Dowry:
Household Responses to Expected Marriage Payments

S Anukriti* Sungoh Kwon† Nishith Prakash‡

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Abstract

Dowry is a ubiquitous feature of South Asian marriage markets. However, empirical research on dowry has been limited by the lack of data. We utilize retrospective information on gifts exchanged at the time of marriage for 39,544 marriages during 1960-2008 to describe dowry trends in contemporary rural India. Average real net dowry has been remarkably stable over time; although there is considerable heterogeneity across castes, religions, and states. Additionally, we examine the impact of dowry expectations on households' financial and childbearing decisions and on investments in children. Parents increase savings and fathers work more in anticipation of future marriage payments for their daughters. However, dowry has no impact on fertility and sex-selection. The effects on expenditure on children's education are inconclusive.

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*Department of Economics, Boston College. anukriti@bc.edu.

†Department of Economics, University of Connecticut. sungoh.kwon@uconn.edu.

‡Department of Economics & Human Rights Institute, University of Connecticut, IZA, HiCN, & CReAM. nishith.prakash@uconn.edu.

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1 Introduction

Marriage matters a great deal for individuals' well-being everywhere, but especially in countries, such as India, where it is nearly universal. Historically, marriage has been an arranged, economic agreement between the bride, the groom, and their families, and it continues to be so in many contemporary societies.[1] A key feature of these marriages is bride-to-groom (*dowry*) or groom-to-bride (*brideprice*) payments at the time of marriage. These payments can be large enough to affect the welfare of households and a society's distribution of wealth. Like any custom or cultural norm, in the very long-run, societies have witnessed complete disappearance of marriage payments (e.g., in Europe) as well as transformations from one type to another (e.g., in Bangladesh and China). Nevertheless, in most contexts, the expected direction of marriage payments is quite stable over an individual's lifetime, even if the exact amount is unknown prior to and is negotiable at the time of marriage. In this paper, we seek to answer the following question: how do families and individuals respond to these expected marriage payments?

We focus on dowry payments in contemporary India. Despite being illegal since 1961, dowry is almost universal in India and imposes a substantial burden on girls' families at the time of marriage, often amounting to several years of household income. Although birth of a child imposes some costs on parents in any context, dowry imposes an additional shock—that differs by child gender—to parents' expected future income. After the child gender is realized, parents of a son experience an increase in their expected permanent income, while those of a daughter experience a decline. We are interested in understanding the effect of this shock on parents' current financial and childbearing decisions and on child investments after the birth of a girl versus a boy.

A major challenge to estimating the causal effect of expected dowry payments is the likely endogeneity of the dowry variable. We define expected dowry as the average net dowry paid by brides or received by grooms from the same caste and state as the child and who married during the year of the child's birth or the prior four years. While our dowry variable is pre-determined, it is not exogenous if it is correlated with unobservables that also affect the outcome variables. One way to address this concern is by utilizing the fact that dowry affects parents of boys and girls in the opposite manner—the former expect to receive and the latter expect to pay dowry upon marriage.

However, boy families and girl families may be different along other dimensions that are correlated with the outcomes. This is especially true as selective abortion of girls is widespread in contemporary India. To resolve this issue, we distinguish between households that differ by first-born sex. Despite access to prenatal sex-determination technology, the sex ratio at first parity has remained unbiased in India and is frequently used as an exogenous shock in related literature (Das Gupta and Bhat (1997), Visaria (2005), Bhalotra and Cochrane (2010), Anukriti et al. (2016)). While parents of a firstborn girl (FG) may be more likely to have a subsequent birth and to sex-select due to a desire for at least one son (or to compensate for the negative income shock

[1] In the 2012 Human Development Survey of India, only 5 percent of ever-married women aged 25-49 reported that they had a self-arranged or "love" marriage.

due to a FG), they should still have more girls on average than firstborn boy (FB) households.[2] Therefore, the first child's gender can be reasonably considered an imperfectly anticipated permanent income shock at the time of birth.[3] Thus, we estimate the causal impact of dowry expectations by interacting randomly determined firstborn sex with pre-determined expected dowry.

Theoretically, the effect of expected future dowry payments on savings, labor supply, and child investments is ambiguous. In an inter-temporal utility maximization framework, new information about future income should lead to immediate adjustments in the optimal consumption path. An increase in expected permanent income (in FB families) should cause an increase in current consumption. However, if households are credit constrained, they may be unable to borrow in anticipation of this income increase, and therefore consumption may only change at the time the income increase materializes (i.e., upon marriage) and not in advance. However, when income is expected to decline (in FG families), households can still save more and lower consumption in advance.[4] In addition, FG parents may work more relative to FB parents due to the income effect of the dowry shock or to smooth income if markets are incomplete. Again, the ability of FB parents to increase current leisure may be muted by credit constraints.

Moreover, direct human capital investment (HCI) in the daughter may be a substitute for dowry on the marriage market if labor market returns to female education are sufficiently high or if a more educated bride is more valuable to the groom's family (e.g., to raise higher quality children). Thus, for a given expected dowry amount, parents of a daughter who foresee higher returns to female education (or health) on the marriage and labor markets, may increase savings by a lesser amount and may instead invest more in the daughter's human capital, relative to parents who foresee lower returns to female HCI. Thus, our research question is essentially an empirical one.

We use data from the 2006 Rural Economic and Demographic Survey (REDS) of India. Using retrospective information on gifts given and received at the time of marriage, we compute the net real payment by the bride ("dowry") for 39,544 marriages that took place during 1960-2008. Unlike other Indian datasets that record total marriage expenditure by families *similar* to the respondent's family, REDS reports actual payments by brides and grooms in the surveyed households. First, we document the trends in dowry payments in India and find that average dowry has been remarkably stable over time, albeit there is considerable heterogeneity across castes, religions, and states. Second, we show that, as expected dowry increases, FG families significantly increase per capita savings overall and relative to FB families. There is no significant change in FB households' savings when they expect to receive higher dowry implying the presence of credit constraints. Interestingly, FG families increase formal savings in financial institutions and do not invest more in jewelry or precious metals that are traditionally considered an integral part of dowry in India. Third, we find

[2]This would not be the case if FB parents abort subsequent male fetuses in order to have a daughter. However, there is no empirical evidence to support this claim.

[3]The income shock will however be anticipated at the time of child's marriage.

[4]The decrease in consumption may also take the form of lower investments in children's human capital, especially girls'.

that FG fathers work more days in a year relative to FB fathers as expected dowry burden goes up. However, dowry does not seem to be a significant explanatory factor for differential fertility and sex-selection in FG and FB families. Lastly, the impact of dowry expectations on child investments is unclear. On the whole, we find that the custom of dowry significantly alters the financial decisions of a household, and parents respond in a manner that suggests that daughters continue to be considered an economic liability in India.

Our paper contributes to several literatures. While dowries have received considerable attention in the economics literature, a lot of it is theoretical (e.g., Botticini and Siow (2003), Anderson (2007b), Anderson and Bidner (2015)). While dowry trends in India have been the subject of a lively debate (Anderson (2003), Anderson (2007a)), the empirical arguments have relied upon a small sample collected by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) that is not nationally representative and is outdated (Rao (1993), Edlund (2006), Arunachalam and Naidu (2015)).[5] Other recent papers that study dowry in India using alternate data (e.g., Maertens and Chari (2012), Chakraborty (2015), Roy (2015), Bhalotra et al. (2016)) do not analyze dowry trends. As such, our first contribution is that we describe the evolution of and the heterogeneity in dowry by caste, religion, and state in contemporary India.

Second, we contribute to the growing body of work on the effects of marriage payments.[6] We are not aware of any study that estimates the causal impact of dowry on household savings, labor supply, and expenditure on children's education. While Deolalikar and Rose (1998) and Rose (2000) have examined, using ICRISAT data, the association between female birth, savings, and parents' time allocation in India, they do not use dowry data and thus do not explicitly show that dowry is the underlying mechanism for their findings. Moreover, their analyses are less relevant for post-1980 India where sex-selection has made child gender endogenous. Our analyses of fertility and sex-selection are related to Alfano (2015) and Bhalotra et al. (2016), but our results differ.

We also make a modest contribution to the large literature on income and consumption smoothing (Morduch (1995)). Our finding that households use savings and adjust labor supply to smooth negative income shocks is consistent with classical life-cycle and permanent income models (Franco and Brumberg (1954), Friedman (1957), Campbell (1987)). The lack of smoothing in response to positive income shocks is also consistent with the empirical literature on liquidity or credit constraints (Jappelli and Pistaferri (2010)). Lastly, our work is tangentially related to the research on the impact of sex ratios on savings (Wei and Zhang (2011), Horioka and Terada-Hagiwara (2016)).

The rest of the paper is organized as follows. Section 2 describes the data, while Section 3 discusses dowry trends in contemporary India. Section 4 presents the empirical strategy. Main results are discussed in Section 5. Section 6 presents a variety of robustness checks followed by conclusion in Section 7.

[5] More details are in Section 3.

[6] See Ashraf et al. (2016) for brideprice and Bloch and Rao (2002), Alfano (2015), and Bhalotra et al. (2016) for dowry.

2 Data

We use the most recent 2006 round of REDS, which is a nationally representative survey of rural Indian households first carried out in 1968. In addition to detailed information on savings, labor supply, and other economic and demographic variables, REDS includes retrospective questions on marriage histories of household members.[7] Unlike other datasets, e.g., the Indian Human Development Survey (IHDS), that record total marriage expenditure by families similar to the respondent's family as reported in the year of survey, REDS collects data on actual payments by brides and grooms in the surveyed households. Specifically, it reports the value of gifts received or given at the time of marriage in addition to the year of marriage and demographic information of spouses (e.g., caste, age, and years of schooling).

Our primary outcomes of interest are different measures of saving, father's days worked, and expenditure on children's education. Using the detailed information available in REDS, we construct the following measures of household saving in per capita terms: total savings, formal savings, savings in jewelry, savings in livestock, and savings in durable goods.[8] The saving variables are constructed based on the value of each item purchased (deposits) and sold (withdrawals) during 2005-06, i.e., we only have information on savings at one point in time. The employment history in REDS 2006, however, provides the number of days worked each year between 1982 and 2006, which we use to construct a panel data set of fathers' labor supply.[9]

Table 1 provides summary statistics of the key variables used in our analysis. An average household expects to pay or receive Rs. 26,420 as dowry. Educational attainment is low—the years of schooling for an average father and mother are, respectively, 6 and 4. OBCs are the largest caste group in the sample (47 percent), followed by other "upper" castes (27 percent), SCs (18 percent), and STs (8 percent). In terms of religion, Hindus are the majority (88 percent). The mean number of children at the time of survey is 2.09. The year of birth for firstborn child ranges from 1992 to 2008. We restrict the child age to less than 15 before constructing birth order. We restrict our sample to nuclear households since savings data in REDS are available only at the household level.

3 Dowry in Contemporary Rural India

The first objective of this paper is to document the trends in dowry payments in contemporary rural India. There has been a lively debate in the literature on whether India (and the rest of South Asia) has been experiencing dowry inflation, and, if so, whether it has been caused by an excess supply of women on the marriage market, referred to as the "marriage squeeze" (e.g., Rao (1993), Edlund

[7] The 2006 REDS collected marriage histories of a household head's sons, daughters, brothers, sisters, and non co-resident parents.

[8] A detailed description of variable definitions is available in Section 8.

[9] During the year of REDS survey in 2006, about 95 percent of fathers in the data set reported their primary activity to be: self-employed farming, self-employed non-farming, salaried work, agricultural wage labor, or non-agricultural wage labor.

(2006), Anderson (2007b)).[10] Remarkably, this debate has been based on data from an extremely small sample that is not nationally representative. The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) sample used in Rao (1993) and Edlund (2006) comprises 141 households from six villages in three districts of rural South Central India collected in 1983 through a retrospective survey on marriage.[11] This is likely due to lack of data on dowries during the time period examined by these studies, roughly 1923-1978. Other papers on this topic (e.g., Anderson (2007b)) have been theoretical and have assumed the presence of dowry inflation and have sought to test if marriage squeeze is a credible explanation for it. Moreover, these studies do not inform us about trends in more recent years that have witnessed remarkable economic and social changes.

Recently, Logan and Arunachalam (2014) use data from Bangladesh, India, Nepal, and Pakistan to assess this prior research, and conclude that there is no dowry inflation in South Asia. For India, in addition to the 1983 ICRISAT survey used by the aforementioned studies, they use the Survey of Women and the Family (SWAF) conducted in 1993-94. While SWAF data is more recent than ICRISAT data, a key shortcoming of it, that the authors acknowledge, is that it does not report specific dowry amounts and instead provides five ordinal categories that nominal dowries fall into.

We supplement this literature by utilizing another data source—REDS 2006—that is more recent, is larger, is more representative, and provides retrospective information on the nominal value of gifts received or given at the time of marriage for each year during 1960 and 2009. While some recent papers have used this dowry data (Chakraborty (2015), Roy (2015), Bhalotra et al. (2016)) for part of their analyses, none have used it to describe the cross-sectional and temporal variation in dowries.

In this section, we describe the evolution of (i) gross payments by the bride's family to the groom or his family, (ii) gross payments by the groom's family to the bride's family, and (iii) net dowry computed as the difference between (i) and (ii). We deflate the nominal amounts using the 2005 Consumer Price Index (CPI) and plot 5-year moving averages in most graphs.

Figure 1 shows that average dowry has been remarkably stable over time, with some dowry inflation during 1960-73 and 2000-09. The trend in net dowry is mimicked by the trend in gross payments by the bride's family to the groom's family. The flow of payments in the opposite direction, i.e., from the groom to the bride, is also positive throughout, but substantially smaller. While an average groom's family spends about INR 5,000 on gifts to the bride's family, gifts from the bride's family cost seven times more, i.e., about INR 35,000. Thus, the real net dowry fluctuates around INR 27,000 during 1973-1995 in our sample.[12] As per capita incomes have risen in India during our study period, these stable trends imply that, on average, dowry as a share of household income has

[10] Logan and Arunachalam (2014) provide a detailed and comprehensive discussion of this debate.

[11] The six ICRISAT villages belong to two states: Andhra Pradesh (Aurepalle and Dokur villages of Mahbubnagar district) and Maharashtra (Shirapur and Kalman under Solapur district, Kanzara and Kinkhed under Akola district). The total number of surveyed households was 240, but the regression analysis sample in Rao (1993) and Edlund (2006) comprises 141 and 160 households, respectively, due to missing data.

[12] The INR 27,000 amount is roughly similar to the dowries reported in Figure 1 of Logan and Arunachalam (2014) during 1923-78.

gradually declined at the national level. Figure 2 plots the distribution of net and gross marriage payments. The proportion of marriages with a negative net dowry, i.e., where the groom's family paid more to the bride's family than the other way around, is non-zero, but quite small. The vast majority of the marriages involved positive net dowry payments to the groom's family. We do not observe any marriages where the value of gifts was reported to be zero.[13]

It is well-known that the Indian marriage market imposes significant barriers on marriage across castes and religions. Thus, caste- and religious-groups can, in a sense, be considered distinct marriage markets. In Figure 3 we therefore examine the trends in net real dowry separately for Scheduled Caste (SC), Scheduled Tribe (ST), Other Backward Class (OBC), and other or upper caste households in the top panel, and for four religious groups—Hindus, Muslims, Sikhs, and Christians. Dowry is positively correlated with higher caste status and the caste hierarchy of dowry payments has not changed over time. Upper caste marriages have the highest dowries, followed by OBCs, SCs, and STs.

The trend for Hindus is similar to the national trend, which is not surprising as Hinduism is the majority religion in India (89 percent of our sample is Hindu). It is also quite clear from the graph that dowry is not just a Hindu phenomenon in India. In fact, Christians and Sikhs exhibit a remarkable increase in dowry in recent years. Moreover, average net dowry payments in Muslim marriages are only slightly lower than Hindu dowries. The prevalence of dowry among Indian Muslims is consistent with the evidence from Bangladesh, a Muslim country where brideprice is rarely observed in recent decades (Ambrus et al. (2010)). The dowry inflation in post-2000 years appears to be driven by upper castes and non-Hindus.

We corroborate the cross-sectional patterns by caste and religion using dowry data from the 2004-05 IHDS. Unlike REDS, IHDS elicits dowry data indirectly by asking respondents how much money is usually spent at the time of the marriage by a groom's or a bride's family that is similar to the respondent's family; this information is only collected for the survey year. Table A.1 shows the sample means of the net dowry paid by the bride's family calculated using these responses for various castes and religions. Although our paper focuses on rural India because REDS does not cover urban areas, we also report urban dowries from the IHDS for comparison. Reassuringly, the patterns in Table A.1 are identical to those in the REDS data in 2004-05. The similarities between REDS and IHDS also assuage concerns about differential under- or over-reporting of dowry payments and receipts by the sampled households.

Figure 4 explores geographical variation in dowry trends. While the trend is quite flat for several states, there are some noticeable exceptions. Kerala exhibits stark and persistent dowry inflation since the 1970s, and has the highest average dowries in recent years. Given Kerala's religious composition—26 percent Muslims, 18 percent Christians, and 55 percent Hindus—this trend is compatible with the differential trends by religion described earlier. Similarly, the inflationary

[13]However, our data does contain marriages with missing information on gifts. A detailed discussion of this issue and how we deal with it is in Appendix B.

trend in Punjab—a majority Sikh state—is also consistent with the rise in Sikh dowries. Other states with less dramatic inflationary trends are Haryana and Gujarat, although the latter exhibits a sharp rise during 2000-09. On the other hand, dowry decreased in Orissa (with a slight recent increase),[14] West Bengal, Tamil Nadu, and in one of the two ICRISAT states, Maharashtra. The second ICRISAT state, i.e., Andhra Pradesh, displays deflation since mid-1990s and a more volatile trend before that. Note, however, that the studies by Rao (1993) and Edlund (2006) focus on the 1923-1978 time period.

4 Identification Strategy

Our goal is to estimate the causal effect of net expected dowry costs of children on parents' saving behavior, labor supply, and investments in children. However, this is not straight forward because of two key concerns about our dowry variable. First, does it accurately measure expectations and second, is it exogenous?

Our dowry variable differs by the child's year of birth, parents' caste, and state of residence. Specifically, we define expected dowry as the average net dowry paid by brides or received by grooms from the same caste and state as the child and who married during the year of the child's birth or the prior four years. We also try two alternate definitions of dowry by changing the years over which the average is calculated and by using both caste and religion to define the marriage market. The accuracy of the dowry variable depends on how correctly we define marriage markets and capture expectation formation. We assume that the relevant marriage markets are based on caste (and religion) and state. This is a reasonable assumption given the highly endogamous nature of the Indian marriage market. According to the 2005 India Human Development Survey, only 4.4 percent of women were married to a spouse from a different caste. Using responses to matrimonial advertisements in a Bengali newspaper, Banerjee et al. (2013) find evidence in favor of a strong preference for in-caste marriage – e.g., the bride's family is willing to trade-off the difference between no education and a master's degree in the prospective husband to avoid marrying outside their caste. In addition to this "horizontal" preference for same-caste marriages, inter-subcaste marriages are governed by strict rules of hierarchy. Although caste is primarily a Hindu phenomenon, the notion of caste-based hierarchy remains well-preserved among many other religious groups in India. In the 2009 National Sample Survey, 31 percent of Sikh households identified themselves as belonging to a Scheduled Caste (SC). Lastly, inter-religious marriages are far less common than inter-caste marriages. Moreover, while patrilocal exogamy is widely practiced, most people marry within their state. To illustrate, less than 4 percent of the population in 2001 had moved across states in the last ten years according to the Census data. We also assume that parents form expectations about future dowries based on recent dowries within their caste and state of residence. We alternatively

[14]The high level of average dowry in Orissa aligns well with the high prevalence of dowry-related crimes in the state. In 2013, Orissa had the highest dowry-related crime rate among Indian states, accounting for 16.5 percent of the total dowry-related cases recorded in the country during 2012. Source: `http://www.newindianexpress.com/states/odisha/State-tops-the-chart-in-dowry-cases/2013/08/08/article1723732.ece`.

use the year of survey, years preceding the year of birth, and years around the year of birth to define average expected dowry.

As mentioned in the introduction, we utilize the fact that dowry affects parents of boys and girls in the opposite manner—the former expect to receive and the latter expect to pay dowry upon marriage. However, fertility and child composition may be endogenous. Before sex-selection was possible, girls were born in relatively larger families as compared to boys, and larger family size would mechanically have lower savings per capita, irrespective of dowry expectations. Moreover, if son-biased stopping rules or sex-selective abortions are more prevalent among groups with certain socioeconomic characteristics that are also correlated with savings, for example, we are also likely to encounter the omitted variables bias. Therefore, interacting expected dowry with the number or the sex ratio of children is also not ideal.

In order to address the endogeneity, we interact expected dowry with firstborn sex. Despite access to sex-selection, the sex ratio at first parity has remained unbiased in India and is frequently used as an exogenous shock in related literature (Bhalotra and Cochrane (2010), Rosenblum (2013), Anukriti et al. (2016)). Table 1 provides summary statistics of the key variables used in our analysis by the gender of the first child. Reassuringly, there are no significant differences between firstborn boy and firstborn girl families in terms of socioeconomic characteristics such as expected dowry, caste, religion, mother's years of schooling, except for small differences in father's schooling and belonging to a SC. Nevertheless, we include the control for all these covariates to increases the precision of our estimates by reducing the residual variation to be explained in our specifications. For given expected dowry per marriage, we expect FG families to save more that FB families.

Ideally, we would focus on households that recently had their first child and compare FB families with FG families. However, due to sample size concerns, we first use the entire sample regardless of the number and the composition of children. While FG parents may be more likely to have a subsequent birth and sex-select due to son preference or to compensate for the negative income shock from the first birth, FG families should still have more girls on average (unless parents of the first boy want to have a girl and abort male fetuses, which is unlikely), and hence we expect them to save more relative to FB families. Later, we examine heterogeneity in our results by the number of children.

4.1 Savings

To investigate whether the parents of a firstborn girl save more than the parents of a firstborn boy during the survey year (2005-06) due to expected future dowry payment, we estimate the following specification for household i from caste c in state s and whose first child was born in year t:

$$\begin{aligned} Saving_{icst}^{2005-06} = \alpha &+ \beta_1 FirstGirl_i \times Dowry_{cst} + \beta_2 Dowry_{cst} + \beta_3 FirstGirl_i \\ &+ \pi_{st} + \phi_{ct} + \psi_{sc} + \eta_c FirstGirl_i + \eta_s FirstGirl_i + \eta_t FirstGirl_i \\ &+ \omega_c + \delta_s + \theta_t + \mathbf{X}_i^{'}\gamma + \epsilon_{icst}, \end{aligned} \tag{1}$$

where $Saving_{icst}^{2005-06}$ denotes various measures of household saving in 2005-06; $FirstGirl_i$ indicates

that the firstborn child in household i is female; $Dowry_{cst}$ is expected dowry defined as the average dowry paid by brides from caste c in state s who were married during the year of the child's birth or the prior four years (i.e., during $t, t-1, t-2, t-3, t-4$);[15] $\mathbf{X}_i$ is a vector of covariates comprising parents' years of schooling, indicators for religion, and in some specifications, the household's number of children and wealth per capita.[16] We report unweighted regressions in the main sets of table. However, our results remain the same when we use weights.[17] Standard errors are clustered at the state level. We also compute standard errors that are wild-cluster bootstrapped by state; these results are present as robustness checks later.

The coefficient β_2 captures how savings in FB families respond to expected dowry, while β_1 captures the differential response of FG families to expected dowry, relative to the response of FB families. β_3 describes the difference between savings behavior of FB and FG families when expected dowry is zero. Thus, the inclusion of the FG main effect allows us to control for any changes in per capita saving that could result for factors unrelated to dowry, for instance, higher fertility among FG families due to the desire for at least one son. To exclude other confounding factors related to the caste, state, gender, and year of birth of the firstborn child, we control for all main and interaction fixed effects for these factors (i.e., $\omega_c, \delta_s, \theta_t, \pi_{st}, \phi_{ct}, \psi_{sc}$, $\eta_c FirstGirl_i, \eta_s FirstGirl_i, \eta_t FirstGirl_i$).

Thus any remaining threats to identification come from caste-state-year specific factors that may be correlated with $Dowry_{cst}$ and that differentially affect FG and FB parents. If this is so, the coefficient of interest, β_1, would then be contaminated by these omitted variables, and would not capture the causal effect of dowry expectations. One such factor could be fertility. If dowry changes in a caste-state-year are correlated with changes in factors such as the degree of son preference, the likelihood and sex ratio of higher parity births may differ by firstborn sex. Furthermore, if dowry is more prevalent in regions with stronger son preference, we would expect FG families to be more likely to have subsequent births if they are following son-biased stopping rules with or without sex-selection, and that is likely to *lower* per capita savings. Therefore this bias would go against us. A higher sex ratio may eventually also reduce dowry due to scarcity of women on the marriage market (although there is currently no evidence that this has happened in India). However, first, our variable of interest is expected dowry, that is what determines parents' financial decisions when the child is young and second, a lower expected dowry should make parents less likely to save.

Fertility could also be directly affected by expected dowry if FG families respond to dowry expectations by increasing sex-selection for subsequent births (to have a compensating son who

[15] The robustness checks using alternate definition of dowry expectation are provided in Section 7.

[16] Instead of including religion fixed effects, we also try an alternate definition of marriage markets based on caste *and* religion, along with state and year. These results are described later as a robustness check.

[17] The 2006 REDS data does not provide sampling weights, hence we construct them in the following manner. Using the village listing data which includes all households in REDS villages, we create an indicator for the households that are actually sampled and regress it on the observables in the listing data. These inverted predicted probabilities serve as weights, assuming that the observables capture differential reasons for being surveyed. The observables in the listing sheet data used to construct weight are household size, number of earners in the household, head's age, head's years of schooling, indicators of head's caste (SC, ST, OBC, OC), religion (Muslim), and gender, and state fixed effects.

would receive dowry), that could lower fertility (and household size), and thereby increase per capita savings. To test if this the case, we re-estimate equation (1) by using fertility and proportion of sons in second and higher parity births as the dependent variables. Here we also include fertility as a control when we estimate the effect on savings using specification (1).

Lastly, we further attempt to address these concerns by examining how our results change when we restrict the sample to households with specific number of children. A strict test for our story comes from one-child families. Since these families have not yet had a second child, any saving response to firstborn sex and expected dowry cannot be due to endogenous fertility change. Restricting to a short time horizon after the birth of the first child is good as it shuts down the re-optimization that takes place in response to the revelation of the first child's gender.

4.2 Labor Supply

The birth of a son or a daughter can affect parents' time allocation in the following ways. The permanent income shock is a pure lottery and doesn't change the reward or wage from working, i.e., there is no substitution effect. However, the income effects implies that in the absence of credit constraints, FB parents should increase leisure, i.e., decrease labor supply and FG parents should increase labor supply. When the household is credit constrained, the inability to borrow implies that current leisure may not increase, i.e., current labor may not decrease, when permanent income goes up for FB parents.[18]

Using the employment history between 1982 and 2006, we estimate the labor supply response for individual i from caste c in state s in year t' and whose first child was born in year t. The following specification estimates the impact on labor supply:

$$\begin{aligned} L_{it'} = \alpha &+ \beta_1 FirstGirl_i \times Post_{t'>t} \times Dowry_{cst} \\ &+ \beta_2 Post_{t'>t} \times Dowry_{cst} + \beta_3 FirstGirl_i \times Post_{t'>t} \\ &+ \delta_{st'} + \theta_{ct'} + \pi_{tt'} + \gamma_i + \omega_{t'} + \epsilon_{it'}, \end{aligned} \tag{2}$$

where $L_{it'}$ are the the number of days worked in year t'; $Post_{t'>t}$ equals 1 if $t' > t$, and 0 otherwise; and $FirstGirl_i$ and $Dowry_{cst}$ are defined as before. We include the time interaction fixed effects (i.e., $\delta_{st'}, \theta_{ct'}, \pi_{tt'}$) as well as time fixed effects ($\omega_{t'}$) in this specification. The coefficient β_2 captures how expected dowry affects parents' number of days worked after the birth of a firstborn boy and β_1 captures the differential response of parents of a firstborn girl after her birth. The panel nature

[18]The predictions for mothers are not as straightforward. While child rearing may involve some decline in market work irrespective of child gender, returns to investment of women's time in child-care on the marriage market may be an additional consideration while allocating time. If sons with higher HKI obtain higher dowry, FB mothers may decrease labor supply even more, if there are no credit constraints. Similarly, if daughters with higher HKI pay smaller dowries, FG mothers may also work less outside the home to invest in daughters' HKI; however, in that case FG fathers would work even more to compensate for the loss of mothers' income. In any case, 89 percent of the mothers in our dataset report being a housewife as their primary occupation. Since the data does not report days worked separately for primary and secondary occupations, we cannot credibly estimate the effect on market- and non-market work for mothers, and hence focus only on fathers.

of the labor supply variable allows us to control for individual fixed effects (γ_i). To test if father's response varies by measure of wealth, we estimate specification (2) by whether a a household's wealth per capita is below or above the median.

4.3 Children's Education

Next we estimate the effect of dowry expectations on investments in children's education. For child i of birth-order b born in household j, caste c, in state s and year T and whose oldest sibling was born in year t we estimate the following specification separately for boys and girls:

$$\begin{aligned} Y_{ijcst}^{b,g} =& \alpha + \beta_1 Firstgirl_j \times Dowry_{cst} \\ &+ \beta_3 Dowry_{cst} + \pi_{st} + \phi_{ct} + \psi_{sc} + \eta_c Firstgirl_j + \eta_s Firstgirl_j + \eta_t Firstgirl_j \\ &+ \rho_{bt} + \beta_2 Firstgirl_j + X_j\gamma + \omega_c + \delta_s + \theta_t + \kappa_b + \psi_T + \epsilon_{icst} \end{aligned} \tag{3}$$

The dependent variable is the sum of expenditures on fees, uniforms, books or stationery, transport, hostel, and private coaching or tuition of a child.

5 Results

5.1 Savings

In Table 2 we present results from equation (1) that estimates the impact of expected future dowry payments on parents' current saving behavior. Our preferred specification is column (4). We add controls as we move from column (1) to column (5). We show how expected dowry differentially affects total household per capita annual saving in FG and FB families. The coefficient of *Firstborn girl* is negative and not always significant, implying that, in the absence of dowry expectations, FG families do not save more than FB families. However, when expected dowry is positive, FG families save significantly more than FB families, and, within FG families, savings increase with the amount of expected dowry. FB families decrease savings when anticipated dowry receipts are higher, although the coefficients are largely insignificant. These results suggest that while a negative permanent income shock due to dowry expectations induces FG families to start saving more in advance, a positive permanent shock is not as effective for FB families. This potentially reflects the presence of credit constraints due to which FB families cannot borrow against the future dowry income and hence cannot increase current consumption. The interaction coefficient in column (4) (= Rs. 532.94) translates into 57 percent higher savings in FG families for a given expected dowry amount, relative to average annual savings in FB families of Rs. 938. These findings are robust to the inclusion of household wealth as a control in column (5).

To address the endogeneity concerns related to differential fertility in FG and FB families, we first show that our results survive controlling for the number of children in column (5) of Table 2. Second, in Table 3, we re-estimate the effects on savings separately for families that have one child (in column 1), one or two children (in column 2), and one or two or three children (in column 3). The sub-sample of one child families offer a strict test for our story since the saving behavior of these families is has not yet been affected by the differential likelihood of higher parity births

or sex-selection of these births by firstborn sex. We find that families that have only a girl child also save significantly more than families that have only a boy child. As we increase fertility of our sub-samples, note that while average per capita savings fall even for FB families (from Rs. 1380 to Rs. 1068 to Rs. 971 in column (1)), we continue to see significantly higher savings among FG families in each case. For given positive expected dowry, FG families in columns (1), (2), and (3) respectively save 92 percent, 62 percent, and 56 percent more than FB families' average annual savings.

The higher savings for FG families take the form of higher per capita formal saving in financial institutions (In Table 4). Contrary to conventional beliefs about dowries in India, we do not find a significant difference in jewelry saving (in precious stones and metals) among FG and FB families.[19] This pattern of saving behavior is consistent with greater access to financial institutions and instruments in rural India and the less liquid nature of jewelry relative to cash savings in bank accounts during our study period. Similarly, there is no significant difference in terms of saving in livestock (although the coefficient is positive) and saving in durable goods. The interaction coefficient in column (1) (= Rs. 498) translates into 77 percent higher savings in FG families relative to average per capita formal savings in FB families of Rs. 645.

Bhalotra et al. (2016), on the other hand, find that an unexpected increase in the price of gold leads to immediate rise in fetal and infant mortality of girls, which suggests that families neither switch to alternate forms of dowry nor wait to realize if the price shock is permanent before withholding investments in girls. If parents selectively eliminate daughters that become more expensive due to gold inflation, then the gold price shock, of course, does not have to translate into higher savings. However, by that reasoning, FG families should also be more likely to practice sex-selection at higher parities as expected dowry rises. However, we do not find this to be true in our data.[20] Table 5 shows that FG families have higher fertility and practice greater sex-selection even if expected dowry is zero, and that there is no differential effect of dowry on future childbearing and sex-selection in FG families relative to FB families. These findings not only assuage concerns about endogenous fertility, but are also important in their own right. It is frequently claimed that dowry is an underlying cause of son preference and discrimination against girls in India. While the desire for at least one son is real and affects childbearing decisions, it leads to higher fertility and more male-biased sex ratios *even in the absence of dowry*, and dowry does not seem to be an additional significant explanatory factor. In fact, our results also contradict the findings of Alfano (2015) who finds that an amendment that made the Indian anti-dowry law stricter in 1985 led to decreases in male-biased fertility behaviors as it potentially made the dowry cost of daughters smaller. Both Alfano (2015) and Bhalotra et al. (2016) do not directly estimate the effect of dowries on excess female child mortality, male-biased fertility, and the sex ratio at birth.

[19] This is true irrespective of whether the family has only one child, or $\leq$ two children, or $\leq$ three children.

[20] We differ from Bhalotra et al. (2016) in the other ways: they use data from the 1999 REDS, while we use the 2006 REDS. They define dowry as the gross value of gifts from the bride's side to the groom's side, where as we use net dowry.

In Table 6 we provide further supporting evidence for the role of dowry in affecting savings independently of its relationship with son preference. We restrict the sample to FB families. Since these parents already have a son, their desire to continue childbearing is less likely to be driven by son preference and they are less likely to practice sex-selection than FG families. Within this sub-sample we then compare how expected dowry affects per capita savings across households that differ in the net number of girls (defined as the number of girls minus the number of boys in a family). Using net number of girls rather than total number of girls also allows us to shutdown any potentially compensatory benefit of having an older brother whose dowry receipt may be used to finance a younger sister's dowry payment. The interaction coefficient continues to be positive and significant.

5.1.1 Heterogeneity

Next we test the role of income and credit constraints in the ability of parents to alter current consumption in response to changes in permanent income. Table 7 shows that the higher savings for FG relative to FB families for given positive expected dowry is driven by above median wealth households. The coefficient of *Firstborn girl * Expected dowry* is also positive for below median families but is small and is insignificant, suggesting that income constraints limit poor parents' ability to save. For FB families, credit constraints would imply a smaller increase in current consumption (or decline in savings) for poorer households, which is what we find, but the coefficients of *Expected dowry* are insignificant for both sub-samples.

In Appendix Table A.2 we also examine heterogeneity in the impact on savings by the educational attainment of parents, by above versus below median expected dowry, and by residence in high versus low son preference state.[21] While the interaction coefficient is positive across all sub-samples, it is significant only for high educated parents, above median dowry expectation, and high son preference states. This pattern of results is consistent with lower labor market returns to HKI in daughters in high son preference states (that makes saving for dowry preferable over investing in girls' education) and with greater dowry burden if expected dowry is above median. While it is unclear what to expect a priori in terms of heterogeneity by education, it is reassuring that the coefficient size is larger for more educated families, as they presumable have higher income and thus can potentially save more for a given expected dowry than lesser educated families. The education heterogeneity is consistent with the wealth heterogeneity in Table 7.

5.2 Father's Labor Supply

The dowry shock causes FG fathers to work more relative to FB fathers; the latter do not exhibit a significant change after the birth of their first child (column (1) in Table 8). The triple-interaction coefficient translates into a 2.29 percent increase in FG fathers' days worked relative to the average days worked by FB fathers (= 174). Note that, when expected dowry is zero, FG fathers do not

[21] High son preference states are Haryana, Punjab, Rajasthan, Uttar Pradesh, Madhya Pradesh, and Himachal Pradesh

work more than FB fathers. These results are consistent with the income effect of future dowry and the lack of decline in days worked of FB fathers implies that households are credit constrained. Columns (2) and (3) check if credit constraints are the reason why FB fathers cannot increase leisure in advance of future income rise. To the extent that above median wealth households are less constrained than below median wealth households, the former should be more able to decrease work than the latter. Indeed the coefficient of *Expected dowry * Post* is negative for above median wealth households, albeit insignificantly, but is positive for below median wealth families, implying that the income effect is somewhat stronger for less constrained families.

5.3 Children's Education

Table 9 shows that the effect of dowry on children's education expenditure is not consistent across specifications.

-IN PROGRESS-

6 Other Robustness Checks

W perform a battery of additional robustness checks that include using two alternative definitions of expected dowry, replacing net dowry with two separate gross marriage payment variables, treatment of missing observations and outliers, and presenting the main results with wild-cluster bootstrapping. Our findings remain the same.

6.1 Alternate Definitions of Expected Dowry

We use two alternate definitions of expected dowry to test the sensitivity of our results. First, we reconstruct the expected dowry variable by incorporating both religion and caste in Table A.3. Specifically, we split Hindus by caste and use other religions as it is (i.e., our seven groups are: Hindu SCs, Hindu STs, Hindu OBCs, Hindu OCs, Muslims, Sikhs, Other religions) and then separately define expected dowry for these groups (while using state and year of birth as before).[22] Second, instead of using the average of net dowries paid in marriages that occurred during the year of the child's birth (YOB) or the prior four years, in Table A.4 we use the average of net dowries paid *around* the YOB of the child (i.e., during $YOB+2, YOB+1, YOB, YOB-1, YOB-2$). In both tables, our findings remain exactly the same as before.

6.2 Expected Gross Marriage Payments

Several economists have modeled dowry as net dowry following Becker (1991). Anthropologists, on the contrary, define dowry as the gross assets brought by the bride to the groom's family at the time of marriage. Edlund (2006) has argued that net dowry is likely to overstate the relative contribution of the bride's family to the groom's family due to marriage market factors, especially among wealthier families, if dowries also comprise pre-mortem bequest to daughters. The only evidence on the relative importance of the bequest motive of dowries, that we are aware of, comes

[22] Hinduism is the majority religion in India, and although other religions also exhibit caste, our sample size prevents us from splitting non-Hindus into further groupings by caste.

from Arunachalam and Logan (2016) who find that, in Bangladesh, bequest dowries have declined in prevalence and amount over time. Since the majority of Indian states did not equalize inheritance rights between sons and daughters until as recently as 2005, bequest may, however, be a crucial component of Indian dowries during our sample period.

We check how replacing net dowry with its two component variables, i.e., gross payments by the bride's and the groom's family in specification (1) alters the impact on savings. Since payments by the groom are several orders of magnitude smaller than those by the bride, we do not expect this to matter. Table A.5 confirms our intuition. The coefficient of *Firstborn girl * Expected gross payment by bride* continues to be positive and significant, albeit is slightly larger in magnitude than the coefficient of *Firstborn girl * Expected net dowry* in Table 2. Moreover, the coefficient of *Firstborn girl * Expected gross payment by groom* is always negative.

6.3 Wild-Cluster Bootstrap

Thus far we have clustered standard errors by state. However, given that the number of states (= 17) in our sample is relatively small, routine approaches to clustering may lead to underestimation of standard errors. To check if this is what underlies our significant results, we use the wild bootstrap-t procedure described in Cameron et al. (2008)) to compute standard errors clustered by state.[23] Table A.6 shows that our savings results remain significant even with wild-cluster bootstrapping. The same is true for all other outcomes; for brevity, however, we do not report bootstrapped standard errors for other tables, but they are available upon request.

6.4 Missing Observations

In REDS 2006, we observe 40,623 marriages for which the year of marriage is available and is during 1960-2008.[24] In the analysis so far, we have excluded marriages where data on both gifts given and received is missing (1,079 observations). Among the rest, while 18,275 (46 percent) observations have information on both gifts, the remaining 21,269 (54 percent) have one of them missing. In the latter case, when only one of the two is missing, we have calculated net dowry by assuming that the missing value equals zero. In doing so (i.e., by replacing missing data with zeros), we are primarily underestimating gifts from the groom's side, and in turn overestimating net dowry, since in 95 percent of the cases where one of the gifts is missing, the missing data is for gifts from the groom's side. Therefore, we test if our findings are driven by our treatment of missing data.[25]

We also check what happens to our results when we drop post-2006 data. This is because Figure 1 shows that gross payments from the bride's side increased after 2006. However, due to the small number of marriages after 2006 in our data, we cannot be sure if this increase captures actual dowry inflation or if it is an artifact of small sample size.

[23] We use the STATA code written by Busso et al. (2013) that computes the errors by assessing the fraction of bootstrap test statistics (in 1,000 repetitions) greater in absolute value than the sample test statistic.

[24] Our data also reports several marriages that took place before 1960, but due to the lack of CPI data for pre-1960 years, we omit them from our analysis.

[25] We discuss missing observations in more detail in Appendix Section B.

Reassuringly, our results remain the same if (1) we construct expected dowry only using marriages where both gifts are non-missing, (2) drop post-2006 data, and (3) do both (1) and (2). Tables A.7 and A.8 present these results for savings and father's labor supply, respectively.

7 Conclusion

Marriage payments have the potential to affect the wealth distribution across generations and families. Although recent work, e.g., Ashraf et al. (2016), has begun to examine these issues in the context of brideprice, similar empirical investigations of the welfare consequences of dowry have been hampered by the lack of data. We attempt to fill this gap. Using nationally representative data from rural India, we document dowry trends in contemporary India and then estimate its causal impact on savings, father's labor supply, fertility, sex ratio, and expenditure on children's education.

Our results imply that parents perceive dowry as a permanent shock to their future income, and respond by smoothing current consumption. The adjustments in terms of savings are stronger in families that face a positive dowry burden, namely, FG families, and the magnitude of savings increases with the expected future dowry payment. However, credit constraints prevent FB families from raising current consumption despite experiencing an increase in permanent income.

However, our study is entirely based on rural data, and the findings may not apply for urban India; although we show that the cross-sectional patterns in dowry amounts in rural India are similar to those in urban India but the average levels are higher in the latter. Moreover, the data on marriage payments is collected retrospectively, and is thus likely to suffer from recall bias.

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8 Variable Definitions

1. Dowry

The dowry variables are constructed based on the retrospective information on the nominal value of gifts received or given at the time of marriage for marriages during 1960 and 2009.

Real net dowry paid by bride's family: "Gifts paid by bride's family" − "Gifts paid by groom's family"

Gifts paid by bride's family: The real value of gifts given by bride's family at the time of marriage

Gifts paid by groom's family: The real value of gifts given by groom's family at the time of marriage

Expected dowry: the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years.

The first alternate definition of expected dowry: the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married around the year of birth (YOB) of the child (i.e., during $YOB+2, YOB+1, YOB, YOB-1, YOB-2$)

The second alternate definition of expected dowry: the average dowry paid (received) by brides (grooms) from the same social group and state as the child and who married during the year of the child's birth or the prior four years. We construct 7 social groups based on the caste and religion. Specifically, we split Hindus by caste and use other religions as it is (i.e., Hindu SCs, Hindu STs, Hindu OBCs, Hindu OCs, Muslims, Sikhs, Other religions).

Expected gross payment by bride (groom): the average value of gifts given by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years.

2. Saving

The saving variables are constructed based on the value of each item purchased (deposits) and sold (withdrawals) during 2005-06.

Household per capita saving: total per capita household saving in financial institutions, jewelry, livestock, and durable goods.

Formal saving (saving in financial institutions) : saving in Commercial Banks; Private Banks; Post Office; Chit Funds; Self Help Groups; Co-operative Society / Bank; Cash in Hand; Stock market; Mutual fund; Life insurance

Saving in jewelry: saving in Precious stones; Precious Metals other than gold and silver; Gold and Silver jewelry

Saving in livestock: saving in Cow (local bred); Cow (cross bred); Buffalo (local bred); Buffalo (cross bred); Bull/Bullock/Ox; Male-Buffalo; Camel; Horse/donkey; Goat; Sheep; Pigs; Hen; Chicken; Guinea fowl; Fowl; Bees; Elephants; Fish; Silk worm

Saving in durable goods: saving in Wrist watch; Clock / time piece; Radio; Transistor; Cassette Recorder/ player; Walkman; TV; VCR; CD Player; Camera; Video camera; Fan; Washing machine; Mixer /Grinder; Electric Iron; Geyser; Refrigerator; LPG Stove; Chula; Kerosene Stove; Pressure Cooker; Metal Utensils; Tumblers etc; Buckets; Water Boiler; Sewing Machine; Almirah; Steel Box; Wooden Box; Lanterns/lamps; Steel Furniture; Wooden furniture; Plastic furniture; Cots; Pillows and bed sheets; Futon (thick blanket, quilt); Electric Shaver; Storage Bin; Bicycle; Scooter; Motor Cycle; Car/LMV; Communication facility (phone set, cell phone set, etc); Metal box/steel trunk; Earthen pots

HH wealth (Total wealth per capita): per capita household wealth in land, assets, livestock, formal savings, jewelry, and durable goods.

3. Number of days worked

The employment history in REDS 2006 provides the number of days worked each year between 1982 and 2006, which we use to construct a panel data set of parents, labor supply.

4. Sex selection

Fraction of sons for birth orders ≥ 2: the proportion of male births from the second child.

5. Number of children

No. of children: No. of children under age 15 in the household

No. of sons: No. of sons under age 15 in the household

No. of daughters: No. of daughters under age 15 in the household

Net no. of girls: is "No. of sons" $-$ "No. of daughters"

6. Expenditures on children

Expenditures on child's education: expenditures on fees, uniforms, books/stationery, transport, hostel, private coaching/tuition

7. Etc.

Nuclear family: household where all the children under age 15 have the same mother.

Parents' education: father's years of schooling and mother's years of schooling

SC: scheduled castes

ST: scheduled tribes

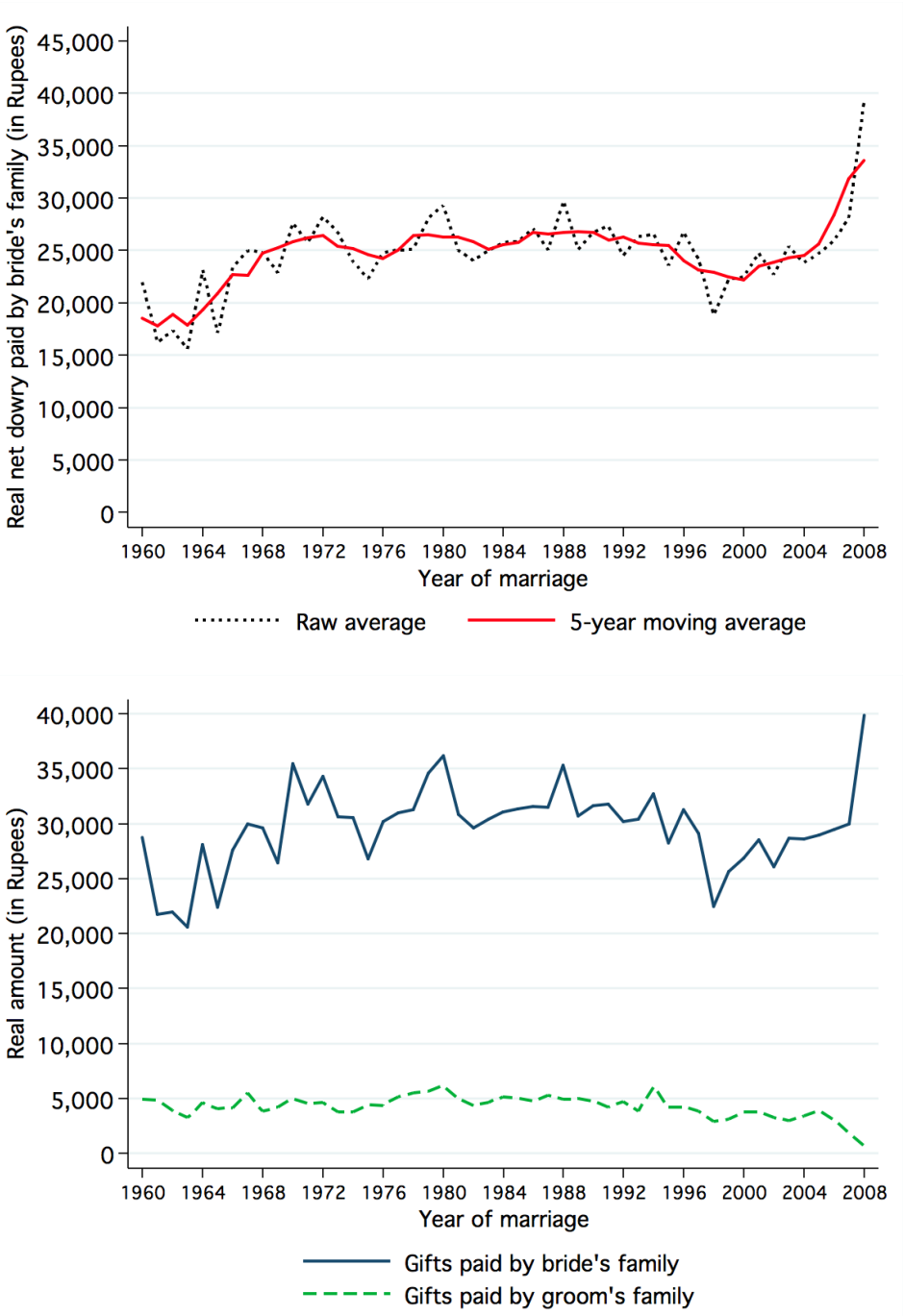
OBC: other backward classes

BPL: a beneficiary of Below Poverty Line card (poorest or less poor).

PDS: a eligibility for purchasing rice or/and wheat from the Public Distribution System.

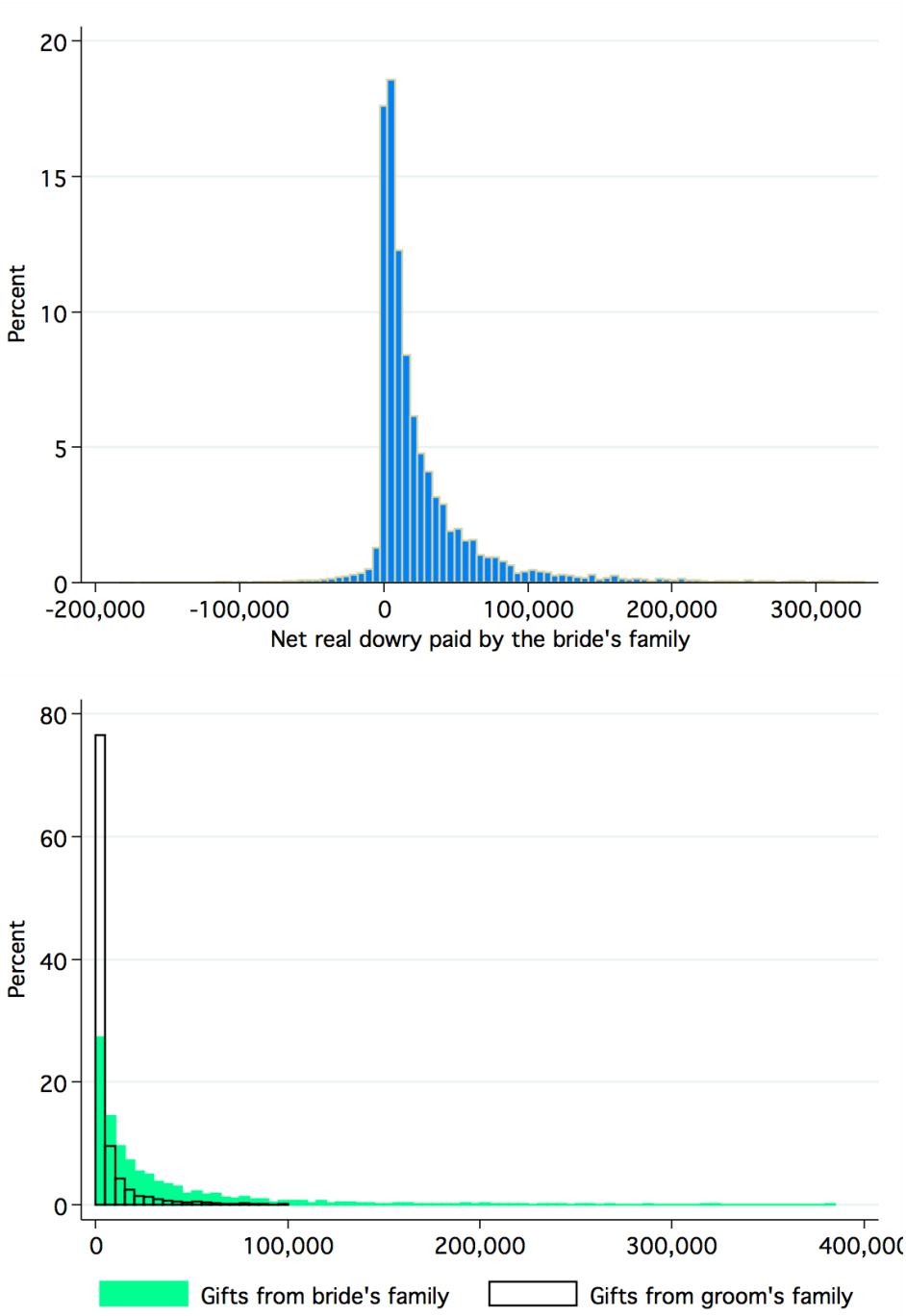
9 Figures and Tables

Figure 1: Trends in Real Marriage Payments (in Rupees), by Year of Marriage



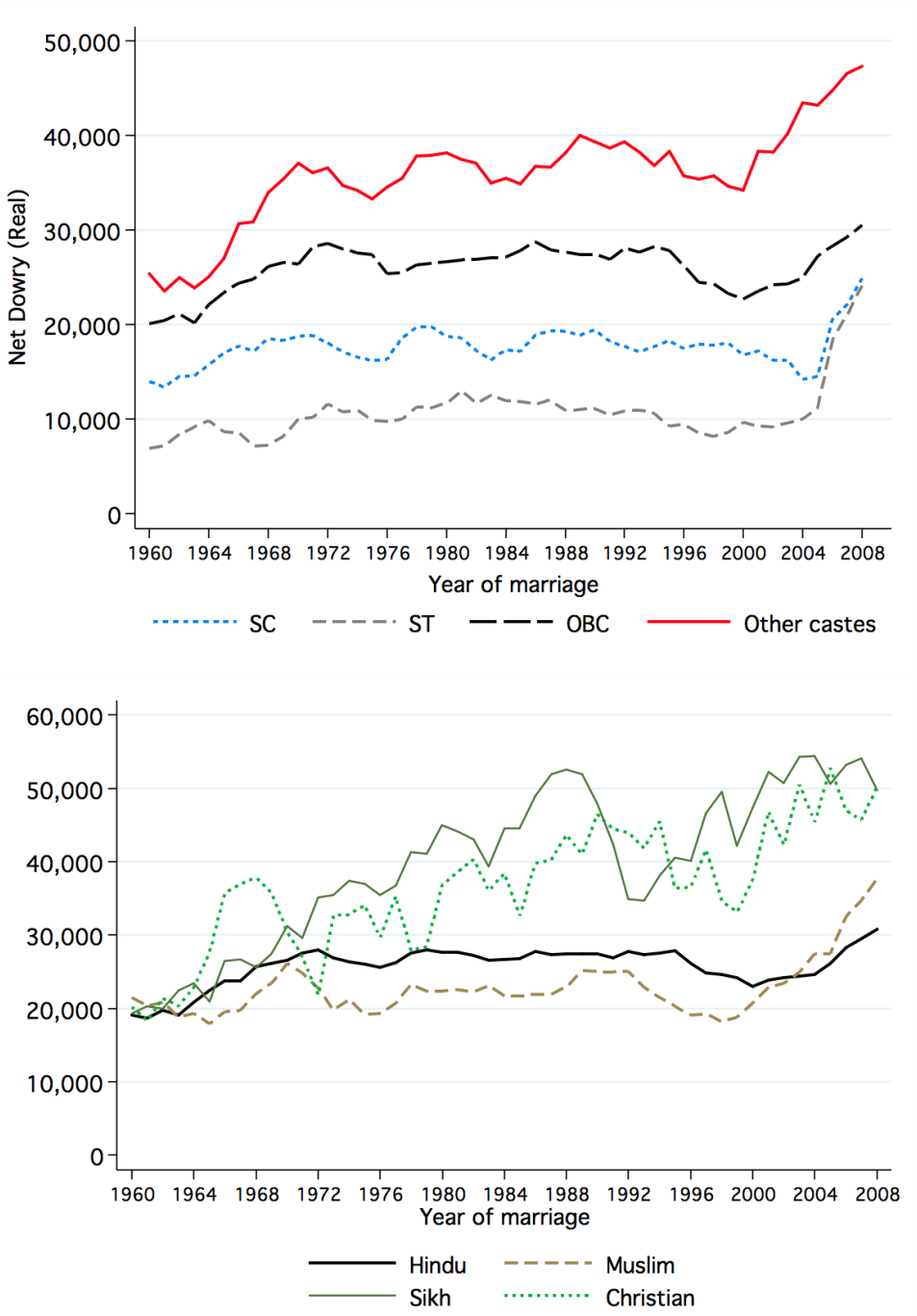
NOTES: The top figure plots the raw unweighted average and the unweighted 5-year moving average of the net dowry paid by the bride's family by year of marriage. The bottom graph plots the raw unweighted average of real payments from the bride's family and from the groom's family by year of marriage.

Figure 2: Distribution of Marriage Payments (in Rupees)



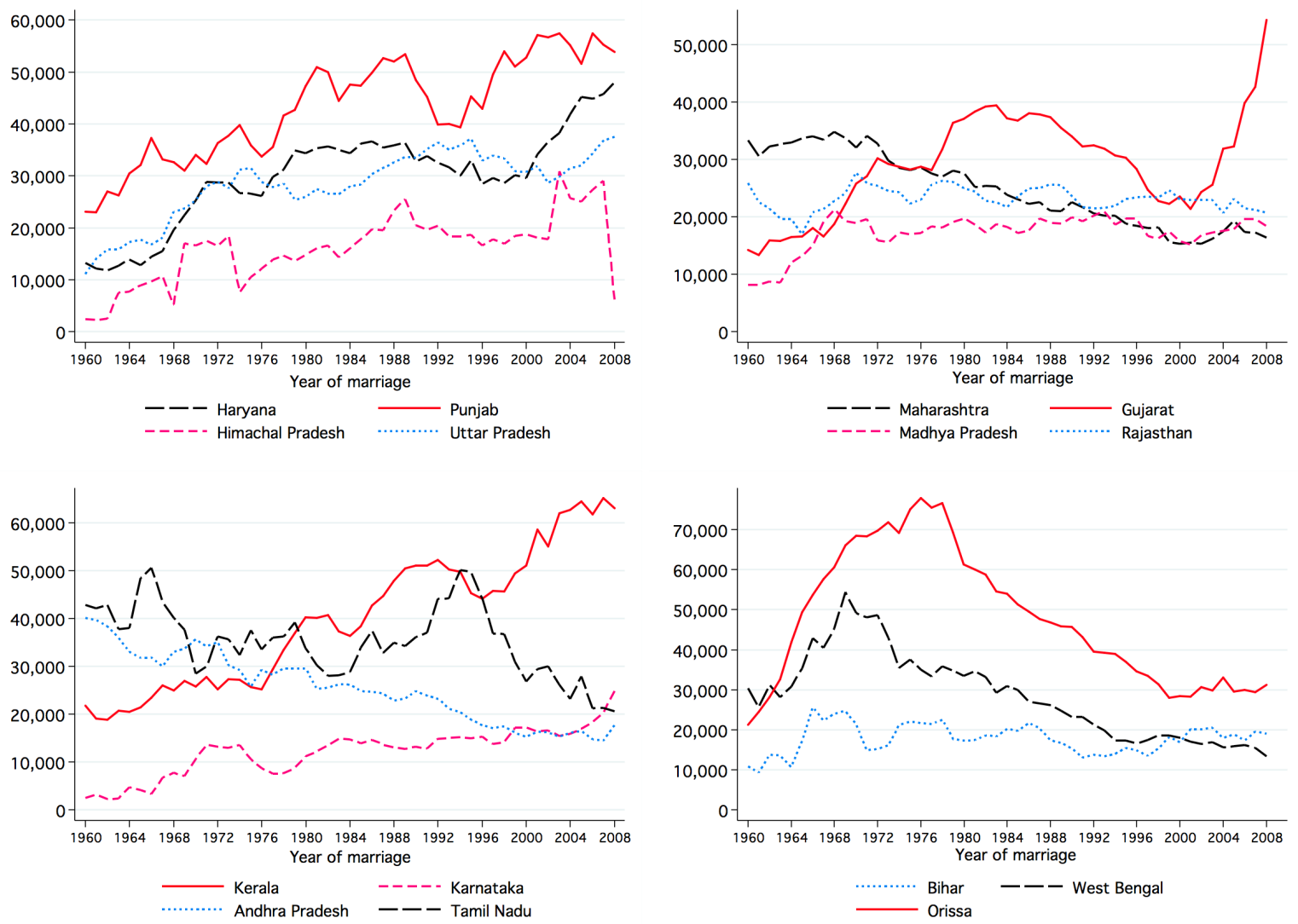
NOTES: This figure plots the distribution of net and gross payments by the bride's and the groom's families during 1960-2008.

Figure 3: Trends in Real Net Dowry Payments (in Rupees), by Year of Marriage, Caste, and Religion



NOTES: This figure plots the 5-year moving unweighted average of real net dowry paid by the bride by year of marriage and caste or religion during 1960-2008. All religions are included within a caste group. SC, ST, and OBC respectively denote scheduled castes, scheduled tribes, and other backward classes.

Figure 4: Trends in Real Dowry Payments (in Rupees), by State and Year of Marriage



NOTES: This figure plots the 5-year moving unweighted average of real net dowry paid by the bride by year of marriage across states.

Table 1: Summary statistics

Household variables:	(1) All	(2) Firstborn boy	(3) Firstborn girl	(4) Difference
Expected dowry	26,420	26,520	26,290	230
Father's years of schooling	6.39	6.51	6.24	0.27*
Mother's years of schooling	3.80	3.81	3.79	0.01
SC	0.18	0.17	0.19	-0.03**
ST	0.08	0.08	0.08	0.00
OBC	0.47	0.48	0.47	0.01
Other caste	0.27	0.28	0.26	0.02
Hindu	0.88	0.89	0.88	0.01
Muslim	0.07	0.06	0.07	-0.01
Sikh	0.03	0.03	0.03	0.00
Total wealth (PC)	155,434	156,658	153,860	2,798
No. of children	2.09	1.97	2.25	-0.28***
Fraction of sons for birth orders ≥ 2	0.56	0.54	0.59	-0.05***
Total saving (PC)	759	938	529	409***
Formal saving (PC)	492	645	295	350**
Saving in jewelry (PC)	119	137	96	41**
Saving in livestock (PC)	-106	-143	-60	-83
Saving in durable goods (PC)	210	239	173	67***
N	4,816	2,710	2,106	
Individual variables:	All	Firstborn boy	Firstborn girl	Difference
Father's no. days worked	178.2	174.5	182.8	-8.3***
N	110,436	61,657	48,779	
Expenditure on child's education	676	721	628	94***
N	10,985	5,716	5,269	

NOTES: This table provides means of variables used in the analysis. Household data is restricted to nuclear households. Firstborn boy (girl) refers to households whose firstborn child is male (female). Expected dowry refers to the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. SC, ST, and OBC denote scheduled castes, scheduled tribes, and other backward classes, respectively. BPL denote a beneficiary of Below Poverty Line card (poorest or less poor). PDS denote a eligibility for purchasing rice or/and wheat from the Public Distribution System. Fraction of sons for birth orders ≥ 2 denotes the proportion of male births from the second child. The saving variables are constructed based on the value of each item purchased (deposits) and sold (withdrawals) during 2005-06. PC denotes per capita. Total wealth refers to the household wealth in land, assets, livestock, formal savings, jewelry, and durable goods. Employment variables refer to the number of days worked between 1982 and 2006. *** 1%, ** 5%, * 10%.

Table 2: Impact of Expected Dowry on Household Per Capita Saving

Dependent variable:	**Household Per Capita Saving in 2005-06**				
	(1)	(2)	(3)	(4)	(5)
Firstborn girl	-415.44	-539.34**	-705.87***	-1,438.86*	-690.33
	(396.75)	(192.46)	(202.08)	(814.12)	(637.80)
Expected dowry	260.53*	-52.56	-87.43	-256.99	-237.69
	(127.66)	(182.32)	(152.50)	(164.52)	(162.22)
*Firstborn girl * Expected dowry*	4.93	155.79**	206.67**	532.94***	402.10**
	(168.54)	(68.91)	(75.39)	(181.13)	(152.50)
N	4,815	4,411	4,411	4,411	4,411
Dep var mean			938		
Parents' Education		x	x	x	x
Caste-Religion FE		x	x	x	x
YOB FE		x	x	x	x
State FE		x	x	x	x
State FE*YOB FE			x	x	x
Caste FE*YOB FE			x	x	x
Caste FE*State FE			x	x	x
Firstborn girl*YOB FE				x	x
Firstborn girl*State FE				x	x
Firstborn girl*Caste FE				x	x
No. of children & HH wealth					x

NOTES: This table reports the coefficients corresponding to specification (1) estimated for nuclear households. Each column is a separate regression. The dependent variable is total per capita household saving in financial institutions, jewelry, livestock, and durable goods. *Firstborn girl* indicates that the firstborn child of the household is female. Expected dowry for a female (male) child is defined as the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Dep var mean is the mean of the dependent variable for firstborn boy households. Parents' education refers to parents' years of schooling. Caste-Religion refers to indicators for SC, ST, OBC, other castes, Hindu, Muslim, Sikh, Christian, Jain, and Buddhist. YOB refers to the year of birth of the firstborn child. HH wealth refers to per capita household wealth in land, assets, livestock, formal savings, jewelry, and durable goods. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table 3: Impact of Expected Dowry on Household Per Capita Saving by Number of Children

Dependent Variable:	**Household per capita saving in 2005-06**		
	1 Child	1 or 2 Children	1, 2, or 3 Children
	(1)	(2)	(3)
Firstborn girl	-10,675.50**	-1,773.83	-1,043.89
	(4,068.64)	(1,034.43)	(897.18)
Expected dowry	-301.42	-247.04	-262.31
	(263.92)	(209.49)	(182.95)
*Firstborn girl * Expected dowry*	1,265.64**	663.75***	539.90**
	(590.60)	(212.14)	(194.05)
Dep var mean	1,380	1,068	971
N	1,559	3,123	3,934

NOTES: This table reports the coefficients corresponding to specification (1) by the number of children in a household. The sample is restricted to nuclear households. Each column within a panel corresponds to a different regression. Columns 1/2/3 respectively show the coefficients for households with 1, 1 or 2, and 1 or 2 or 3 children. *Firstborn girl* indicates that the firstborn child of the household is female. Expected dowry for a female (male) child is defined as the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Dep var mean is the mean of the dependent variable for firstborn boy households. All regressions control for all main and interaction fixed effects for caste, state, year of first birth, and gender of the firstborn child. We also control for parents' years of schooling and religion. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table 4: Impact of Expected Dowry on Types of Household Per Capita Saving

Dependent variable:	**Formal saving**	**Saving in jewelry**	**Saving in livestock**	**Saving in durable goods**
	(1)	(2)	(3)	(4)
Firstborn girl	-2,073.38**	124.56	813.20**	80.26
	(855.15)	(150.00)	(352.41)	(100.32)
Expected dowry	-233.01	-23.79	-69.17	24.09
	(143.71)	(45.68)	(125.95)	(26.04)
*Firstborn girl * Expected dowry*	497.99**	-4.56	109.58	-26.52
	(195.32)	(33.13)	(77.50)	(22.00)
N	4,411	4,410	2,589	4,408
Dep var mean	645	137	-143	239

NOTES: This table reports the coefficients corresponding to specification (1) for different types of saving. The sample is restricted to nuclear households. Each column is a separate regression. The dependent variables in each column are per capita household saving in financial institutions, jewelry, livestock, and durable goods. *Firstborn girl* indicates that the firstborn child of the household is female. Expected dowry for a female (male) child is defined as the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Dep var mean is the mean of the dependent variable for firstborn boy households. Each regression controls for all main and interaction fixed effects for caste, state, year of first birth, and gender of the firstborn child. We also control for parents' years of schooling and religion. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table 5: Impact of Expected Dowry on No. of Children and Fraction of Sons

Dependent variable:	**No. of children**			**Fraction sons**		
	(1)	(2)	(3)	(4)	(5)	(6)
Firstborn girl	0.14*	0.15*	0.07	0.10**	0.12**	-0.08
	(0.07)	(0.08)	(0.16)	(0.04)	(0.05)	(0.11)
Expected dowry	-0.07**	0.01	0.02	0.01	0.01	0.01
	(0.03)	(0.06)	(0.06)	(0.01)	(0.03)	(0.04)
*Firstborn girl * Expected dowry*	0.03	0.03	0.03	-0.02	-0.03	-0.01
	(0.03)	(0.03)	(0.04)	(0.01)	(0.02)	(0.02)
N		4,411			2,852	
Dep Var Mean		1.97			0.53	
Parents' Education	x	x	x	x	x	x
Caste-Religion FE	x	x	x	x	x	x
YOB FE	x	x	x	x	x	x
State FE	x	x	x	x	x	x
State FE*YOB FE		x	x		x	x
Caste FE*YOB FE		x	x		x	x
Caste FE*State FE		x	x		x	x
First Girl*YOB FE			x			x
First Girl*State FE			x			x
First Girl*Caste FE			x			x

NOTES: This table reports the coefficients corresponding to specification (1) estimated for nuclear households. Each column is a separate regression. The dependent variable for the first (later) three columns is the total number of children in the household (the proportion of male births among second and higher parity births). *Firstborn girl* indicates that the firstborn child of the household is female. Expected dowry for a female (male) child is defined as the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Dep var mean is the mean of the dependent variable for firstborn-boy households. Parents' education refers to parents' years of schooling. Caste-Religion refers to indicators for SC, ST, OBC, other castes, Hindu, Muslim, Sikh, Christian, Jain, and Buddhist. YOB refers to the year of birth of the firstborn child. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table 6: Impact of Expected Dowry on Household Per Capita Saving for Firstborn Son Sample

Dependent Variable:	**Total household per capita saving in 2005-06**
Net no. of girls	-303.07
	(201.93)
Expected dowry	-85.44
	(215.50)
*Net no. of girls * Expected dowry*	168.63*
	(87.31)
Dep var mean	938
N	2,460

NOTES: Household data is restricted to nuclear households whose firstborn child is male. The dependent variable is total per capita household saving in financial institutions, jewelry, livestock, and durable goods. *Net no. of girls* is the difference between the number of girls and boys in the household. Expected dowry for a female (male) child is defined as the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Dep var mean is the mean of the dependent variable for all firstborn boy households. We control for all main and interaction fixed effects for caste, state, year of first birth, and gender of the firstborn child. We also control for parents' years of schooling and religion. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table 7: Impact of Expected Dowry on Household Per Capita Saving by Measures of Wealth

Dependent variable:	**Household Per Capita Saving in 2005-06**	
	Above median wealth	Below median wealth
	(1)	(2)
Firstborn girl	-3,171.40*	706.71*
	(1,497.42)	(354.73)
Expected dowry	-581.38	-178.80
	(407.99)	(182.32)
*Firstborn girl * Expected dowry*	813.18**	13.35
	(298.69)	(74.04)
Dep Var Mean	1,543	283
N	2,173	2,238

NOTES: Household data is restricted to nuclear households. Each column is a separate regression. *Firstborn girl* indicates that the first-born child of the household is female. Expected dowry for a female (male) child is defined as the average dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Dep var mean is the mean of the dependent variable for the firstborn boy households. Each regression controls for all main and interaction fixed effects for caste, state, year of first birth, and gender of the firstborn child. We also control for parents' years of schooling and religion. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table 8: Impact of Expected Dowry on Father's Labor Supply

Dependent Variable:	**Father's days worked in a year**		
	All	Above median wealth	Below median wealth
	(1)	(2)	(3)
*Firstborn girl * Post*	-9.21*	-11.24	-1.43
	(4.37)	(8.08)	(8.80)
*Expected dowry * Post*	-1.08	-2.63	2.53
	(2.19)	(2.63)	(2.28)
*Firstborn girl * Post * Expected dowry*	4.13**	3.78*	1.21
	(1.63)	(1.96)	(3.92)
Dep Var Mean	174	165	184
N	110,408	53,931	55,378

NOTES: This table reports the coefficients corresponding to specification (2). The sample is restricted to nuclear households. Each column corresponds to a different regression. The dependent variable is the number of days worked each year. *Firstborn girl* indicates that the firstborn child of the household is female. Post indicates that the year of labor is later than the first child's year of birth. Expected dowry for a female (male) child is defined as the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Dep var mean is the mean of the dependent variable for firstborn boy households. All regressions include individual, year, year-by-state, year-by-caste, year-by-year of birth of the firstborn child fixed effects. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table 9: Impact of Expected Dowry on Education Expenditure

Dependent variable:	**Expenditures on Child's Education**			
	Boy		Girl	
	(1)	(2)	(3)	(4)
Firstborn girl	778.71***	411.55*	64.81	32.74
	(145.92)	(207.14)	(259.23)	(379.74)
Expected dowry	-39.76	-62.10	-56.29	-50.53
	(64.00)	(59.17)	(43.95)	(57.19)
*Firstborn girl * Expected dowry*	-61.12**	24.51	137.64**	129.16
	(24.48)	(41.79)	(53.03)	(82.77)
Dep Var Mean	809		420	
N	5,408		4,542	
Nuclear Family	x	x	x	x
Parents' Education	x	x	x	x
Caste-Religion FE	x	x	x	x
YOB FE	x	x	x	x
YOFB FE	x	x	x	x
Birthorder FE	x	x	x	x
State FE	x	x	x	x
State FE*YOFB FE	x	x	x	x
Caste FE*YOFB FE	x	x	x	x
Birthorder FE*YOFB FE	x	x	x	x
Caste FE*State FE	x	x	x	x
Firstborn girl*YOFB FE	x	x	x	x
Firstborn girl*State FE	x	x	x	x
Firstborn girl*Caste FE		x		x

NOTES: The sample includes all children under the age of 15. The dependent variable is expenditures on child's education: expenditures on fees, uniforms, books/stationery, transport, hostel, and private coaching/tuition. Each column corresponds to a different regression. The column (1) and (2) show the results for the sample of boys. The column (3) and (4) show the results for the sample of girls. *Firstborn girl* indicates that the oldest sibling of the child is female. Expected dowry for the first-born girl (boy) is defined as the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Dep var mean is the mean of the dependent variable for firstborn boy households. Parents' education refers to parents' years of schooling. Caste-Religion refers to indicators for SC, ST, OBC, other castes, Hindu, Muslim, Sikh, Christian, Jain, and Buddhist. YO(F)B refers to the year of birth of the (firstborn) child. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

A Appendix

Table A.1: Descriptive Statistics on Wedding Expenditure from the 2004-05 India Human Development Survey

Panel A: By caste										
	Urban					Rural				
	Brahmin	OBC	SC	ST	Others	Brahmin	OBC	SC	ST	Others
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Expenditure by bride's family	186,683	120,818	96,038	74,689	165,710	140,575	89,973	64,194	35,007	120,038
Expenditure by groom's family	128,166	74,673	63,616	58,691	108,188	92,365	56,380	43,539	29,176	74,162
Difference	58,617	46,145	32,423	15,997	57,522	48,210	33,589	20,655	5,835	45,875
N	1,313	5,452	2,322	499	4,956	1,108	10,834	6,011	2,939	6,118
Panel B: By religion										
	Urban				Rural					
	Hindu	Muslim	Christian	Sikh	Hindu	Muslim	Christian	Sikh		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		
Expenditure by bride's family	137,992	119,959	143,553	194,341	84,014	100,849	103,211	161,513		
Expenditure by groom's family	90,649	76,515	66,274	132,988	55,309	57,894	48,767	107,471		
Difference	47,350	43,444	77,278	61,353	28,706	42,956	54,443	54,042		
N	11,286	2,215	514	258	22,239	2,573	862	732		

NOTES: This table provides means of wedding expenditure in the 2004-05 India Human Development Survey (IHDS). The survey asks "At the time of the marriage in your community (jati) for a family like yours, how much money is usually spent by the girl(boy)'s family?" The IHDS data set has five broad social groups: (1) Brahmin (2) OBC (3) SC (4) ST (5) Others.

Table A.2: Heterogenous Impact of Expected Dowry on Household Per Capita Saving

Dependent variable:	**Total household per capita saving in 2005-06**			
	(1)	(2)	(3)	(4)
Sub-sample →	**Father high education**	**Father low education**	**Mother high education**	**Mother low education**
Firstborn girl	-1,795.35	4,794.56***	-3,620.22**	485.21
	(1,073.79)	(1,472.73)	(1,627.51)	(594.51)
Expected dowry	-482.74**	378.47	-579.39	-153.87
	(222.98)	(265.76)	(382.64)	(164.73)
*Firstborn girl * Expected dowry*	677.43**	-343.93	953.73**	5.59
	(243.34)	(390.55)	(369.02)	(182.71)
Dep var mean	1004	638	1356	643
N	2,886	1,525	1,814	2,597
Sub-sample →	**> Median dowry**	**< Median dowry**	**High son preference states**	**Low son preference states**
Firstborn girl	-5,675.30**	-767.90	-2,560.53***	-222.74
	(2,453.94)	(912.07)	(521.46)	(1,236.69)
Expected dowry	74.44	183.90	-503.89	-47.29
	(628.57)	(359.28)	(268.74)	(146.91)
*Firstborn girl * Expected dowry*	872.58**	125.21	723.82***	246.91
	(354.25)	(388.11)	(127.23)	(279.56)
Dep var mean	1283	727	409	1407
N	1,605	2,806	2,123	2,288

NOTES: This table reports the coefficients corresponding to specification (1) by parents' education, dowry expectation, and son preference. The sample is restricted to nuclear households. The dependent variables in each column denote per capita household savings. Each column within a panel corresponds to a different regression and uses a different sub-sample. Father (Mother) high (low) education denotes the sub-sample where fathers (mothers) of the first-born child completed more ($\leq$) than 5 years of schooling. $>$ ($<$) Median dowry denotes the sub-sample whose dowry expectation is $>$ ($<$) than the median value. High (low) son preference states denotes the sub-sample that lives in Haryana, Punjab, Rajasthan, Uttar Pradesh, Madhya Pradesh, Maharashtra, or Himachal Pradesh (the other states). *Firstborn girl* indicates that the first-born child of the household is female. Expected dowry for a female (male) child is defined as the average dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Dep var mean is the mean of the dependent variable for the firstborn boy households. Each regression controls for all main and interaction fixed effects for caste, state, year of first birth, and gender of the firstborn child. We also control for parents' years of schooling and religion. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table A.3: Impact of Expected Dowry Defined using Caste and Religion on Household Per Capita Saving

Dependent variable:	**Total household per capita saving in 2005-06**				
	(1)	(2)	(3)	(4)	(5)
Firstborn girl	-484.81	-477.51***	-602.56***	-373.95	-219.17
	(329.23)	(160.16)	(171.85)	(587.25)	(564.77)
Expected dowry	170.85	-105.16	33.41	-21.63	24.28
	(133.84)	(146.99)	(167.44)	(166.13)	(188.97)
*Firstborn girl * Expected dowry*	30.36	130.33**	167.61**	264.49*	272.68**
	(138.58)	(55.45)	(60.10)	(126.61)	(120.66)
N	4,811	4,407	4,407	4,407	4,407
Dep var mean			938		
Parents' Education		x	x	x	x
Caste-Religion FE		x	x	x	x
YOB FE		x	x	x	x
State FE		x	x	x	x
State FE*YOB FE			x	x	x
Caste FE*YOB FE			x	x	x
Caste FE*State FE			x	x	x
Firstborn girl*YOB FE				x	x
Firstborn girl*State FE				x	x
Firstborn girl*Caste FE				x	x
No. of children & HH wealth					x

NOTES: This table reports the coefficients corresponding to specification (1) estimated for nuclear households. Each column is a separate regression. The dependent variable is total per capita household saving in financial institutions, jewelry, livestock, and durable goods. *Firstborn girl* indicates that the firstborn child of the household is female. Expected dowry for a female (male) child is defined as the average dowry paid (received) by brides (grooms) from the same social group and state as the child and who married during the year of the child's birth or the prior four years. We construct seven social groups based on the caste and religion. Specifically, we split Hindus by caste and use other religions as it is (i.e., Hindu SCs, Hindu STs, Hindu OBCs, Hindu OCs, Muslims, Sikhs, Other religions). Dep var mean is the mean of the dependent variable for firstborn boy households. Parents' education refers to parents' years of schooling. Caste-Religion refers to indicators for SC, ST, OBC, other castes, Hindu, Muslim, Sikh, Christian, Jain, and Buddhist. HH wealth refers to per capita household wealth in land, assets, livestock, formal savings, jewelry, and durable goods. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table A.4: Impact of Expected Dowry Defined Around Year of Birth on Household Per Capita Saving

Dependent variable:	**Total household per capita saving in 2005-06**				
	(1)	(2)	(3)	(4)	(5)
Firstborn girl	-423.09	-501.66**	-597.13***	-1,108.93	-345.07
	(327.74)	(174.94)	(179.50)	(731.57)	(572.85)
Expected dowry	256.85**	-12.41	-302.89	-413.91	-326.55
	(109.95)	(165.43)	(212.64)	(253.35)	(269.01)
*Firstborn girl * Expected dowry*	8.74	143.43**	165.87**	472.07***	331.25**
	(142.41)	(57.77)	(60.83)	(158.97)	(125.19)
N	4,813	4,409	4,409	4,409	4,409
Dep var mean			938		
Parents' Education		x	x	x	x
Caste-Religion FE		x	x	x	x
YOB FE		x	x	x	x
State FE		x	x	x	x
State FE*YOB FE			x	x	x
Caste FE*YOB FE			x	x	x
Caste FE*State FE			x	x	x
Firstborn girl*YOB FE				x	x
Firstborn girl*State FE				x	x
Firstborn girl*Caste FE				x	x
No. of children & HH wealth					x

NOTES: This table reports the coefficients corresponding to specification (1) estimated for nuclear households. Each column is a separate regression. The dependent variable is total per capita household saving in financial institutions, jewelry, livestock, and durable goods. *Firstborn girl* indicates that the firstborn child of the household is female. Expected dowry for a female (male) child is defined as the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married around the year of birth (YOB) of the child (i.e., during $YOB+2, YOB+1, YOB, YOB-1, YOB-2$). Dep var mean is the mean of the dependent variable for firstborn-boy households. Parents' education refers to parents' years of schooling. Caste-Religion refers to indicators for SC, ST, OBC, other castes, Hindu, Muslim, Sikh, Christian, Jain, and Buddhist. HH wealth refers to per capita household wealth in land, assets, livestock, formal savings, jewelry, and durable goods. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table A.5: Impact of *Expected Gross Marriage Payments* on Household Per Capita Saving

Dependent variable:	**Total household per capita saving in 2005-06**				
	(1)	(2)	(3)	(4)	(5)
Firstborn girl	-262.42	-546.32**	-717.24***	-1,671.47**	-909.32
	(323.38)	(200.70)	(211.74)	(745.93)	(616.93)
Expected gross payment by bride	211.43	-54.28	-134.40	-321.70	-303.07
	(160.70)	(197.09)	(177.65)	(198.26)	(193.73)
Expected gross payment by groom	1,061.05**	887.57	-45.03	198.51	243.09
	(483.64)	(1,068.86)	(544.70)	(557.26)	(551.23)
*Firstborn girl * Expected gross payment by bride*	9.94	170.38**	217.60**	586.28***	453.17***
	(164.66)	(73.06)	(79.25)	(170.59)	(152.64)
*Firstborn girl * Expected gross payment by groom*	-168.96	-253.94	-275.15	-863.21**	-582.03
	(311.91)	(148.09)	(203.66)	(380.25)	(349.04)
Dep Var Mean			938		
N	4,815	4,411	4,411	4,411	4,411
Parents' Education		x	x	x	x
Caste-Religion FE		x	x	x	x
YOB FE		x	x	x	x
State FE		x	x	x	x
State FE*YOB FE			x	x	x
Caste FE*YOB FE			x	x	x
Caste FE*State FE			x	x	x
Female*YOB FE				x	x
Female*State FE				x	x
Female*Caste FE				x	x
No. of Children and HH Wealth					x

NOTES: Instead of net dowry expectation in specification (1), here we use two gross dowry variables: *Expected gross (wedding) payment by bride* and *Expected gross (wedding) payment by groom*. Expected gross payment by bride (groom) are defined as the average value of gifts given by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Household data is restricted to nuclear households. Each column is a separate regression. *Firstborn girl* indicates that the firstborn child of the household is female. Dep var mean is the mean of the dependent variable for firstborn-boy households. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table A.6: Inference Using State-Level Wild-Cluster Bootstrapped Standard Errors

Dependent variable:	**Total household per capita saving in 2005-06**				
	(1)	(2)	(3)	(4)	(5)
*Firstborn girl * Expected dowry*	4.93	155.79*	206.67**	532.94**	402.10**
	(160.47)	(83.37)	(96.98)	(267.22)	(204.07)
N	4,815	4,411	4,411	4,411	4,411
Dep var mean			938		
Parents' Education		x	x	x	x
Caste-Religion FE		x	x	x	x
YOB FE		x	x	x	x
State FE		x	x	x	x
State FE*YOB FE			x	x	x
Caste FE*YOB FE			x	x	x
Caste FE*State FE			x	x	x
Firstborn girl*YOB FE				x	x
Firstborn girl*State FE				x	x
Firstborn girl*Caste FE				x	x
No. of children & HH wealth					x

NOTES: This table reports the coefficients corresponding to specification (1) estimated for nuclear households. Each column is a separate regression. The dependent variable is total per capita household saving in financial institutions, jewelry, livestock, and durable goods. *Firstborn girl* indicates that the firstborn child of the household is female. Expected dowry for a female (male) child is defined as the net average dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Dep var mean is the mean of the dependent variable for firstborn-boy households. Parents' education refers to parents' years of schooling. Caste-Religion refers to indicators for SC, ST, OBC, other castes, Hindu, Muslim, Sikh, Christian, Jain, and Buddhist. YOB refers to the year of birth of the firstborn child. HH wealth refers to per capita household wealth in land, assets, livestock, formal savings, jewelry, and durable goods. Standard errors in parentheses are constructed using a cluster robust percentile-t wild bootstrap procedure and are clustered by state. Significance is based on bootstrapped p-values. *** 1%, ** 5%, * 10%.

Table A.7: Robustness Checks for Outliers and Missing Data–Savings

Dependent variable:	**Total household per capita saving in 2005-06**			
	(1)	(2)	(3)	(4)
Firstborn girl	-1,438.86*	-1,002.56	-1,392.64	-1,975.11*
	(814.12)	(691.81)	(846.89)	(996.37)
Expected dowry	-256.99	-210.36	-351.59*	-408.39*
	(164.52)	(193.31)	(181.55)	(193.15)
*Firstborn girl * Expected dowry*	532.94***	440.23**	347.33**	382.07**
	(181.13)	(176.36)	(146.77)	(163.91)
N	4,411	4,244	4,042	3,886
Dep var mean	938	877	938	877

NOTES: This table reports the coefficients corresponding to specification (1) estimated for nuclear households. Each column is a separate regression. Column (1) shows the results with the original sample used in Table 2. Column (2) drops households whose firstborn child were born after 2006. In column (3) we construct expected dowry only using marriages where both gifts are non-missing. Column (4) uses both restrictions used in columns (2) and (3). *Firstborn girl* indicates that the firstborn child of the household is female. Expected dowry for a female (male) child is defined as the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Dep var mean is the mean of the dependent variable for firstborn boy households. Each regression controls for all main and interaction fixed effects for caste, state, year of first birth, and gender of the firstborn child. We also control for parents' years of schooling and religion. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table A.8: Robustness Checks for Outliers and Missing Data–Father's Labor Supply

Dependent Variable:	**Days worked in a year**			
	(1)	(2)	(3)	(4)
Firstborn girl * Post	-9.21*	-9.10*	-5.63	-5.51
	(4.37)	(4.34)	(4.18)	(4.14)
Expected dowry * Post	-1.08	-1.13	-0.79	-0.79
	(2.19)	(2.20)	(1.90)	(1.76)
Firstborn girl * Post * *Expected dowry*	4.13**	4.12**	3.06*	3.06*
	(1.63)	(1.61)	(1.75)	(1.74)
Dep Var Mean	174.49	178.20	174.49	178.20
N	110,408	106,245	101,191	97,303

NOTES: This table reports the coefficients corresponding to specification (2) estimated for nuclear households. Each column is a separate regression. Column (1) shows the results with the original sample used in Table 6. Column (2) drops households whose firstborn child were born after 2006. In column (3), we construct expected dowry only using marriages where both gifts are non-missing. Column (4) uses both restrictions used in columns (2) and (3). *Firstborn girl* indicates that the firstborn child of the household is female. Post indicates that the year of labor is later than the first child's year of birth. Expected dowry for a female (male) child is defined as the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. Dep var mean is the mean of the dependent variable for firstborn boy households. All regressions include individual, year, year-by-state, year-by-caste, year-by-year of birth of the firstborn child fixed effects. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table A.9: Impact of Expected Dowry on Father's Labor Supply by Measures of Wealth

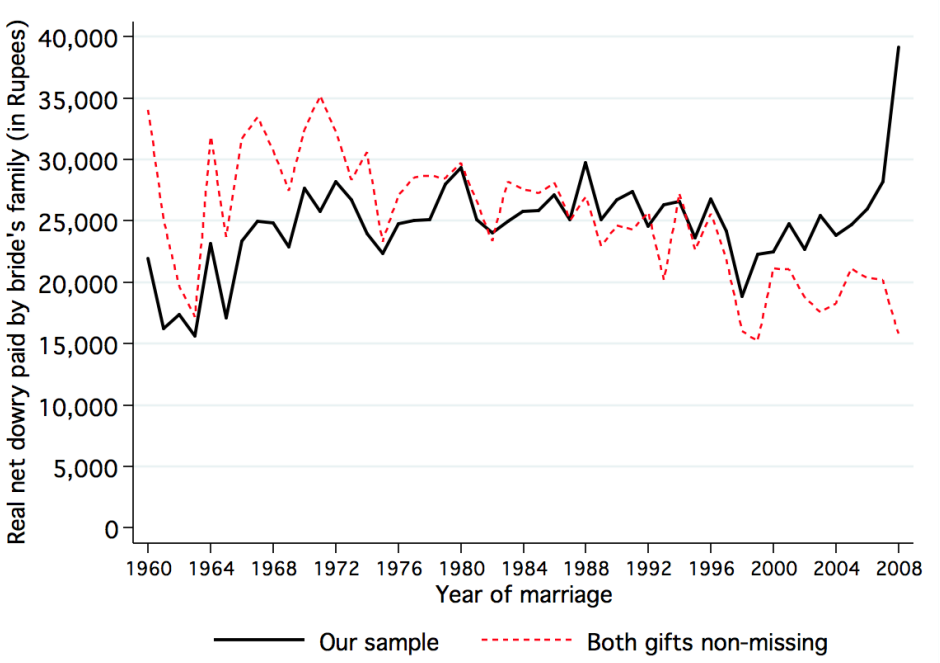
Dependent variable:	**Days worked in a year**
Firstborn girl * Post	-10.42
	(8.18)
Expected dowry * *Post*	-3.26
	(2.04)
Below median wealth * Post	-22.13**
	(7.62)
Firstborn girl * *Expected dowry* * *Post*	3.70*
	(1.93)
Firstborn girl * *Below median wealth* * Post	8.50
	(13.92)
Expected dowry * *Below median wealth* * *Post*	8.65***
	(2.94)
Firstborn girl * *Expected dowry* * *Below median wealth* * Post	-2.66
	(5.04)
Dep Var Mean	174
N	109,309

NOTES: The sample is restricted to nuclear households. Each column corresponds to a different regression. The dependent variable is the number of days worked each year. The first (latter) two columns show the results for fathers (mothers). *Firstborn girl* indicates that the firstborn child of the household is female. Post indicates that the year of labor is later than the first child's year of birth. Expected dowry for a female (male) child is defined as the average net dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. *Poor* is a dummy variable which is set to 1 if the household is defined as a poor family based on the criteria of each column and zero otherwise. In column (1) and (3), a household is *Poor* if it is a beneficiary of BPL card (poorest or less poor). In column (2) and (4), a household is *Poor* if its wealth per capita is less than the median. Dep var mean is the mean of the dependent variable for the firstborn boy households. Dep var mean is the mean of the dependent variable for firstborn boy households. All regressions include individual, year, year-by-state, year-by-caste, year-by-year of birth of the firstborn child fixed effects. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

B Note on Missing Observations

In total, we have 40,623 marriages for which the year of marriage is available and is during 1960-2008. We exclude marriages where data on both gifts given and received is missing (1,079) leaving us with 39,544 observations. While 18,275 (46 percent) observations have information on both gifts, the remaining 21,269 (54 percent) have one of them missing. In the latter case, when only one of the two is missing, we assume that the missing value equals zero. Note, however, that in 95 percent of the cases where one of the gifts is missing, the missing data is for gifts from the groom's side. This implies that by replacing missing data with zeros we are primarily underestimating gifts from the groom's side, and in turn overestimating net dowry.

Figure B.1: Trends in Real Marriage Payments (in Rupees), by Year of Marriage



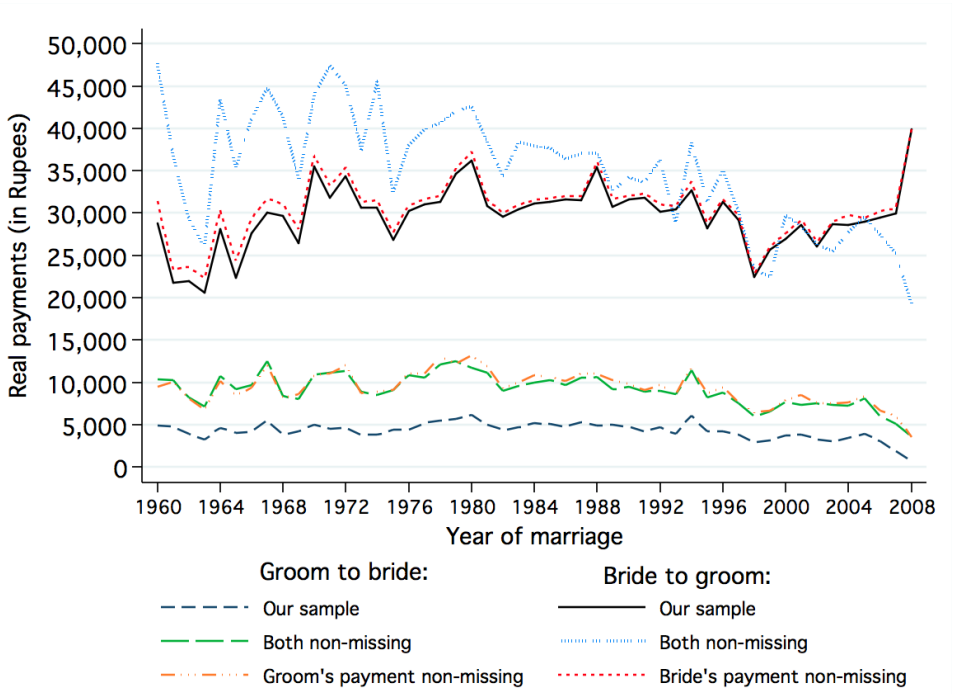
NOTES: This figure plots the raw unweighted average of the net dowry paid by the bride's family by year of marriage. The dashed line only uses observations that have non-missing information on gifts from both bride's and groom's sides. The solid line also includes observations where information on one of the gifts is missing and which we replace with a zero in calculating the net dowry.

Figure B.1 plots the trends in net dowry for our sample and for the sub-sample where both gifts are non-missing. The two lines are largely similar except in recent years for which we do not have a large enough sample size, suggesting that our analysis is not substantively affected by the treatment of missing data. This is not surprising since the bulk of the missing information is for groom's payments that are several orders of magnitude smaller than the bride's payments.

Figure B.2 plots the trends for gross payments. In addition to the plots corresponding to Figure B.1 (i.e., our sample and when both gifts are non-missing), a third set of lines plots average payments using non-missing data for each gift variable irrespective of whether the other gift variable

is missing. As expected, for groom's payments, our sample means are lower (by about Rs. 5,000) than those calculated using non-missing data. Average bride's payments are also somewhat smaller in our sample and the sample with non-missing bride's payments when compared to the sample where both gifts are non-missing.

Figure B.2: Trends in Real Marriage Payments (in Rupees), by Year of Marriage



NOTES: This figure plots the raw unweighted average of the net dowry paid by the bride's family by year of marriage. The dashed line only uses observations that have non-missing information on gifts from both bride's and groom's sides. The solid line also includes observations where information on one of the gifts is missing and which we replace with a zero in calculating the net dowry.

Table A.7 presents the results for savings outcome while Table A.8 does the same for parents' labor supply. We show that our findings are not driven by our treatment of missing data. The results remain the same if we (1) drop post-2006 data, (2) construct expected dowry only using marriages where both gifts are non-missing, and (3) do both (1) and (2).

Table C.10: Impact of Expected Dowry on Household Per Capita Saving by Measures of Wealth

Dependent variable: Total household per capita saving in 2005-06	
Firstborn girl	-1,548.99
	(911.17)
Expected dowry	-263.62
	(152.95)
Below median wealth	-903.70
	(585.78)
*Firstborn girl * Below median wealth*	805.28
	(518.20)
*Expected dowry * Below median wealth*	-8.10
	(227.51)
*Firstborn girl * Expected dowry*	513.91**
	(183.18)
*Firstborn girl * Expected dowry * Below median wealth*	-143.74
	(170.00)
Dep Var Mean	938
N	4,367

NOTES: Household data is restricted to nuclear households. Each column is a separate regression. *Firstborn girl* indicates that the first-born child of the household is female. Expected dowry for a female (male) child is defined as the average dowry paid (received) by brides (grooms) from the same caste and state as the child and who married during the year of the child's birth or the prior four years. *Poor* is a dummy variable which is set to 1 if the household is defined as a poor family based on the criteria of each column and zero otherwise. A household is *Below median wealth* if its wealth per capita is less than the median. Dep var mean is the mean of the dependent variable for the firstborn boy households. Each regression controls for all main and interaction fixed effects for caste, state, year of first birth, and gender of the firstborn child. We also control for parents' years of schooling and religion. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

C ONLINE APPENDIX

Table C.11: Impact of Expected Dowry Defined Around Year of Birth on Parents' Labor Supply

Dependent Variable:	**Days worked**	
	(1)	(2)
	Father	Mother
Firstborn girl * Post	-9.76**	-4.35
	(3.70)	(6.43)
Expected dowry * Post	-1.37	5.49**
	(2.25)	(2.48)
Firstborn girl * Post * *Expected dowry*	4.42***	3.00
	(1.28)	(1.90)
Dep Var Mean	174	176
N	110,358	120,039

NOTES: This table reports the coefficients corresponding to specification (2). The sample is restricted to nuclear households. Each column within a panel corresponds to a different regression. The dependent variable is the number of days worked each year. Column (1) and (2) show the results for fathers and mothers, respectively. *Firstborn girl* indicates that the firstborn child of the household is female. Post indicates that the year of labor is later than the first child's year of birth. Expected dowry for a female (male) child is defined as the average dowry paid (received) by brides (grooms) from the same caste and state as the child and who married around the year of birth (YOB) of the child (i.e., during $YOB+2, YOB+1, YOB, YOB-1, YOB-2$). Dep var mean is the mean of the dependent variable for firstborn boy households. All regressions include individual, year, year-by-state, year-by-caste, year-by-year of birth of the firstborn child fixed effects. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.

Table C.12: Impact of Expected Dowry Defined using Caste and Religion on Parents' Labor Supply

Dependent Variable:	**Days worked**	
	(1)	(2)
	Father	Mother
Firstborn girl * Post	-5.89	-4.20
	(4.25)	(6.78)
Expected dowry * Post	0.06	4.41*
	(1.41)	(2.25)
Firstborn girl * Post * *Expected dowry*	2.94**	2.97
	(1.38)	(2.11)
Dep Var Mean	174	176
N	110,308	119,989

NOTES: This table reports the coefficients corresponding to specification (2). The sample is restricted to nuclear households. Each column within a panel corresponds to a different regression. The dependent variable is the number of days worked each year. Column (1) and (2) show the results for fathers and mothers, respectively. *Firstborn girl* indicates that the firstborn child of the household is female. Post indicates that the year of labor is later than the first child's year of birth. Expected dowry for a female (male) child is defined as the average dowry paid (received) by brides(grooms) from the same social group and state as the child and who married during the year of the child's birth or the prior four years. We construct seven social groups based on the caste and religion. Specifically, we split Hindus by caste and use other religions as it is (i.e., Hindu SCs, Hindu STs, Hindu OBCs, Hindu OCs, Muslims, Sikhs, Other religions). Dep var mean is the mean of the dependent variable for firstborn boy households. All regressions include individual, year, year-by-state, year-by-caste, year-by-year of birth of the firstborn child fixed effects. Standard errors in parentheses are clustered by state. *** 1%, ** 5%, * 10%.