

The Marriage Squeeze Interpretation of Dowry Inflation - Response

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In Edlund's critique of my paper (Rao, 1993) the main point is that she is unable to replicate the result that a "marriage squeeze" resulted in an increase in dowries. I obtain results different from my 1993 paper, but with a similar interpretation. Focussing on the non-differenced specification preferred by Edlund, Table 3(1) and 3(2) report results from a regression on the ICRISAT data with husband and wife traits entered quadratically¹, and Table 2 provides summary statistics for these variables. I find that a quadratic specification of the age ratio has a significant effect on dowries with positive derivatives at the mean and the median. While I am unable to replicate the linear effect reported in my 1993 JPE paper, the interpretation remains the same - that a marriage squeeze led to an increase in dowries². In order to provide further evidence for the marriage squeeze hypothesis, I also estimate dowry regressions on data from another survey of one inter-marrying caste spread over three villages in the state of Karnataka³. Karnataka neighbors both Andhra Pradesh and Maharashtra states where the ICRISAT villages are located, and has a similar culture, geography and climate. Tables 3(3) and 3(4) report the results from the Karnataka survey and show that the age ratio is significant and positive both when estimated as a level, and in a quadratic specification where it is positive at the mean and median⁴.

There are difficulties in attempting an exact replication since it has been seven years since I completed the estimation for the 1993 paper, and I have been unable to locate crucial programs that cleaned the household data, merged it with census information and estimated the regressions. Without these programs I cannot exactly reconstruct the data set I used for the paper. The data that both Edlund and I now

¹ A specification with differenced traits as in the 1993 paper, and one identical to Edlund's that includes trait interactions, have very similar results on the age ratio variable.

² Given the long time period - 1920 to 1980 - spanned by the retrospective marriage data from ICRISAT, a quadratic specification may provide better estimates for the ICRISAT data for two reasons: Very high age ratios may overestimate the proportion of eligible women during later periods that have smaller age differences - particularly since fertility rates also begin to decline in later periods. The marriage squeeze may also be over-estimated for those regions and periods with higher male out-migration rates from the district. Thus, very high age ratios may actually reflect a less severe marriage squeeze, while lower age ratios provide a more accurate measure.

³ More details on the data are available in Bloch and Rao (1999).

⁴ Bhat and Halli (1999) provide further recent evidence on the marriage squeeze in India.

have access to is an earlier version that was modified several times in the process of working on the paper. With an imperfect recall of the procedures I followed, I have attempted to clean the available data by clearing duplicate observations, finding information on missing variables from other modules of the ICRISAT survey, and re-entering the Census data. This has resulted in a sample of 136 unique observations. Incorporating data from the Indian Census requires careful choices because of changes in the boundaries of states and districts, missing data, and inconsistencies in the way Census tables are structured. There are differences in Edlund's use of the Census data and mine that are highlighted in Table 1.

In refuting the marriage squeeze hypothesis a second point made by Edlund is that that increased dowries could simply show that parents are getting wealthier and transferring larger pre-mortem bequests to their daughters. This is empirically unlikely. Firstly, the evidence from the ICRISAT villages suggests that wealth and income have increased very slowly (Walker and Ryan - 1990). Secondly, recent field-based research overwhelmingly indicates that contemporary dowries in India are not a bequest but a groom-price⁵. Marriage transfers are not controlled by the bride but by the groom's parents, and are paid directly to the parents. They are usually not voluntary payments but are negotiated, demanded and sometimes coercively extracted by the groom's family⁶.

I do not mean to suggest that the marriage squeeze is the only possible explanation for the rise in dowries in India. The literature proposes various other hypotheses to explain the phenomenon that include increased urbanization and modernization, aspirations for prestige and mobility, increasing gender inequality, and the breakup of the traditional caste system. The marriage squeeze, while important, is perhaps only part of the picture. To sort out the complex factors underlying this phenomenon we would ideally need large, longitudinal samples that allow us to distinguish between period, cohort and cross-sectional effects. It is difficult to learn much from the small retrospective surveys available to us.

References:

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Census of India, 1921-1981, Hyderabad Census, 1921-1931

⁵ See Srinivas 1989, Billig 1992, Kapadia 1996, and Bloch and Rao 1999 for recent evidence on dowries in India.

⁶ However, in so far as parents, who usually choose their children's spouses, are motivated by an altruistic desire to "purchase" a better husband for their daughter, dowries may represent an indirect transfer to her.

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Table 1 - Age Ratio

<u>Year</u>	<u>Mahbubnagar</u>	<u>Sholapur</u>	<u>Akola</u>
1921	1.08575	1.04739	1.138302
1931	1.10018	1.13932	1.120304
1941	.	1.04266	1.121432
1951	.	.	.
1961	1.25064	1.19537	.
1971	1.39686	1.34525	1.469448
1981	1.36534	1.31215	1.464669

Explanations of differences with Edlund's Table 1:

Akola 1921,1931: Census data are from Ahmednagar district where these villages were then located.

Akola 1951, 1961: Akola district was recreated in 1955 when the internal political boundaries of Indian states were reorganized. Perhaps as a consequence of this, the first 1961 census for Akola district reports a very inconsistent ratio of 1.039. Thus, I replace the 1961 census ration with the 1971 value to get a more consistent measure. This makes it impossible to use the average of 1961 and 1941 to get the imputed value for 1951, and I use the 1941 age ratio instead.

Mahbubnagar 1931, 1941 and 1951: The 1931 number was incorrectly entered as 1.00018 in Fig. 1 of my 1993 paper. 1941 data for Mahbubnagar is not available, and 1951 is not reported in a manner that allows a compatible series to be constructed. Therefore, the 1931 value is assigned to 1941 and the 1961 value is assigned to 1951.

Sholapur 1951: Here again the 1951 census tables do not allow the construction of a consistent series. Since 1941 and 1961 data are available, I take their average.

Table 2 - Means and Standard Deviations of Variables

Variables	ICRISAT (N=133) Dowries In 1984 rupees		Karnataka (N=142) Dowries In 1992 rupees	
	Mean	Std. Dev	Mean	Std. Dev.
Net Dowry	2754.19	2515.54	11840.44	72861.06
Age Ratio (Women 10-19/Men 20-29)	1.227	0.144	1.061	0.037
Husband's Schooling	2.526	3.386	1.462	3.000
Wife's School	0.849	2.061	1.186	2.640
Husband's Land at Age 15	13.992	36.214	---	---
Wife's Land at Age 15	13.985	46.404	---	---
Husband's Family's Annual Income (1992 rupees)	---	---	6318.13	17.68
Wife's Family's Annual Income (1992 rupees)	---	---	5435.41	6.52
Husband Marriage Age	21.135	4.511	23.959	6.098
Wife's Marriage Age	14.571	4.964	14.407	3.622
Husband's Height	162.261	6.233	---	---
Wife's Height	149.498	4.808	---	---
Mahbubnagar/Halli Village	0.308	---	0.400	---
Sholapur /Beedu Village	0.383	---	0.359	---
Akola /Ooru Village	0.309	---	0.241	---
Highest Caste	0.398	---	---	---
Second Caste	0.180	---	---	---
Third Caste	0.233	---	---	---
Lowest Caste	0.189	---	---	---
Year of Marriage	54.473	10.315	74.394	12.17
Labor Force Ratio	0.573	0.117	---	---

Table 3
Determinants of Dowries – OLS
(t| in parenthesis with robust standard errors)

Variable	ICRISAT Data** Net Dowries/10000 (In 1984 rupees)		Karnataka Data Net Dowries/10000 (In 1992 rupees)	
	(1)	(2)	(3)	(4)
Age Ratio	30.85 (1.1)	1112.59 (2.3)	48.90 (2.4)	2454.21 (1.9)
Age Ratio ^2	---	-418.42 (2.3)	---	-1142.97 (1.8)
Husband's Schooling	1.01 (0.7)	1.04 (0.7)	-0.98 (1.1)	-0.89 (1.0)
Husband's School^2	-0.02 (0.2)	-0.03 (0.3)	0.14 (1.2)	0.13 (1.1)
Wife's School	0.52 (0.1)	0.58 (0.2)	-0.01 (0.0)	0.01 (0.0)
Wife's School^2	0.18 (0.6)	0.20 (0.7)	0.04 (0.6)	0.00 (0.2)
Husband's Land at 15	0.42 (1.9)	0.42 (2.1)	---	---
Husband's Land^2	-0.00 (0.7)	-0.00 (0.6)	---	---
Wife's Land at 15	0.21 (0.8)	0.21 (0.8)	---	---
Wife's Land^2	-0.00 (0.9)	-0.00 (0.9)	---	---
Husband's Family Income/1000	---	---	-0.19 (0.7)	-0.16 (0.6)
Husband's Income^2	---	---	0.01 (0.5)	0.00 (0.4)
Wife's Family Income/1000	---	---	-0.00 (0.0)	-0.01 (0.2)
Wife's Income^2	---	---	-0.00 (0.1)	0.00 (0.1)
Husband Marriage Age	2.47 (0.9)	4.02 (1.3)	0.15 (0.2)	0.15 (0.2)
Husband's Age^2	-0.06 (1.0)	-0.08 (1.5)	-0.00 (0.4)	-0.00 (0.4)
Wife's Marriage Age	-4.47 (1.9)	-5.28 (2.3)	-1.24 (0.6)	-1.27 (0.6)
Wife's Age^2	0.12 (2.0)	0.14 (2.4)	0.04 (0.6)	0.04 (0.6)
Husband's Height	-4.54 (0.4)	-1.29 (0.1)	---	---
Husband's Height^2	0.01 (0.4)	0.00 (0.1)	---	---
Wife's Height	16.94 (0.9)	15.05 (0.9)	---	---
Wife's Height^2	-0.06 (0.9)	-0.05 (0.9)	---	---
Mahbubnagar /Halli Village	-3.11 (0.5)	-12.21 (1.5)	1.34 (0.7)	1.44 (0.8)
Sholapur /Beedu Village	8.72 (0.9)	1.81 (0.2)	0.84 (0.6)	0.93 (0.6)
Caste 1	-4.03 (0.7)	-2.35 (0.4)	---	---
Caste 2	-4.87 (0.6)	-3.79 (0.6)	---	---
Caste 3	-4.00 (0.9)	-2.98 (0.7)	---	---
Year of Marriage	0.12 (0.4)	-0.34 (0.9)	-0.10 (1.6)	-0.17 (1.8)
Labor Force Ratio	17.62 (0.6)	-8.64 (0.3)	---	---
Constant	-897.21 (0.6)	-1684.94 (1.2)	-35.05 (1.6)	-1293.42 (1.9)
R^2	0.43	0.46	0.11	0.12
F - Statistic	10.18	9.43	0.62	0.64
N	133	133	142	142

**Three outliers with dowries larger than 100,000 rupees and less than -100,000 rupees are dropped.