**–3.13**	–10,446.60	–1.39
Wife's mother alive at wedding	0.30	0.79	–0.09	–0.13	0.20	1.26	–2,248.93	–0.38
Wife's father alive at wedding	0.18	0.62	0.84	**1.65**	0.08	0.53	9,275.94	**1.86**
Husband's mother alive at wedding	0.18	0.55	–3.65	**–4.82**	0.17	1.02	3,613.20	0.60
Husband's father alive at wedding	–0.05	–0.19	–0.85	**–1.85**	–0.14	–1.03	–1,001.00	–0.21
Differences in:								
Mother's schooling	0.04	0.72	–0.26	**–2.77**	–0.08	**–2.65**	845.10	1.03
Father's schooling	0.04	0.77	0.02	0.25	0.05	**2.30**	–769.80	–1.03
Constant	60.61	**2.61**	57.10	1.30	5.95	0.49	1,837,739.00	**4.50**
No. of observations	492		492		492		492	
F-statistic	3.87		5.47		15.18		7.04	
Prob >F	0.00		0.00		0.00		0.00	
R^2	0.08		0.14		0.19		0.12	

t-statistics in bold indicate significance at 10 percent or better.

ents. While social status variables of the father—proxied by the father's wearing shoes—has a positive and significant effect on both husband's and wife's schooling, the corresponding social status variable for the mother only affects wife's schooling. Lastly, parental landholdings also positively influence the number of completed years of school. A larger supply of women relative to men of marriageable age is associated with fewer years of schooling for both men and women. The potential of increased competition for mates may induce women to marry earlier and thus stop schooling.

Similar to the other study countries, both spouses are older in more recent marriages. If the husband's father wore shoes the husband's age at marriage decreases. Wives whose parents own more land tend to marry slightly later, but completion of primary school by the father reduces wife's age at marriage. A larger supply of women of marriageable age (the sex ratio) exerts downward pressure on men's and women's age at marriage.

Table 12 Determinants of years of schooling, age at marriage, land ownership, and assets at marriage, Mexico

	Years of schooling (Tobit)				Age at marriage (OLS with robust SEs)				Land ownership (Probit with robust SEs)				Asset score (Tobit)			
	Husband		Wife		Husband		Wife		Husband		Wife		Husband		Wife	
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	dF/dX	z	dF/dX	z	Coefficient	t	Coefficient	t
Year of marriage	0.12	**46.48**	0.13	**54.19**	0.02	**4.70**	0.04	**14.10**	0.00	**–4.55**	0.00	1.06	0.00	**4.44**	0.00	**3.18**
Sex ratio	–1.21	**–2.05**	–1.29	**–2.27**	–3.09	**–2.58**	–3.94	**–5.37**	–0.08	–1.30	0.00	0.67	–0.14	**–2.98**	–0.21	**–2.33**
Father is literate	0.76	**5.64**	0.76	**5.89**	–0.32	–1.30	0.11	0.71	–0.01	–0.44	0.00	–0.13	0.01	0.45	–0.01	–0.37
Mother is literate	0.54	**3.72**	0.49	**3.79**	0.00	–0.02	–0.16	–1.21	–0.01	–0.74	0.00	–0.76	0.01	1.21	0.03	1.23
Father has some primary schooling	0.23	**1.72**	0.33	**2.52**	–0.31	–1.25	–0.02	–0.10	–0.01	–0.52	0.00	–1.45	0.01	0.49	0.00	–0.06
Mother has some primary schooling	0.17	1.18	0.43	**3.38**	–0.29	–1.14	0.02	0.14	0.01	0.71	0.00	0.91	–0.01	–0.92	–0.01	–0.39
Father completed primary school	0.98	**3.06**	0.80	**2.95**	0.71	1.00	–0.50	**–1.73**	0.00	–0.09	dropped		0.07	**2.86**	0.00	0.02
Mother completed primary school	0.83	**2.13**	0.65	**1.99**	–0.89	–1.48	0.23	0.63	–0.03	–0.84	0.00	0.84	0.05	**1.66**	0.09	**1.81**
Father wore shoes	0.21	**1.79**	0.23	**2.06**	–0.70	**–3.24**	–0.08	–0.61	0.01	0.97	0.00	0.06	0.02	**1.69**	0.01	0.29
Mother wore shoes	0.04	0.36	0.39	**3.57**	0.20	0.96	0.16	1.30	0.02	**1.79**	0.00	0.86	0.02	**2.06**	0.05	**2.50**
Parents' landholdings	0.02	**3.07**	0.03	**4.14**	0.01	0.91	0.03	**3.44**	0.00	**4.74**	0.00	**2.76**	0.00	**2.32**	0.00	**2.14**
State dummies (Guerrero excluded)																
Hidalgo	0.73	**4.66**	1.43	**9.06**	1.46	**5.14**	0.55	**3.69**	0.15	**7.37**	0.63	0.54	0.03	**2.12**	0.15	**4.24**
Michoacan	0.09	0.53	1.61	**9.67**	1.04	**3.54**	0.65	**4.10**	0.03	**1.73**	0.76	0.57	0.12	**8.03**	0.30	**8.11**
Puebla	0.58	**3.70**	1.12	**7.02**	1.25	**4.33**	0.13	0.83	–0.01	–0.58	0.54	0.48	0.05	**3.57**	0.09	**2.57**
Queretaro	0.96	**4.90**	1.56	**8.04**	0.67	**2.03**	0.80	**4.21**	0.00	–0.03	dropped		0.04	**2.28**	0.05	1.20
San Luis Potosí	0.74	**4.68**	1.98	**12.37**	2.08	**7.05**	0.80	**5.02**	0.04	**2.20**	0.60	0.52	0.02	1.25	0.16	**4.29**
Veracruz	1.04	**6.98**	1.49	**9.91**	0.74	**2.75**	0.08	0.57	0.05	**3.00**	0.49	0.54	0.05	**3.77**	0.18	**5.23**
Constant	–225.59	**–45.77**	–265.20	**–53.41**	–15.80	**–1.81**	–50.46	**–10.10**					–1.82	**–4.60**	–2.82	**–3.63**
Selection term	3.09		3.06										0.20		0.30	
No. of observations	11,488		12,218		11,506		12,279		11,675		11,556		11,675		12,279	
F-statistic					**7**		**18.96**									
Prob >F					0.00		0.00									
R^2					0.01		0.03									
Chi^2	**3,275.26**		**4,765.59**						**275.38**		not computed		**349.43**		**331.63**	
Prob > chi^2	0.00		0.00						0.00		not computed		0.00		0.00	
Pseudo R^2	0.06		0.09						0.03		0.05		0.06		0.07	

t-statistics, F-statistics, and chi^2 statistics in bold indicate significance at 10 percent or better; marginal effects reported for probit estimates.

Table 13 Determinants of (husband–wife) differences in years of schooling, age at marriage, land ownership, and asset scores at marriage, Mexico

	Years of schooling (OLS with robust SEs)		Age at marriage (OLS with robust SEs)		Land ownership (ordered probit with robust SEs)		Asset score (OLS with robust SEs)	
	Coefficient	t	Coefficient	t	Coefficient	z	Coefficient	t
Year of marriage	–0.01	**–4.57**	–0.03	**–8.88**	–0.01	**–4.96**	0.00	**5.63**
Sex ratio	1.28	**2.34**	1.39	1.55	–0.20	–0.69	–0.06	**–3.02**
Differences in:								
Father is literate	0.25	**2.76**	–0.12	–0.76	0.01	0.11	0.00	–0.60
Mother is literate	0.31	**3.20**	0.10	0.58	–0.05	–1.00	0.00	0.77
Father has some primary schooling	0.10	1.05	0.09	0.56	0.01	0.10	0.00	0.83
Mother has some primary schooling	–0.06	–0.63	–0.16	–0.97	0.06	1.09	0.00	–1.22
Father completed primary school	0.42	**1.95**	0.21	0.56	–0.03	–0.25	0.01	1.29
Mother completed primary school	0.05	0.18	–0.26	–0.63	–0.21	–1.62	0.00	0.03
Father wore shoes	0.08	0.91	–0.22	–1.33	–0.06	–1.25	0.00	–1.18
Mother wore shoes	0.16	**1.70**	–0.26	–1.39	0.06	0.99	0.00	–0.54
Parents' landholdings	0.01	1.43	0.02	**2.31**	0.00	0.78	0.00	0.75
Constant	15.06	**4.39**	65.91	**9.25**			–0.56	**–5.44**
No. of observations	11,072		11,177		11,177		11,177	
F-statistic	11.28		8.19				3.34	
Prob >F	0.00		0.00				0.00	
R^2	0.01		0.01				0.00	
Chi^2					**36.93**			
Prob >chi^2					0.00			
Pseudo R^2					0.00			

t-statistics and chi^2 statistics in bold indicate significance at 10 percent or better; marginal effects reported for probit estimates.

How do time trends and parental background affect the assets brought to marriage by each spouse? Land ownership by the husband at the time of marriage has declined through time, possibly reflecting land scarcity and population pressure. Land ownership by the wife, which is minimal, has not been affected by secular trends. For both husbands and wives, parental landholdings are the most important determinants of land ownership at marriage, although the size of the marginal effects is small. In contrast, over time new husbands and wives seem to be bringing more durable assets to marriage. Husbands whose fathers have completed primary school and whose parents wore shoes during the husband's childhood bring more assets to the marriage. Wives whose mothers wore shoes and whose parents owned larger land areas bring more assets to their marriage. A larger supply of marriageable women seems to decrease the durable assets that both spouses bring to marriage, but the reason behind this is not clear.

Turning now to differences over time, we find that schooling, age at marriage, and land ownership differences have declined in more recent marriages (Table 13). However, asset differences have increased. Thus it seems that while gaps in human capital at marriage are decreasing, gender differences in durable asset ownership are increasing. Differences in parent literacy and schooling (in favor of the husband) are reflected in larger educational differences between the husband and wife. Parent landholding inequalities contribute to age differences at marriage. None of the differences in parental background variables are significant determinants of gender differences in asset scores. Note, however, that because our land ownership measure is only a dummy variable for whether the husband or wife owned land at the time of marriage, this measure is more imprecise relative to the other measures of physical and human capital. The sex ratio affects years of schooling and asset score differences in opposite ways: a larger supply of females of marriageable age increases the schooling gap between husbands and wives, while it reduces the gap between husband and wife asset scores. It is possible that, facing competition from other women, women leave school early in order to marry. As Mexico is not a brideprice or dowry society, if most assets that couples bring to marriage are their own, the main asset that would come from parents would be land. It is then possible that, facing a larger supply of marriageable females, prospective grooms do not feel they need to accumulate more assets in order to be worthy candidates in the marriage market.

Table 14 Determinants of years of schooling, age at marriage, and assets at marriage, Guatemala, first marriages

	Years of schooling (Tobit)				Age at marriage (OLS with robust SEs)				Value of assets at marriage (Tobit)			
	Husband		Wife		Husband		Wife		Husband		Wife	
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t
Year of marriage	0.09	**4.95**	0.09	**5.23**	–0.03	–0.91	0.08	**4.82**	310.33	**3.59**	47.37	**3.19**
Sex ratio	7.44	1.44	8.06	1.62	–7.36	–0.92	2.74	0.52	–23,718.53	–0.99	–11,101.02	**–2.70**
Indigenous ethnicity	–2.23	**–6.11**	–2.52	**–6.54**	–1.06	**–2.46**	–0.41	–1.05	–337.09	–0.20	–561.59	**–1.74**
Rural upbringing			–2.41	**–9.86**			–0.70	**–2.67**			–321.77	–1.59
Mother was single mother			0.58	1.32			–0.54	–1.19			–155.87	–0.42
No. of brothers			–0.05	–0.72			0.18	**2.64**			56.87	1.07
No. of sisters			0.00	–0.04			0.04	0.52			–118.01	**–2.16**
Mother worked for pay			–0.58	**–2.58**			–0.46	**–1.91**			–79.13	–0.43
Mother literate			2.17	**9.60**			0.09	0.38			611.11	**3.27**
Constant	–181.22	**–4.78**	–189.53	**–5.10**	84.36	1.37	–137.26	**–4.17**	–587,440.60	**–3.25**	–81,150.60	**–2.62**
No. of observations	976		976		976		976		976		976	
F-statistic					2.37		5.31					
Prob >F					0.07		0.00					
R^2					0.01		0.04					
Chi^2	63.38		356.58						16.42		57.45	
Prob >chi^2	0.00		0.00						0.00		0.00	
Pseudo R^2	0.01		0.07						0.00		0.01	

t-statistics in bold indicate significance at 10 percent or better.

Guatemala. Levels regressions are presented in Table 14. Here age at marriage (or, more accurately, age at first union) is increasing over time for wives but not husbands. Years of schooling and assets at marriage have each increased over time for both husbands and wives in the slums of Guatemala City. A higher female-to-male marriageable age population ratio at the time of the wedding decreases the assets wives bring to marriage, perhaps because, facing competition, women who are poor migrants from the countryside more readily enter a consensual union. Similar to Mexico, it is likely that the assets spouses bring to marriage are their own, as brideprice and dowry are not common, and land transfers would not be relevant to most couples as the sample is entirely urban. Indigenous ethnicity is associated with low levels of education for both sexes, younger marriage age for men, and fewer assets brought to marriage by women.

Family background characteristics affect the timing and the human and physical capital brought to marriage by women. Having been raised in a rural area and migrating to the city as an adult is associated with younger age and less education at marriage for women. Historically, rural areas in Guatemala have been characterized by scarcity of infrastructure and services, particularly regarding education and health (Brush et al. 2002). Having additional brothers slightly increases a woman's marriage age, while having additional sisters reduces the value of assets a woman brings to her marriage, possibly because of competition for parental resources. If a woman's mother worked for pay (an indicator of economic need in her natal household), her marriage age and level of education are reduced. A literate mother has opposite effects, increasing a woman's years of schooling and the value of assets she brings to marriage.

Spouse difference regression results are presented in Table 15. As background data are not available for husbands, family-of-origin difference variables could not be constructed. Therefore, two versions of the difference results are presented: one that includes only year of marriage, sex ratio, and ethnicity, and a second that also includes levels of family background characteristics for women. In the first specification, spouse age differences are decreasing over time, but male advantage in the value of assets brought to marriage is rising. Indigenous ethnicity is associated with better education of the husband relative to his wife. In the second version of the regressions it is found that if a woman was raised in a rural area her husband will be relatively

Table 15 Determinants of (husband–wife) differences in years of schooling, age at marriage, and assets at marriage, Guatemala, first marriages (OLS with robust standard errors)

	Years of schooling				Age at marriage				Value of assets at marriage			
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t
Year of marriage	–0.02	–1.10	–0.01	**–3.54**	–0.10	**–3.68**	–0.01	–0.47	134.66	**2.79**	146.06	**3.05**
Sex ratio	–0.06	–0.01	–9.07	–1.18	–9.17	–1.20	0.55	0.11	–12,030.85	–0.74	–8,569.73	–0.54
Indigenous ethnicity	1.51	**4.05**	–0.94	**–1.93**	–0.44	–1.03	0.78	**1.95**	314.44	0.27	–39.64	–0.03
Rural upbringing			0.88	**2.43**			1.13	**4.56**			1,171.24	1.31
Mother was single mother			–0.01	–0.02			–0.86	**–2.53**			–987.86	–1.08
No. of brothers			–0.01	–0.11			0.06	0.90			525.09	**1.89**
No. of sisters			–0.18	**–1.96**			–0.01	–0.21			99.04	0.46
Mother worked for pay			0.18	0.58			0.46	**2.03**			356.19	0.45
Mother literate			–0.56	**–1.71**			–0.73	**–3.19**			658.89	0.84
Constant	40.93	1.07	211.21	**3.61**	221.43	**3.74**	17.19	0.45	–249,076.30	–2.60	–277,950.70	**–2.91**
No. of observations	976		976		976		976		976		976	
F-statistic	6.20		2.51		4.80		7.67		2.69		1.94	
Prob >F	0.00		0.01		0.00		0.00		0.05		0.04	
R^2	0.02		0.03		0.02		0.06		0.01		0.02	

t-statistics in bold indicate significance at 10 percent or better.

older and better educated. If her mother was a single mother, she is likely to be closer in age to her husband. Women with more brothers bring fewer assets to marriage relative to their husbands; those with more sisters marry men with similar education levels to themselves. Women whose mothers worked for pay marry men who are slightly older, while those whose mothers are literate are closer in age and educational attainment to their spouses. The population sex ratio variable does not have any effect on spouse differences.

SUMMARY AND CONCLUSIONS

Table 16 presents a summary of trends in schooling, age, and assets at marriage, based on the regression coefficients on the year of marriage. Human capital at marriage has been increasing for both men and women in the majority of our study countries. In all six countries, years of schooling at marriage have increased for husbands and wives.

Consistent with rising educational attainment, age at marriage is increasing for husbands and wives in the majority of countries; that is, men and women are marrying at later ages in more recent marriages. This upward trend can be observed for husbands in five out of six countries. Age at marriage for men is decreasing in Ethiopia, although the latter could reflect measurement error in the age variable. Women are also marrying at later ages in five out of six countries. In Ethiopia, age at marriage is decreasing, possibly reflecting both measurement error and isolation of rural villages from outside forces. In spite of considerable political turmoil over the last decades, local traditions regarding marriage and inheritance have remained relatively untouched, given the lack of roads and the relative isolation of the countryside.[22]

There is no clear trend regarding land ownership at marriage, although grooms seem to be bringing more physical assets to marriage in four out of six countries. In the two countries where landholding information is not aggregated with total assets, husbands' land ownership at marriage remains constant in one case (Philippines) and declines in the other (Mexico). Land ownership at marriage by women is decreasing through time in the Philippines, and remains constant, though very low (less than 1 percent of sample wives) in Mexico. Asset values of husbands increase through time in four coun-

Table 16 Trends by marriage year in age, human capital, and assets at marriage

	Husband	Wife	Difference (Husband–Wife)
Asia			
Bangladesh			
Years of schooling	Increasing	Increasing	Decreasing
Age at marriage	Increasing	Increasing	Decreasing
Value of assets + transfers at marriage (1996 taka)	Increasing	Decreasing	Increasing
Philippines			
Years of schooling	Increasing	Increasing	Constant
Age at marriage	Increasing	Increasing	Constant[a]
Land area at marriage	Constant	Decreasing	Increasing
Value of nonland assets (1989 peso)	Constant	Constant	Constant
Africa			
Ethiopia			
Years of schooling	Increasing	Increasing	Increasing
Age at marriage	Decreasing	Decreasing	Decreasing
Value of assets at marriage (1997 birr)	Constant	Constant	Constant
South Africa			
Years of schooling	Increasing	Increasing	Decreasing
Age at marriage	Increasing	Increasing	Constant
Count of assets at marriage	Increasing	Increasing	Constant
Value of transfers from this family at marriage (1998 rand)	Decreasing	Decreasing	Decreasing
Latin America			
Mexico			
Years of schooling	Increasing	Increasing	Decreasing
Age at marriage	Increasing	Increasing	Decreasing
Owned land at marriage (1 if yes)	Decreasing	Constant	Decreasing
Asset score	Increasing	Increasing	Increasing
Guatemala[b]			
Years of schooling	Increasing	Increasing	Constant
Age at marriage	Constant	Increasing	Decreasing
Value of assets at marriage (1999 quetzal)	Increasing	Increasing	Increasing

[a] "Constant" implies that the t-statistic on the marriage year variable is not significant at 10 percent or better, regardless of the magnitude of the coefficient.

[b] Guatemala difference results are for the first specification reported in Table 15, without female family background variables.

tries and remain constant in Ethiopia and the Philippines. Asset values of wives increase in three countries (Guatemala, Mexico, and South Africa), remain constant in Ethiopia and the Philippines, and decline in Bangladesh. (In the two countries for which we have

data on marriage payments, trends have been in opposite directions: payments are increasing for husbands and decreasing for wives in Bangladesh, and decreasing for both in South Africa.)

We now turn to how differences in human capital, age, and assets at marriage between husband and wife have changed through time. In three out of six countries, husband–wife gaps in schooling attainment at marriage have decreased—pointing to an equalization of human capital at marriage. The exceptions are Guatemala and the Philippines, where the difference in years of schooling has not changed over time, and Ethiopia, where the difference is increasing. In the Philippines, there is no gender gap in schooling in this generation (see Table 1), while in urban Guatemala, women are likely to be better educated than their rural counterparts. The disturbing trend in Ethiopia is consistent with the leveling off of enrollment rates for girls and the persistence of gender gaps in education in sub-Saharan Africa, a consequence of lack of improvement in public educational facilities and high opportunity costs of education for girls.[23]

In line with the closing of the education gap, in four out of six countries age differences between husbands and wives have decreased—a move toward increasing equality, given the possibility that seniority and experience may give husbands a bargaining advantage over their wives. The two countries in which the difference in age at marriage has not decreased are the Philippines and South Africa, the two countries where women's age at marriage is the highest among our study countries.

The distribution of assets at marriage continues to favor husbands. In three out of six countries, the husband–wife asset difference has not changed through time—and therefore continues to favor husbands—and has even increased in the two Latin American countries. Finally, transfers at marriage are increasingly favoring men in Bangladesh, while the gap in transfers at marriage is decreasing in South Africa.

What do these trends imply for the distribution of power within marriage? The reduction of husband–wife gaps in age and schooling indicates a potential improvement in the balance of power within the family, but asset ownership continues to favor husbands. These findings from our data mirror changes in investment in human capital and asset ownership worldwide (Quisumbing and Meinzen-Dick 2001). In general, investment in women's human capital has improved markedly in the last 25 years: Life ex-

pectancy has increased 20 percent faster for females than for males, fertility rates have declined, and gaps in educational attainment have begun to close. However, gender gaps in physical assets and resources that women can command through available legal means continue to persist. In large part this is because of social and legal mechanisms that do not give women equal rights to own and inherit property, particularly land (Crowley 2001; Gopal 2001). Persistent differences in assets in favor of men have important implications for household well-being and the welfare of future generations, given recent findings that increasing women's status and control of assets has favorable effects on child nutrition and education (Hallman 2000; Quisumbing and Maluccio 2002; Smith et al. forthcoming).

These trends affect not only the distribution of power within marriage, but also the role that marriage plays in the transition to adulthood. Rising education levels, particularly for women, increase the role of individual choice rather than parental choice of a spouse or partner. Indeed, the increasing importance of personal rather than parental characteristics in characterizing matches in the marriage market points to increased individual choice. At the same time, globalizing and modernizing economies raise the expectations of young people beyond traditional roles. Young people delay marriage in the hope of getting payoffs for their educational investments in the form of secure and well-paying jobs (Caldwell et al. 1998). However, structural adjustment programs have altered the employment structure of many developing economies; with the contraction of the public sector there are now fewer government and other types of jobs historically considered "good." The transition to paid work, especially for adult males, often precedes the transition to marriage and adulthood; rising youth unemployment is associated with feelings of frustration with the inability to move on in life. If marriage marks the transition to adulthood in most societies, this transition is being delayed, either because of the desire to stay in school or capture returns to schooling through employment, or because of the inability to find gainful employment. The impact of this delayed transition on the institution of marriage itself deserves further investigation.

Appendix Table 1 Description of data sets

Country	Description of data	Country-level descriptors	
Bangladesh	Project title: Commercial Vegetable and Polyculture Fish Production in Bangladesh: Their Impacts on Income, Household Resource Allocation and Nutrition	**% urban**[a]	23.9
	Survey coverage and dates: 955 rural households; four rounds of data collection from June 1996 to September 1997.	**% literate**[b]	
		Female:	23.9
	Study sites: Data were collected as part of an impact evaluation of vegetable and fish pond technologies being disseminated in rural areas through NGOs. The survey sites were areas where new Consultative Group on International Agricultural Research (CGIAR) technologies had been introduced but their impact not yet evaluated. CGIAR technology is prevalent in rural Bangladesh. These areas are in no way unusual relative to others in rural Bangladesh.	Male:	51.7
		Estimated earned income[c]	
		Female:	1,076[d]
		Male:	1,866[d]
	Sampling design and notes: In each of the three survey sites (47 villages total) three types of households were identified: A households were NGO member agricultural technology–adopting households in villages where the technology has been disseminated (A villages); B households were NGO member likely agricultural technology–adopting households in villages where the technology has not been introduced (B villages); and C households were a sampling of all other households in both types of villages (C villages). The general sampling approach involved a multistage design using unique sampling methodologies in each site such that randomly selected A, B, and C villages were followed by randomly selected A, B, and C households.		
	Collaborators: Data Analysis and Technical Assistance, Dhaka, Bangladesh; BIDS; INFS		
Philippines	Project title: Gender Differences in Schooling and Land Inheritance	**% urban**[a]	57.7
	Survey coverage and dates: 344 rural households, 1989		
	Study sites: The five survey sites are rice-growing villages that were surveyed by the International Rice Research Institute for a study on the differential impact of modern rice technology (1985–86). These are typical rice-growing villages that span the range of environmental conditions from fully irrigated to rainfed.	**% literate**[b]	
		Female:	94.9
		Male:	95.3
	Sampling design and notes: The data come from a retrospective survey conducted in 1989 covering 344 rural households.	**Estimated earned income**[c]	
		Female:	2,684
	Collaborators: Tokyo Metropolitan University; International Rice Research Institute	Male:	4,910

continued

Appendix Table 1 *continued*

Country	Description of data	Country-level descriptors	
Ethiopia	Project title: Gender and Intrahousehold Resource Allocation	**% urban**[a]	17.2
	Survey coverage and dates: 1,399 rural households; Round 4 data were collected May–December 1997.	**% literate**[b]	
	Survey sites: This survey, the 1997 Ethiopian Rural Household Survey (ERHS), added a fourth round to a panel collected by IFPRI, the Centre for the Study of African Economies, and Addis Ababa University in 1994–95. Six of the 15 village sites were originally surveyed by IFPRI in 1989 for the Ethiopia Famine Project. IFPRI added three villages to the sample in 1994 for a study assessing vulnerability to droughts. Other villages represent different ecological zones. While not nationally representative, the sample is representative of the country's agroecological zones.	Female: Male: **Estimated earned income**[c] Female: Male:	31.8 42.8 414[d] 844[d]
	Sampling design and notes: The original sample size of 1,500 households was decided jointly by IFPRI and CSAE/AAU. The sample was to be allocated based on the *wereda* (the level of administration next to region) population of each site with a minimum of 60 households per site.		
	Collaborators: Centre for the Study of African Economies; Addis Ababa University		
South Africa	Project title: KwaZulu-Natal Income Dynamics Study	**% urban**[a]	50.1
	Survey coverage and dates: 1,200 rural and urban households; Round 1, August–November 1993; Round 2, March–June 1998.	**% literate**[b]	
	Survey sites: This was a resurvey of households in the KwaZulu-Natal area that were part of the 1993 national survey of South Africa. IFPRI has access to the 1993 data set. KwaZulu-Natal is 43 percent urban and has a slightly higher proportion of inhabitants of Indian descent than other provinces. Its poverty, education, unemployment, and infrastructure indicators are just slightly worse than the country average, but the majority of these differences are not statistically significant. It has higher-than-average HIV/AIDS prevalence (South Africa Department of Social Development 2001).	Female: Male: **Estimated earned income**[c] Female: Male:	84.2 85.7 5,473[d] 12,452[d]
	Sampling design and notes: The sampling design was a two-stage self-weighting procedure. In the first stage, clusters were chosen proportional to population size from census enumeration areas or approximate equivalents where not available. In the second stage, all households in each chosen cluster were enumerated and then a random sample of them selected. In 1998 only African and Indian households were targeted. Sample is representative at the province level.		
	Collaborators: University of Natal-Durban; University of Wisconsin		

continued

Appendix Table 1 *continued*

Country	Description of data	Country-level descriptors	
Mexico	Project title: Evaluation of the National Program for Education, Health, and Nutrition (Programa Nacional de Educación, Salud y Alimentación [PROGRESA])	**% urban**[a]	74.2
	Survey coverage and dates: 24,000 households in rural Mexico; census survey in November 1997 (ENCASEH) to select beneficiary households; evaluation surveys (Encuesta Evaluación de los Hogares or ENCEL) in March 1998 (ENCEL 98M, prior to distribution of benefits), October–November 1998 (ENCEL 98O), June–July 1999 (ENCEL 99M), and November 1999 (ENCEL 99N). The module on family background and assets at marriage was fielded as a part of the June–July 1999 round (ENCEL 99M).	**% literate**[b] Female: Male: **Estimated earned income**[c] Female: Male:	 89.1 93.1 4,486 12,184
	Survey sites: 506 localities in the seven states of Guerrero, Hidalgo, Michoacan, Puebla, Queretaro, San Luis Potosí, and Veracruz. Of the 506 localities, 320 localities were assigned to the treatment group (T=1) and 186 localities were assigned as controls (T=0).		
	Sampling design and notes: The 320 treatment localities were randomly selected using probabilities proportional to size from a universe of 4,546 localities that were covered by Phase II of the program in the seven states mentioned above. Using the same method, the 186 control localities were selected from a universe of 1,850 localities in these seven states that were to be covered by PROGRESA in later phases. The coverage of the program in its final phase constitutes around 40 percent of all rural families and one-ninth of all families in Mexico.		
	Collaborators: Programa Nacional de Educación, Salud y Alimentación, Mexico; University of Pennsylvania; Yale University; University of California		
Guatemala	Project title: Strengthening and Evaluation of the *Hogares Comunitarios* Program in Guatemala City	**% urban**[a]	39.4
	Survey coverage and dates: 1,363 urban households in Guatemala City surveyed in 1999.	**% literate**[b]	
	Survey site: Site was one of three areas where *Hogares Comunitarios* was operating in Guatemala City at the time of the survey. Characteristics of this area did not differ from the other two program areas. All program areas were among the lower half of the urban socioeconomic strata. The study site is representative of urban poor areas of the country.	Female: Male: **Estimated earned income**[c]	60.5 75.6
	Sampling design and notes: The survey was designed to provide a qualitative and quantitative assessment of the operations and impact of the *Hogares Comunitarios* program, a daycare program under the auspices of the office of the First Lady of Guatemala. Two surveys were carried out: a random sample of 1,340 households with preschool children; and an impact evaluation sample of 550 households with preschool children divided into participating and control households. The current paper uses the random sample data.	Female: Male:	1,691[d] 5,622[d]
	Collaborators: *Hogares Comunitarios* program staff		

[a] Source: United Nations Development Programme (UNDP) 2001. Rates as of 1999. [b] Source: UNDP 2001. Age 15 and above in 1999. [c] Source: UNDP 2001. Figures are PPP US$ (purchasing power parity; see Technical Note 1 in UNDP 2001). Note: Because of the lack of gender-disaggregated income data, female and male earned income are crudely estimated on the basis of data on the ratio of the female nonagricultural wage to the male nonagricultural wage, the female and male shares of the economically active population, the total female and male population, and GDP per capita (PPP US$) (see Technical Note 1 in UNDP 2001). Unless otherwise specified, estimates are based on data for the latest year available during 1994–99. [d] Source: UNDP 2001. Note: No wage data available. For purposes of calculating the estimated female and male earned income, an estimate of 75 percent, the unweighted average for the countries with available data, was used for the ratio of female nonagricultural wage to male nonagricultural wage.

Appendix Table 2 Determinants of age at marriage, alternative specifications with year of birth and year of marriage (OLS with robust standard errors)

	Husband's age at marriage				Wife's age at marriage			
	Coefficient	t	Coefficient	t	Coefficient	t	Coefficient	t
Bangladesh								
Year of birth			–0.16	**–7.98**			0.01	1.05
Year of marriage	0.09	**4.10**			0.12	**10.43**		
Sex ratio	–3.94	–1.61	–8.24	**–3.46**	–3.12	**–1.96**	–5.55	**–3.20**
Own birth order	–0.20	**–1.87**	–0.03	–0.31	–0.08	–1.30	0.00	–0.01
No. of brothers	–0.03	–0.22	0.19	1.36	–0.03	–0.47	–0.11	–1.31
No. of sisters	–0.08	–0.56	0.12	0.91	0.12	1.40	0.16	**1.80**
Value of parents' land	0.00	0.60	0.00	**–2.23**	0.00	**–2.31**	0.00	**–3.07**
Father's schooling	–0.24	–1.58	–0.18	–1.20	0.18	**1.70**	0.25	**2.20**
Mother's schooling	–0.15	–0.45	0.18	0.66	–0.41	**–2.69**	–0.23	–1.48
Site 2	1.37	**2.66**	0.85	**1.72**	0.67	**2.16**	0.37	1.15
Site 3	0.32	0.65	0.38	0.79	–0.11	–0.35	–0.12	–0.33
Constant	–142.94	**–3.41**	347.72	**8.58**	–217.81	**–9.57**	–4.80	–0.19
No. of observations	779		779		786		786	
F-statistic	3.09		7.59		14.54		3.87	
Prob >F	0.00		0.00		0.00		0.00	
R^2	0.05		0.13		0.17		0.04	
Philippines								
Year of birth			–0.10	**–3.86**			–0.10	**–3.51**
Year of marriage	0.12	**3.79**			0.08	**2.51**		
Sex ratio	5.32	0.76	9.45	1.35	8.40	1.24	10.25	1.55
Father's schooling	–0.09	–0.72	0.04	0.37	–0.13	–1.12	–0.06	–0.54
Mother's schooling	–0.49	**–3.03**	–0.10	–0.76	–0.20	–1.32	0.11	0.76
Father's land	0.17	**2.29**	0.12	1.37	0.35	**2.02**	0.12	0.78
Mother's land	0.05	0.44	–0.08	–0.46	0.03	0.15	–0.13	–0.59
Village dummies								
P2 dummy	0.00	0.00	–0.45	–0.34	0.70	0.63	0.04	0.03
P3 dummy	0.38	0.34	0.25	0.23	1.80	1.57	1.37	1.27
CL1 dummy	–2.97	**–3.10**	–2.32	**–2.41**	–1.40	–1.43	–1.18	–1.22
CL2 dummy	–3.69	**–3.68**	–3.18	**–3.19**	–1.21	–1.27	–1.18	–1.22
Constant	–214.95	**–3.49**	210.90	**4.09**	–139.10	**–2.26**	208.16	**3.73**
No. of observations	259		259		259		259	
F-statistic	**4.50**		**4.50**		**2.88**		**2.87**	
Prob >F	0.00		0.00		0.00		0.00	
R^2	0.18		0.18		0.11		0.13	
Ethiopia								
Year of birth			–0.71	**–42.49**			–0.66	**–29.23**
Year of marriage	–0.34	**–4.42**			–0.18	**–2.74**		
Sex ratio	53.05	**2.89**	173.44	**26.35**	51.40	**3.42**	170.51	**23.28**
Father's schooling	1.13	0.72	0.55	0.79	0.08	0.11	0.79	1.44
Mother's schooling	1.12	0.42	1.40	0.90	–0.01	–0.01	–0.48	–0.69
Parents' land	0.01	**4.74**	0.00	0.31	0.01	0.13	0.00	0.10
No. of brothers	–0.51	**–3.63**	–0.04	–0.52	0.01	0.10	0.13	**1.78**
No. of sisters	–0.18	–1.00	–0.01	–0.11	–0.14	–0.99	0.06	0.74
Region (Tigray excluded)								
Amhara	–2.55	**–2.13**	0.20	0.42	–1.23	–1.19	0.36	0.73
Oromo	–4.48	**–4.01**	–1.07	**–2.48**	–1.64	**–1.75**	–0.47	–1.07
South-Central	–2.05	**–1.84**	0.11	0.26	–0.18	–0.20	0.49	1.10
Constant	626.59	**4.88**	1,163.44	**46.70**	305.47	**2.73**	1,064.71	**30.12**
No. of observations	554		554		554		554	
F-statistic	**22.7**		**321.1**		**2.37**		**90.77**	
Prob >F	0.00		0.00		0.01		0.00	
R^2	0.16		0.82		0.03		0.72	

continued

Appendix Table 2 *continued*

	Husband's age at marriage				Wife's age at marriage			
	Coefficient	**t**	**Coefficient**	**t**	**Coefficient**	**t**	**Coefficient**	**t**
South Africa								
Year of birth			–0.31	**–7.12**			–0.18	**–4.35**
Year of marriage	0.33	**10.28**			0.35	**11.73**		
Sex ratio	0.61	0.07	21.16	**1.99**	8.07	0.98	26.51	**2.45**
African race	1.42	**1.66**	1.66	**1.75**	0.28	0.35	0.78	0.85
Urban resident	–0.85	–0.97	–1.66	**–1.70**	–0.20	–0.25	–1.21	–1.29
Mother alive at wedding	–4.50	**–4.23**	–3.32	**–3.57**	–1.85	**–2.15**	–2.95	**–2.91**
Father alive at wedding	–1.63	**–2.56**	–2.81	**–4.14**	–0.66	–1.13	–1.14	**–1.65**
Mother any education	–1.47	**–2.08**	0.95	1.22	–0.99	–1.35	0.68	0.89
Father any education	–1.34	**–1.89**	0.26	0.35	–1.69	**–2.45**	–0.75	–1.02
Constant	–624.85	**–9.86**	616.97	**7.17**	–679.10	**–11.61**	352.95	**4.25**
No. of observations	492		492		492		492	
F-statistic	20.42		13.72		19.48		5.82	
Prob >F	0.00		0.00		0.00		0.00	
R^2	0.30		0.28		0.30		0.12	
Mexico								
Year of birth			–0.18	**–37.40**			–0.05	**–16.52**
Year of marriage	0.02	**4.70**			0.04	**14.10**		
Sex ratio	–3.09	**–2.58**	2.83	**2.36**	–3.94	**–5.37**	–1.73	**–2.30**
Father is literate	–0.32	–1.30	0.33	1.51	0.11	0.71	0.26	**1.75**
Mother is literate	0.00	–0.02	0.46	**2.00**	–0.16	–1.21	0.00	0.02
Father has some primary schooling	–0.31	–1.25	–0.04	–0.16	–0.02	–0.10	0.16	1.05
Mother has some primary schooling	–0.29	–1.14	0.07	0.32	0.02	0.14	0.20	1.50
Father completed primary school	0.71	1.00	0.97	1.51	–0.50	**–1.73**	–0.19	–0.67
Mother completed primary school	–0.89	–1.48	–0.82	–1.50	0.23	0.63	0.46	1.26
Father wore shoes	–0.70	**–3.24**	–0.38	**–1.90**	–0.08	–0.61	0.06	0.46
Mother wore shoes	0.20	0.96	0.69	**3.55**	0.16	1.30	0.36	**2.85**
Parents' landholdings	0.01	0.91	0.00	–0.26	0.03	**3.44**	0.02	**2.40**
State dummies (Guerrero excluded)								
Hidalgo	1.46	**5.14**	0.95	**3.77**	0.55	**3.69**	0.38	**2.61**
Michoacan	1.04	**3.54**	0.07	0.26	0.65	**4.10**	0.22	1.44
Puebla	1.25	**4.33**	0.78	**3.02**	0.13	0.83	–0.02	–0.13
Queretaro	0.67	**2.03**	0.12	0.40	0.80	**4.21**	0.54	**2.86**
San Luis Potosí	2.08	**7.05**	0.58	**2.21**	0.80	**5.02**	0.23	1.52
Veracruz	0.74	**2.75**	0.39	1.64	0.08	0.57	–0.04	–0.32
Constant	–15.80	**–1.81**	372.75	**39.60**	–50.46	**–10.10**	119.71	**20.22**
No. of observations	11,506		11,506		12,279		12,279	
F-statistic	**7**		**88.16**		**18.96**		**25.45**	
Prob >F	0.00		0.00		0.00		0.00	
R^2	0.01		0.17		0.03		0.04	
Guatemala								
Year of birth			–0.41	**–13.13**			–0.24	**–9.58**
Year of marriage	–0.03	–0.91			0.08	**4.82**		
Sex ratio	–7.36	–0.92	–24.05	**–2.99**	2.74	0.52	–12.24	**–1.83**
Indigenous ethnicity	–1.06	**–2.46**	–1.04	**–2.74**	–0.41	–1.05	–0.40	–1.08
Rural upbringing					–0.70	**–2.67**	–0.69	**–2.86**
Mother was single mother					–0.54	–1.19	–0.67	**–1.72**
No. of brothers					0.18	**2.64**	0.07	1.06
No. of sisters					0.04	0.52	–0.02	–0.27
Mother worked for pay					–0.46	**–1.91**	–0.49	**–2.22**
Mother literate					0.09	0.38	0.44	**1.96**
Constant	84.36	1.37	853.23	**12.83**	137.26	**–4.17**	498.22	**9.35**
No. of observations	976		976		976		976	
F-statistic	2.37		63.40		5.31		13.86	
Prob >F	0.07		0.00		0.00		0.00	
R^2	0.01		0.43		0.04		0.20	

t-statistics and F-statistics in bold indicate significance at 10 percent or better.

Notes

1 In this paper, we use the terms "union" and "marriage" interchangeably, although in most of the countries studied, the data refer to actual marriages. The exception is urban Guatemala, which has a high percentage of consensual unions (40 percent of unions in our sample).

2 Quisumbing directed the overall research program at IFPRI while Hallman worked intensively on the Bangladesh and Guatemala studies. The modules on assets at marriage were similar to those used in the Philippine study (Quisumbing 1994), but were adapted to specific country conditions.

3 For a discussion of tests of the collective versus the unitary model of the household, see Haddad, Hoddinott, and Alderman 1997; Quisumbing and Maluccio 2002; and Thomas and Chen 1994.

4 Appendix Table 2 presents estimates of the age-at-marriage regressions using two alternative specifications: (1) year of birth and (2) year of marriage. Birth year is consistently negative in all the regressions, which is contrary to expectations and the demographic literature on our study countries. We conclude that measurement error is severe in the birth-year variable and thus use year at marriage in our regressions.

5 As discussed previously, the IFPRI study countries were also chosen to capture geographic and cultural variation, as well as to focus on specific policy issues related to gender.

6 This section draws from Quisumbing and de la Brière (2000).

7 This phenomenon is also widely reported in India. See Rao (1997) and Bloch and Rao (2002).

8 Respondents were predominantly male. Wives usually answered the fertility and child schooling questions, and questions on proposed bequests were answered jointly by husband and wife.

9 Nonland assets are valued in 1989 pesos. Present values were used for assets whose present values were declared by the respondents. Asset values for which only values at bestowal were available were inflated to 1989 values using the farm-gate rice price index for farm animals, farm assets, and on-farm residential house and lot; or a region-specific consumer price index (CPI) for readily tradeable consumer durables. Because mobility and fungibility of farm assets is limited, and the value of farm property is linked to returns to rice production, the farm-gate rice price index may be a better adjustment factor than the CPI.

10 The 1997 ERHS was undertaken by the Department of Economics, Addis Ababa University (AAU), in collaboration with IFPRI and the Centre for the Study of African Economies (CSAE), Oxford University. The survey built on a panel survey conducted by AAU and CSAE in 1994/95, but the information collected in these earlier rounds is not used in the present analysis.

11 The number of observations varies across regressions because of missing information for some unions. We chose to use the greatest number of valid observations to preserve sample size. For a more thorough analysis of marriage patterns in Ethiopia, see Fafchamps and Quisumbing (2003a, 2003b).

12 Before the 1980s in rural Ethiopia, people lived on their own land and in most cases households were scattered. Under such conditions, the government felt that it was very difficult to provide social services such as schooling, health facilities, and so forth to rural households, so it embarked on the villagization program in the 1980s, which involved relocating scattered households to selected locations to form villages. The number of households in each village could vary from location to location. The program was not voluntary at all. Families were forced to abandon their homes and move to selected locations for village formation and build their houses according to the design provided by the government (Yisehac Yohannes, personal communication, 13 November 2003).

13 The first South African national household survey, the Project for Statistics on Living Standards and Development (PSLSD), was undertaken in the last half of

1993 (PSLSD 1994). KwaZulu-Natal Province, on the east coast, was resurveyed in March–June 1998 for KIDS (May et al. 2000).

14 Patricia Muñiz, Ana Núñez, and Gabriela Vázquez were instrumental in designing and fielding the pilot survey among the *promotoras*.

15 Note also that because this module was administered in the third round of the evaluation surveys, sample attrition implies that we do not have this information for all households originally included in the baseline. Because we wanted to examine the effects of bargaining power variables on outcomes over time, and since we are interested in the bargaining power of husband and wife, the analysis in this paper is restricted to intact couples who were interviewed in all three survey rounds (ENCEL 98O, 98M, and 99M).

16 The assets included in the asset score were: blender, gas stove, traditional stove, television set, jewelry, clock, agricultural equipment, chicken, pig, goat, and cow.

17 The asset score of Morris et al. (1999) is slightly different: the weight is multiplied by the number of the units of asset g owned by the household rather than the indicator that the household owns the asset. We used the indicator because the survey module did not ask how many of the assets each spouse owned, but only whether or not they owned at least one of each item. We also multiply our asset score by 100.

18 See Ruel et al. (2002) for a more detailed description of the study and Hallman et al. (2002) for a related paper on women's work and childcare arrangements.

19 The value of premarital assets and transfers received at the time of marriage are aggregated here because in South Asia they may constitute the same types of goods and because marriage transfer payments often come not only from the spouse's family but from one's own family as well (see for instance Edlund 1997, 2000; Gardner 1995). In an earlier version of the paper with regressions for premarital assets and transfers run separately, it was found that premarital asset holdings of men rise with later marriage dates while women's show no change over

time; on the other hand marriage transfer payments to men increase with time, while transfers to women fall over time—a confirmation of the trend toward dowry payments found in the literature cited above.

20 According to the National Family Fertility Survey, the mean age of women who married before 1966 was 14.9 years, compared to 15.5 years for those who married in 1966–70, 15.8 years for those who married in 1971–75, and 17.1 years for those who married after 1976.

21 Fafchamps and Quisumbing (2003b), using a different specification, find that the value of grooms' assets at marriage does not increase through time, but for first marriages, the value of brides' assets at marriage posts a secular increase. There is no secular trend in the value of brides' assets at marriage for subsequent marriages.

22 This is not to say that local traditions have not changed at all—they have, especially in areas influenced by urbanization and labor migration. In our opinion, however, they have changed much less than in African countries previously colonized by Europeans.

23 Although the gender gap in schooling worldwide has decreased over time, girls' primary school enrollment rates have leveled off in sub-Saharan Africa at around 54 percent. Absolute levels of female enrollment and schooling remain lower in sub-Saharan Africa than in other developing regions, with female secondary school enrollment rates of 14 percent in 1995 (World Bank 2001).

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