

The Price of Marriage: Net vs. Gross Flows and the South Asian Dowry Debate*

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Abstract

The rise in dowry payments in India has been taken as evidence that women increasingly are at a disadvantage on the marriage market and must pay for marriage. Moreover, high dowries, it is argued, add to the plight of parents of daughters and have thus contributed to the scarcity of women (brides). However, the logic is curious, and, this paper argues, flawed. The term dowry can mean different things, and it may be useful to distinguish between the assets the bride brings at the time of marriage (gross dowry) and those netted against the groom payments (net dowry). The former is

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what is generally meant by dowry, while the latter is a concept used mainly by economists. I show that there is no evidence of an increase in real *net* dowries post 1950 in the ICRISAT data set – a data set that has featured prominently in the literature. I take this to suggest that the widespread reports of dowry inflation refer to an increase in gross dowry, a development which may merely reflect greater parental affluence.

JEL classifications: J12, J16

1 Introduction

Dowries have risen in India in the last five decades, leading observers to conclude that women increasingly must pay to marry. This also offers a ready explanation to abnormally male sex ratios.¹ Dowries, it is argued, render daughters less desirable than sons, and are thus a rationale for parents to favor the latter. For instance, the Economist wrote: “Boys inherit the family name and land, and provide an old-age insurance policy. Girls join their husbands’ families, and need dowries.”²

Following Becker, economists have modelled dowries as negative bride-prices, i.e., the bride minus groom marriage payments at the time of marriage, henceforth

¹The 1901 census showed 972 women per 1000 males, a hundred years later, the 2001 census return was 933.

²Missing Sisters, April 17, 2003.

“net dowries”. Moreover, several papers, e.g., Billig (1991), Billig (1992), Rao (1993) and Anderson (2003), have sought to explain dowry increases through deteriorating terms of trades for brides. However, using the same data as Rao (1993) this paper finds that dowry inflation in these data is limited to the pre-1950 period, and absent thereafter.

The lack of support for dowry inflation after 1950 is puzzling given widespread reports to the contrary. This paper proposes that the key to this puzzle may lie in something as mundane as the definition of dowry: the anthropological (and common) usage of the term differs from the negative bride-price definition proposed by Becker (1991). Dowry in everyday parlance refers to the gross assets brought by the bride at the time of marriage, henceforth “gross dowry.” Beckerian dowry, on the other hand, refers to the bride’s contribution minus the groom’s payments, henceforth “net dowry.” For example, if the bride brought \$15 and the groom paid \$20,³ according to the Beckerian model we would observe a bride-price of \$5 (or a dowry of -\$5). Anthropologists, on the other hand, would record a dowry of \$15. Clearly, gross dowry may rise without there being an increase in the bride’s net contribution at the time of marriage, or a deterioration in the terms of trade of brides.

Moreover, the existence of (gross) dowry has been interpreted as evidence

³To her or her parents.

that women pay for marriage, e.g., Tertilt (2005). However, neither gross nor net dowry indicates that women pay for marriage. The implicit price for marriage would net male against female contributions over the entire life of the couple, not only at the time of marriage. The fact that bride also contributes (gross dowry) or that she contributes more than the groom at the time of marriage (net dowry) does not imply that the bride (side) is a net contributor overall. In particular, the groom inherits from his parents and there are several reasons to think his (discounted) inheritance is higher than her dowry. Typically, parents give more to sons than daughters; parents of sons are richer than parents of daughters; and men marry down (hypergamy), that is, the parents of the groom are richer than the parents of the bride.

The remainder of the paper proceeds as follows. Section 2 briefly discusses Becker's theory of dowry as negative bride-price and the anthropological concepts of dowry and bride-price. The purpose is not to promote one concept over the other, but rather to draw attention to their co-existence. Section 3 presents the ICRISAT retrospective survey data on marriages conducted between 1923 and 1978 in South central India. While these data have been analyzed previously, and touted as evidence of dowry inflation in recent years, I find no evidence of net dowry inflation after 1950. Therefore, the frequently-stated case that women pay to marry remains to be proven. Section 4 concludes.

2 Dowry as Negative Bride Price or Female Inheritance

In the present context, it may be useful to distinguish between dowry as negative bride price and dowry as bequest.⁴ Dowry as negative bride price tends to emphasize the role of the marriage market in determining dowry, and places the focus on *net* dowry. Dowry as bequest, on the other hand, focusses on *gross* dowry. While not a superior concept in the abstract, it has the advantage of corresponding more closely to what is typically meant by the term.

2.1 Negative Bride Price

Becker (1991) proposed that inability to divide marital output during the course of a marriage may explain the need for lump-sum payments at the time of the wedding. Indivisibilities may arise because of public goods, or social norms dictating a fixed sharing rule.⁵ In the Beckerian framework, the payments are between bride and groom. If the net recipient were the bride, the net transfer was called the “bride-price” and if the net recipient were the groom, it was labelled “dowry”.

Thus, key features of Beckerian dowry were that: (i) indivisibilities in marital

⁴Of course, bequests may be considered by the marriage market, see Zhang (1994).

⁵Inability to commit to future sharing would have a similar effect.

output motivate lump sum payments at the time of marriage; (ii) dowry as a negative bride-price; and (iii) dowry (bride-price) refers to *net*, not gross, flows between the bride and groom.

Following Becker, economists and others have labelled dowries negative bride-prices or groom-prices and modelled these as the outcome of marriage market conditions. Accordingly, features such as the number of women relative to men, the intra-sex distribution of qualities, and the marriage regime (e.g., polygyny, monogamy, or polyandry), would have a bearing on bride-price (dowry).

Application of this framework to the Indian marriage market has proved a challenge, not least because of male sex ratios. Female scarcity would suggest that brides (or their parents) receive payments for marriage. To reconcile female scarcity with positive and rising dowries, two (potentially compatible) explanations have been proposed.

The so called marriage-squeeze hypothesis postulates that there are in fact more women than men on the marriage market. The argument is that men marry younger women and population growth means that younger cohorts are larger than older ones. Rao (1993) claimed empirical support for the marriage squeeze hypothesis. However, Rao's results could not be replicated by Edlund (2000) (using the same data). Moreover, there are several theoretical weaknesses with the argument. It relies on spousal age gaps being exogenous, while in fact

age gaps in India have shrunk substantially in the last century, see, for instance, Anderson (2000).

Another tack is to note that scarcity *per se* does not preclude *some* women from paying to marry, or the average payment from being positive. On a marriage market, intra-sex heterogeneity benefits the heterogeneous side, see Stapleton (1989). If men are more heterogeneous than women, some women may effectively pay to marry the better men. Thus, increased male differentiation could drive dowry inflation. Anderson (2003) argued that reduced emphasis on cast endogamy had had this effect. While a theoretical possibility, the empirical relevance of this explanation remains an open question.

2.2 Female Inheritance

Among the 1,267 pre-industrial societies in Murdoch's Ethnographic Atlas, 769 practise bride-price or bride-service (the groom works for the bride's family). Only 33 societies are characterized as dowry-giving.⁶ Are these dowry societies ones in which the bride pays the groom's family or works for them in order to marry? Not at all. Dowries, as viewed by anthropologists, are neither negative bride-prices nor *net* transfers. To cite Goody (1973):⁶ "Bridewealth [bride-price] and dowry then are very far from being mirror opposites. Indeed, the mirror opposite of bridewealth would be groomwealth; and of bride-service, groom-service.

⁶The remainder practise barter, i.e. female relative for a bride, or only token payments.

But there is little to be put in these two boxes by way of actual cases..." Thus, not only do dowries appear to be the exception rather the rule, the form these dowries takes deviate from the negative-bride price definition of Becker.

While dowry need not originate with the bride's parents (it may refer to assets she has accumulated herself) it typically refers to the assets she brings into the marriage. Thus, the term dowry has been used to denote fundamentally different concepts: dowry in (Beckerian) models treating dowry as negative bride-price pertains to the net transfer while the common usage of the term pertains to the gross transfer.⁷

Considering dowries as intergenerational transfers may provide additional insight into their incidence as well as reported increase. In particular, viewing dowries as front loaded bequests is consistent with the stylized fact that historically, dowry has been a high caste (class) phenomenon. If dowry is female inheritance, it is not surprising that gross dowry is higher among the wealthy. From the differential timing of bequests to sons and daughters, we would also expect net dowries to be higher among the wealthy. The reason is that the bride

⁷Moreover, the stylized fact is that the recipient of the bride-price is not the bride, but the bride's father, and the recipient of the dowry is not the groom, but the bride. This means that bride price and dowry are not only different in terms of their recipients, but also that a bride-price and a dowry of equal magnitude do not cancel each other, as noted by Zhang and Chan (1999).

comes into her inheritance at the time of her marriage, while the groom inherits later.⁸ Clearly, neither gross nor net dowry implies that parents of brides spend more than parents of grooms or that women pay for marriage. Dowry viewed as bequest is also consistent with the finding that dowries tend to increase in times of greater affluence, e.g., from remittances. For an example from medieval Europe, see Stuard (1981), and in more contemporary South India, see Billig (1992).

3 Data

Data are from a retrospective survey of marriages conducted in 1983 by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). These data have been used in a number of studies of South Asian dowry inflation, as noted in the Introduction.

ICRISAT conducted a stratified random sample of 40 households each from six villages in South-central India. The first household married in 1923 and the last in 1978. Information on the wife's father's land holding was missing for many of the couples married in the 1920s and the 1930s. Moreover, differential mortality by SES is likely to make the older couples positively selected compared to younger couples. While this is likely to be true for all ages, it is more problematic

⁸Possibly because of virilocality, see Botticini and Siow (2003).

for older couples. Therefore, for the regression analysis, I restrict the sample to couples married 1940 and after. Moreover, I lose the last two survey years from constructing the male and female heterogeneity measures. Descriptive statistics for the 160 observations in the resulting sample are in the note to Table 1. The reader is referred to Rao (1993) for further details on the data set.

Figure 1 plots net dowry ('000 1984 Rupees) against year of marriage for the whole sample (1923-78) by caste.⁹ Throughout the period, there were both negative and positive net dowries. Before 1950 there is a clear positive time trend to net dowries in the two highest castes, in particular, if the pre-1940 observations are included, while in the post-1950 period the trend is much attenuated if not negative. Thus, a first cut of the data yields no evidence of dowry inflation.

We now turn to examining how individual and marriage market characteristics relate to net dowries.

3.1 Econometric specification

To investigate the relationship between net dowry, spousal characteristics and the marriage market, I estimate the following equation:

$$d_{ij} = \beta_1 \cdot X_i + \beta_2 \cdot X_j + \beta_3 \cdot t_{ij} + \beta_4 \cdot p1950 \cdot X_i + \beta_5 \cdot p1950 \cdot X_j + \beta_6 \cdot p1950 \cdot t_{ij} + \dots \quad (1)$$

⁹Unfortunately, I do not have access to the underlying data and cannot investigate what the gross bridal contributions were.

$$\beta_7 \cdot WomenToMen_{ijt} + \beta_8 \cdot MaleHet_t + \beta_9 \cdot FemaleHet_t +$$

$$Caste_{ij} + District_{ij} + \epsilon_{ijt},$$

where d_{ij} is the bride minus groom transfer at the time of marriage for couple ij married in year t in 1984 Rupees ('000), X_i is a vector of groom attributes (father's land holdings in acres and groom's years of schooling) and X_j the corresponding vector of bride attributes. $p1950$ is a dummy that takes on the value one if year of marriage is 1950 or later. Its interaction with the individual characteristics is to allow for possible changes in their "prices." 1950 was chosen both because of the apparent trend break in net dowries and while the assertion of "recent" dowry inflation is vague regarding timing, the post-1950 period corresponds to the frequently invoked "post World War II" historical period (Independence in 1947 and the end of the first Indo-Pakistani war in 1949). $WomenToMen$ is the marriage squeeze variable used by Rao (1993): the number of women aged 10-19 over the number of men aged 20-19 in the district in the census year closest to the year of marriage. $MaleHet$ is a measure of the degree of male heterogeneity. It is the coefficient of variation in the groom's father's land holdings. Since there are only a few observations per year, to obtain a reasonable number of observations, the coefficient of variation is computed for five-year periods (the year of marriage,

the two preceding and the two following years).¹⁰ We expect the coefficient on this variable to be positive if (net) dowry is driven by competition for husbands. $FemaleHet$ is the corresponding measure of the degree of female heterogeneity. We expect the coefficient on this variable to be negative if (net) dowry is driven by competition for wives. $Caste_{ij}$ is a vector of caste dummies (all marriages were intra-caste, see Deolalikar and Rao (1998)). $District_{ij}$ is a vector of district dummies. t is the year of marriage, and ϵ_{ijt} is an i.i.d. error term.

3.2 Results

Results are summarized in Table 1. The first four columns present results from estimating equation 1 without the post-1950 interaction terms, while the last four columns include the interaction terms. Column 5 shows the results from estimating the specification in Column 1 using only observations from couples married 1950 or later. Column 1 (6) shows the specification without the sex-ratio, $WomenToMen$, or heterogeneity measures. These are entered sequentially in columns 2-4 (7-9). Consistently, male land holdings enter positively. Female land holding is also positive, but only statistically significant before 1950. The coefficients on schooling are positive for grooms and statistically significant when

¹⁰The construction of the heterogeneity measure implies that the reported standard errors for the β_8 and β_9 estimates are too small. But as a zero effect generally cannot be rejected with these underestimated standard errors, no correction was made.

estimated without period interactions (columns 1-4). Wives' schooling also enters positively when estimated without interaction terms, but not at statistically significant levels. The main difference between the early and the late period is that in the early period, there is a more pronounced positive relationship between wife's father's land holding and dowry. While not a clear indictment of dowry as negative bride-price, it is somewhat curious that positive female traits are associated with higher dowry.

As for the measures of the marriage market terms of trade, neither the sex ratio nor male or female heterogeneity measures have any bearing on net dowry. The coefficient on *WomenToMen* is of the unexpected sign (negative) and not significant. The female heterogeneity measure is significant in one specification (column 7) but of the wrong sign. Thus it appears that marriage market conditions do not exhibit the "expected" relationship to net dowries.

However, the most striking finding is the absence of dowry inflation post-1950, either in the raw data or when controlling for characteristics of the groom and the bride. Year of marriage is positive and significant in the specifications without period interactions (columns 1-4), which is not surprising given Figure 1. This relationship is driven by the early period, and is not statistically significant after 1950.

4 Summary

Dowries have increased in India. Interpreting dowry as the price women pay to marry, economists have sought the explanation in deteriorating marriage market terms of trade for brides. However, there are *a priori* several reasons to doubt that the marriage market has turned against brides, the most obvious one being that women are scarce in India, and increasingly so (possibly through pre-natal screening and elective abortions). Another is economic growth. Higher (male) incomes would suggest that demand for wives has shifted out.

Conceptually, this paper has pointed to the need to distinguish between gross and net flows. Dowry according to anthropologists refers to the gross assets a bride brings in marriage. However, dowry according to Becker, and subsequently (chiefly) economists, refers to the net payment: the bride-side's contribution minus the groom side's payments. These two definitions are obviously different animals. Moreover, neither indicates whether the bride or the groom side is the net payer over time, and the disconnect is possibly greater for gross than for net dowry. While marriage market conditions may dictate a price, this price is often implicit and dowry, net or gross, is only one component in its calculation. A glaring omission is the exclusion of the groom's future inheritance.

Empirically, the paper has shown that in a much-used data set on dowry inflation, net dowries did not increase in the period after 1950, belying claims

of “recent” increases. Moreover, variables designed to capture marriage squeeze or male relative to female heterogeneity failed to move dowries in the expected direction.

Thus, it would appear that the widespread reports of dowry inflation are confined to gross dowries. Moreover, the stagnation of net dowries after 1950 undermine claims that marriage market conditions for brides have worsened. While a rise in gross (or net) dowry could reflect such a deterioration, another possibility is that higher dowries reflect greater intergenerational bequests to children.

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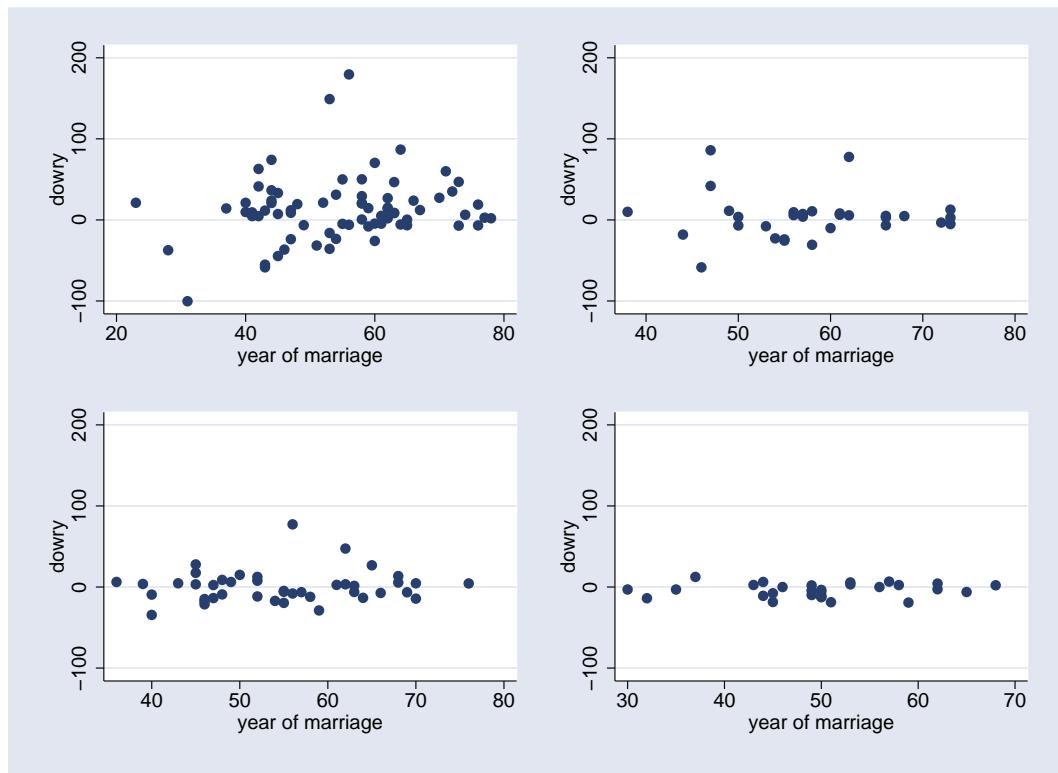
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Table 1: Estimates of Net Dowry as Function of Couple and Marriage Market Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
husband's father's land	0.377*** [0.081]	0.379*** [0.081]	0.387*** [0.082]	0.388*** [0.082]	0.510*** [0.177]	0.336*** [0.118]	0.344*** [0.116]	0.351*** [0.114]	0.354*** [0.114]
husband's schooling	1.745** [0.674]	1.861*** [0.699]	1.750*** [0.656]	1.831*** [0.688]	1.811* [0.950]	0.409 [1.004]	0.356 [1.001]	0.427 [1.009]	0.393 [1.012]
wife's father's land	0.024 [0.051]	0.019 [0.054]	0.024 [0.053]	0.02 [0.055]	0.006 [0.056]	0.170* [0.093]	0.166* [0.093]	0.182** [0.089]	0.179** [0.090]
wife's schooling	0.549 [1.391]	0.457 [1.348]	0.45 [1.375]	0.366 [1.346]	1.23 [1.457]	-4.782 [4.380]	-5.152 [4.275]	-5.599 [4.303]	-5.744 [4.264]
husband's father's land $\times p1950$						0.003 [0.003]	0.003 [0.003]	0.003 [0.003]	0.003 [0.003]
husband's schooling $\times p1950$						0.025 [0.020]	0.03 [0.020]	0.024 [0.020]	0.027 [0.021]
wife's father's land $\times p1950$						-0.003* [0.002]	-0.003* [0.002]	-0.003* [0.001]	-0.003* [0.001]
wife's schooling $\times p1950$						0.088 [0.067]	0.091 [0.065]	0.1 [0.065]	0.1 [0.065]
WomenToMen						-25.738 [20.584]	-20.14 [22.581]	-33.661 [24.452]	-21.536 [26.967]
MaleHet						1.354 [5.079]	2.231 [5.313]	1.987 [5.240]	2.983 [5.483]
FemaleHet						3.835 [2.982]	3.186 [3.148]	5.299* [0.437]	4.337 [0.664]
Marriage year	0.443** [0.218]	0.731** [0.345]	0.500* [0.264]	0.747* [0.422]	0.242 [0.358]	0.25 [0.437]	0.825 [0.664]	0.175 [0.433]	0.598 [0.710]
Marriage year $\times p1950$						-0.055 [0.157]	-0.14 [0.176]	0 [0.152]	-0.065 [0.174]
Constant	- 33.938*** [12.152]	-19.185 [15.357]	-48.980** [23.978]	-39.034 [24.520]	-24.304 [18.588]	-21.692 [17.553]	-9.555 [17.811]	-36.75 [26.700]	-31.53 [26.798]
Observations	160	160	160	160	112	160	160	160	160
Adjusted R-squared	0.31	0.31	0.3	0.3	0.32	0.32	0.32	0.32	0.32

* indicates significance at 10 percent, ** at 5 percent, and *** at 1 percent. OLS regression results reported, robust standard errors in parentheses. All regressions include dummies for caste and district, not reported. *p1950* is a dummy that takes on the value 1 if couple married in 1950 or later. Means and standard deviations for the variables are as follows. Net dowry 1984 Rupees ('000): 6.58 (30.85); husband's father's land (hectares): 17.11 (37.61); husband's schooling (years): 2.84 (3.45); wife's father's land (hectares): 16.24 (46.47); wife's schooling (years): 0.98 (2.23); marriage year: 55.79 (9.29); *WomenToMen*: 1.17 (0.13); *MaleHet*: 2.04 (0.39); *FemaleHet*: 2.37 (0.66).

Figure 1: Bride Minus Groom Marriage Payments by Year of Marriage and Caste,
1984 Rupees ('000)



Highest through lowest caste, clockwise from upper left.