Dowry Inflation: A Comment[1]

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First Draft March 1997

Working Paper Series in Economics and Finance No. 193

September 1997

Abstract:

In a recent paper Rao (1993) proposed that scarcity of men (marriage squeeze) could drive rising dowries in India. This paper shows, using the same data, that his marriage squeeze variable fails to be significant in replication of the dowry function as well as in alternative specifications. Moreover, the evidence in favor of an inflation interpretation to dowry increases is weak. Instead, data suggest that the rise in dowries might have resulted from an in increase in wealth, an interpretation which challenges the notion of rising dowries as a determinant of gender bias.

JEL: J12

Keywords: Dowry inflation, Marriage squeeze

[1] The author thanks Marcus Asplund, Tore Ellingsen, Markus Jäntii, David Lam, Vijayendra Rao, and Robert J Willis.

1. Introduction

In a recent paper, Rao (1993) advanced a marriage squeeze explanation to the secular rise in real dowries, so called dowry inflation, witnessed in India. The essence of the idea is that increasing scarcity of men lies behind the rise in dowries. Even though males outnumber females in India, and increasingly so (Table 1.1), rapid population growth can result in more women than men in the market for a spouse, provided that men look to younger cohorts for wives. Arguing that the relevant ages with respect to marriage are 10-19 for women and 20-29 for men, Rao (1993), henceforth referred to as Rao-93, found that the ratio of women to men in those age groups has increased over time. Moreover, this sex-ratio was found to have a positive and significant impact on dowries in estimations of dowry functions where dowry was regressed on differences in bride and groom traits (e.g. father's landholding). This finding was advanced as evidence in support of a marriage squeeze interpretation to dowry inflation.

The empirical results presented in this paper suggest that Rao-93 findings are not robust. The main reason why we believe the marriage squeeze story to be tenous is the manifest shortage of women in the population at large; and we discuss weaknesses with the measure of the marriage market sex-ratio employed in Rao-93. Moreover, we find empirical support for our theoretical critique of Rao-93's analysis. Using the same data as in Rao-93, we fail to replicate his main result, i.e. that the sex-ratio (women 10-19/men 20-29) impacts dowries in a positive direction. We discuss why his specification might be inappropriate and present results

supporting the claim that bride and groom traits should not be differenced. Furthermore, we advance empirical evidence against the inflation interpretation to dowry inceases, which suggests that the concomitant increase in dowry and the ratio of number of men to women in the population might not be causally linked. A finding that goes against the popular notion that increasing dowries are responsible for discrimination, neglect and infanticide of daughters.

This paper takes issue with Rao-93 on several counts. Firstly, it is important to note that a literal scarcity of men is not the only, and for India, not the most likely explanation of positive dowries. Competition for spouses are only partly determined by the number of agents on each side. It is well known that an equally important determinant is the distribution of qualities with in the male and female populations respectively (e.g. Becker 1981; Edlund 1996a). Secondly, regressing dowries on differences in bride-groom traits imposes the restriction that attributes impact dowries in a symmetrical fashion, ignoring compelling evidence against that assumption.

The third point is the potential endogeneity of age gaps. Indeed, Rao-93 noted that the average age gap shrunk from 8.02 years in 1931 to 5.62 years in 1981. Edlund (1996b) shows that a surplus of men in one cohort could translate into a permanent pattern of men marrying younger women. In short, the argument is that if there are more men than women in a cohort, not all men will marry women of their cohort. Hence there will be men “left over”. To the extent that these older unmarried men can outcompete men in younger cohorts, they will displace younger men, who in turn

will have to postpone marriage, etc. If age gaps respond to overall demographics, and that the initial age gap of 8.02 years could be the result of such a back log of men. The narrowing of the age gap is consistent with the view that age gaps are mainly endogenous, since that is precisely what one would expect from population growth. Taking the view that age gaps respond to overall demographics ,so as to balance the marriage market sex-ratio, the ratio of e.g. women aged 10-19 to men aged 20-29 would be a predictor of the age gap rather than an indicator of scarcity of men. Arguably, biology as well as social norms might limit the ages of eligibility. But at least in the case of lingering traditions, we note that the data spans more than five decades, and perhaps more relevant, the actual age gap has changed substantially during that period.

Using the same data set as Rao-93, we estimate a model of dowry determination and compare our results with those of Rao-93. Our main finding is that the sex-ratio variable employed by Rao-93 is not significant, neither in attempts to replicate his results nor in alternative specifications. Moreover, data uphold our claim that bride and groom traits should not be differenced. Lastly, we find reasons to question whether the rise in dowries has actually been a case of "inflation". We find that dowry increases with the bride's level of education for marriages taking place after 1950. A possible interpretation is that rising dowries could be a manifestation of larger intergenerational transfers (e.g. following from economic growth). Since the observed dowry is a measure of what the bride side paid in excess of the groom side's contribution at the time of the marriage, it could be an overstatement of the price component of dowry, to use Rao-93's wording, and increasingly so with higher

levels of gross transfers. The reason is that part of the groom's contribution might be in the form of expected inheritance, which in most cases are several years down the line. Hence increasing levels of wealth (and thus inter-generational transfers) might account for the increase in dowry, where the particular timing of transfers might have given rise to a fallacious impression of "a rising price of husbands".

2. Data and Results

Data. Data is from a retrospective survey on marriages conducted in 1983 by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). A stratified random sample of 40 households from six villages were selected. The villages were located in South-central India, in the districts of Mahbubnagar, Sholapur and Akola. The first household married in 1923 and the last in 1978. The sample consists of 127 complete observations (171 observations if the height and age variables are excluded).[2] The reader is referred to Rao-93 for further information. The district sex-ratio and the labor force sex-ratio are from the Indian Censuses of the respective years, unless otherwise indicated.

Two points need to be noted regarding the variables. First, the sex-ratios reported in Rao-93:table 2 do not always coincide with those of the censuses of the respective years, and the source of this discrepancy is unclear. Since the results are similar, I

[2] Rao-93 reported 141 observations. Although, estimating the dowry function proposed by Rao-93 does return 141 observations, on closer inspection it turns out that 14 of those are duplicate entries, which leaves us with 127 observations. From inspection of the descriptive statistics (Table 2) it seems that the 141 observation sample resembles that used by Rao-93 more closely. The regression

report only those pertaining to census data. Observations with marriages in the period 1917-1926 were given the 1921 district sex-ratio, and so on for the entire sample.[3] Second, Rao-93 included the variable labor force sex-ratio, to test the hypothesis that dowries have risen as a result of lower economic contribution of women (relative to men). However, since women do not compete with men for spouses, under a surplus of men it is conceivable that it would not shift dowries. Also, it is not obvious that the economic contribution of women is monotonically related to female labour force participation. At any rate, the number of women to men in the labour force is a flawed measure of female labour force participation since the overall sex-ratio obviously also plays into it. In fact, we would expect the number of women to men in the labor force to fall by the mere fact that the number of women to men has fallen in the overall population. In addition, it is conceivable that increasing scarcity of females could reduce female relative to male labor force participation. Hence, it remains unclear what, if any, the relationship between labour force sex-ratio and dowry is. Moreover, comparisons over time are complicated by the fact that the categorization of who is in the labor force differs from census to census. In view of the average of 0.61 reported in Rao-93:table 2, I used an as inclusive measure as possible. Further details are in Table A1 in the appendix. The district sex-ratios are reported in Table 1.2.

Table 1.1 and 1.2 here.

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results are very similar for the two samples, therefore I only report results from the subsample purged of duplicates.

[3] The cut-off points were chosen after consultions with V. Rao. I also experimented with interpolating sex-ratios for years between censuses, only to find the thus constructed sex-ratio variable to perform worse.

Summary statistics of the variables are in Table 2 below. Note that the means and standard deviations are close to those reported in Rao-93:table 2, except for the district sex-ratio variable. Whereas Rao-93 reported a sample mean of 1.22, we obtain a mean of 1.14, using the values given in Rao-93:table 2, or 1.17 using census data.

Table 2 here

Replication. Table 3 reports the results from replication of Rao-93's dowry functions. Regressions (1) and (3) are replications of Rao-93's regression (1) and (2) respectively. Since it is unclear whether there is a meaningful interpretation to the labor force sex-ratio, regressions (2) and (4) present the results from excluding that variable.

Turning to regressions (1) and (2) in Table 3, we note that the coefficient for the district sex-ratio is about half the size of Rao-93's, whilst the standard error is about the same. Consequently, the t-ratios are substantially lower and not significant at conventional levels. This is also true if we exclude the labor force sex-ratio variable (regression (2)). An additional difference with Rao-93 is that inclusion of a time trend (year of marriage) reduces the significance of the district sex-ratio substantially when year of marriage is included in the regression, as in regressions (3) and (4). Again, exclusion of the labor force sex-ratio variable has little impact on the results as shown by regression (4).

Table 3 here.

Relaxing restriction on traits. This paper argues that dowries should not be regressed on the difference between bride and the groom characteristics as done in Rao-93, but on the individual traits separately. Regressing dowry on traits separately improves the fit of the model quite dramatically. The adjusted - R^2 of the unrestricted model hovers around 0.29 (Table 4), while the corresponding figure for the restricted version is around 0.12 (Table 3). Using an F-test, we can reject the hypothesis that the difference restrictions are valid at the 0.001 level. Moreover, the t-ratio of the marriage squeeze variable drops further, from 1.6 to 1.1 if year of marriage is excluded; and, including year of marriage, from 0.7 to 0.3. Moreover, regressing dowry on individual traits instead of differences, we cannot reject the hypothesis that the squared terms are redundant.

Table 4 here.

To sum up, we fail to replicate Rao-93's results and it seems that his results in favor of a marriage squeeze interpretation of the rise in dowries is not robust to alternative specifications of the dowry function.

Dowry inflation. So far the data analysis has focussed on comparison with Rao-93. Controlling for individual characteristics of the bride and groom and district dummies, the estimated coefficient for year of marriage is positive (although not significant) (Table 3). Here we will explore an alternative route to examining the case

for dowry inflation. The relationship between quality and the equilibrium dowry payment might depend on the relative distribution of the qualities in the two sexes respectively, the relationship between traits and dowry need not be stable. This suggests that one may look for structural change in the relationship between the regressors and net dowry. Constructing a period dummy for the period 1950-78, and interacting it with individual characteristics, we find that both the point estimates and t-ratios for the marriage squeeze and the year of marriage variables decrease further. The results are in Table 5.

Table 5 here

In the later period, female education was positively related to net dowry (Table 5, regressions (3) and (4)). It is unlikely that higher schooling of the bride would cause the price of a husband of a particular quality to go up. An alternative explanation could be omitted variable bias, where the omitted variable might be parents' wealth (only imperfectly proxied by land holding and daughter's education), in combination with the particular timing of inter-generational transfers of dowry preceding inheritance. The practice in India is that daughters do not inherit, they are given dowries. As a consequence, parents transfer wealth earlier to daughters than to sons. The larger the bequest component of a dowry is, the larger we would expect the difference between the bride and groom families transfers at the time of marriage to be. Thus netting bride against groom tranfers at the time of marriage might be an overstatement of the relative contributions of the bride family to the new couple. and increasingly so among wealthy families, since a high dowry might later on be matched

by bequests or inheritance from the groom family. If daughter's years of schooling are correlated with parents' wealth, and the transfer of wealth from parent to child generation has increased over time, we would expect the dowry to increase over time without necessarily indicating of a "rising price of husbands".[4]

In conclusion, the results in this subsection suggest that even though dowries have gone up it remains unclear whether that represents a rising price of husbands as suggested by the term "dowry inflation". Instead, the rise in dowries could be due to increasing wealth and the perceived inflation an artifact of failure to control for wealth.

3. Conclusions

In a recent paper Rao (1993) advanced a marriage squeeze explanation to the secular rise in real dowries in India. Using ICRISAT and Census data, we fail to replicate the key result in Rao-93, namely that the ratio of women aged 10-19 to that of men aged 20-29 contributes significantly to increasing dowries. Moreover, Rao-93 regressed dowries on differences in bride and groom traits. We advance arguments for why the implied restrictions are unlikely to hold and we find data to uphold our contention that bride and groom traits should not be differenced. Regressing dowries on individual characteristics separately, and interacting characteristics with period

[4] An issue to bear in mind is that of sample selection. Sampling old households allow for comparison over time but is susceptible to sample selection bias. Higher mortality among the poor could result in too few of these households being represented in a survey of marriages stretching over a an extended period. This might bias the results against dowry inflation.

dummies we find that in the period after 1950, bride's years of schooling is positively related to the net dowry. This, we speculate, could be the result of failing to account for parental wealth, suggesting an alternative to the interpretation of dowry increases as a source and outcome of deteriorating female status in India.

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Table 1.1

Number of women per 1000 men in India, by census year.

	All	State	
Census year	India	Maharashtra[1]	Andhra Pradesh[2]
1901	972	978	985
1911	964	966	992
1921	955	950	993
1931	950	947	987
1941	945	949	980
1951	946	941	986
1961	941	936	981
1971	930	930	977
1981	934	937	975
1991	929	935	972

Source: Census of India 1991.
Notes: 1) Maharashtra contains Sholapur and Akola districts. 2) Andhra Pradesh contains the Mahbubnagar district.

Table 1.2

Ratio of women aged 10-19 to men aged 20-29, by district and census year.

	District					
Census year	Mahbubnagar		Sholapur		Akola	
1921	1.09	(1.09)	1.05	(1.05)	1.15*	(1.10)
1931	1.00*	(1.10)	1.14	(1.14)	1.14	(1.14)
1941	1.08*	(0.99)	1.04	(1.04)	1.12	(1.12)[1]
1951	1.15*	(1.26)[2]	1.11*	(1.25)	1.07*	(1.22)
1961	1.25	(1.25)	1.20	(1.20)	1.04	(1.04)
1971	1.38	(1.38)	1.35	(1.35)	1.47	(1.47)
1981	1.35	(1.35)	1.31	(1.31)	1.46	(1.46)

Source: Rao (1993), table 2, and Indian Censuses 1921 -- 1981.
Notes: Figures not in parentheses are from Rao-93, table 2, figures in parentheses are from the Indian census of the respective year. * denotes years for which the there is a discrepancy.
1) Imputed value, calculated as an average of the values for Mahbubnagar and Sholapur districts in relation to their 1931 and 1951 values.
2) Figure for the South Hyderabad division, which Mahbubnagar district sorted under.

Table 2

Variable (Unit)	Sample 127 Mean (Standard dev.)	Sample 141 Mean (Standard dev.)	Rao-93:table 2 Mean (Standard dev.)
Net dowry transfer	5819.83	4722.45	4792.13
(1984 rupees)	(33153.87)	(32942.49)	(32835.99)
Groom's age at marriage	21.15	21.11	21.07
	(4.50)	(4.47)	(4.78)
Bride's age at marriage	14.66	14.40	14.40
	(4.96)	(4.91)	(4.89)
Groom's schooling (years)	2.80	2.59	2.57
	(3.45)	(3.36)	(3.35)
Bride's schooling (years)	0.89	0.80	0.82
	(2.10)	(2.01)	(2.01)
Groom's height (cm)	162.28	162.25	162.24
	(6.17)	(6.23)	(6.21)
Bride's hight (cm)	149.41	149.42	149.44
	(4.88)	(4.80)	(4.78)
Groom's father's landholdings	14.83	14.11	14.28
when groom was 15 (hectars)	(37.41)	(35.66)	(35.56)
Bride's father's landholdings	15.09	14.01	14.05
when bride was 15 (hectars)	(47.63)	(45.40)	(45.24)
Year of marriage	54.43	54.13	54.15
	(10.32)	(10.40)	(10.36)
Ratio of number of women aged 10-19 to	1.14	1.14	1.22
men aged 20-29 in the district	(0.11)	(0.11)	(0.13)
Ratio of number of female workers	0.57	0.58	0.61
to male workers	(0.12)	(0.12)	(0.39)
Mahbubnagar district	0.27	0.33	0.34
Sholapur district	0.41	0.37	0.37
Akola district	0.32	0.30	0.29
Highest caste rank	0.42	0.40	0.39
Second caste rank	0.18	0.18	0.18
Third caste rank	0.23	0.23	0.23
Lowest caste rank	0.17	0.19	0.20
Number of observations:	127	141	141

Notes: The third column is from Rao-93:table 2. The second column reports descriptive statistics for the subsample of 141 observations for which the variables used in Rao-93's analysis were available. However, 10% of the observations in this subsample are duplicate observations, therefore we also report the values for the subsample purged of duplicates in column 1.

"Net dowry transfer" is the value of assets, in 1984 rupees, transferred to the groom family from the bride family net of transfers in the opposite direction, including marriage expenditures. "Landholdings" is the sum of irrigated and non-irrigated land. All marriages were between members of the same caste (Deolalikar and Rao 1990).

Column 1 and 2 reports the sex-ratio obtained from Rao-93:table 2. The corresponding figures for the census data are mean: 0.17 and standard error: 0.13 for both the 141 and the 121 sample.

Table 3
Replication of Rao-93.

	(1)	(2)	(3)	(4)
Intercept	-63,008.89	-67,014.76	-59,795.72	-68,974.14
	(1.3)	(1.9)	(1.6)	(2.0)
Husband's	3,307.94	3,348.60	3,559.07	3,634.19
- wife's age	(1.3)	(1.3)	(1.4)	(1.4)
Wife's -	-1,389.37	-1,410.16	-1,361.71	-1,410.06
husband's height	(1.0)	(1.0)	(0.8)	(1.0)
Wife's	-310.21	-310.92	-314.70	-315.99
- husband's land	(2.9)	(3.0)	(3.0)	(3.0)
Wife's - husband's	-1,375.19	-1,387.05	-1,453.95	-1,475.51
schooling	(0.8)	(0.8)	(0.8)	(0.9)
(Age -	-104.68	-106.64	-114.54	-118.33
difference)**2	(0.8)	(0.8)	(0.9)	(0.9)
(Height -	-98.24	-98.47	-95.89	-96.55
difference)**2	(1.8)	(1.8)	(1.7)	(1.7)
(Land -	0.88	0.88	0.88	0.88
difference)**2	(2.6)	(2.3)	(2.6)	(2.6)
(Schooling -	-81.77	-82.38	-82.98	-84.25
difference)**2	(0.5)	(0.5)	(0.5)	(0.5)
Sholapur district	6,786.48	7,835.07	4,829.08	7,302.64
	(0.6)	(1.0)	(0.4)	(0.1)
Akola district	18,390.55	18,786.82	15,644.29	16,706.64
	(2.0)	(2.2)	(1.6)	(1.8)
Highest caste rank	14,727.22	14,653.69	13,734.23	13,632.64
	(1.6)	(1.6)	(1.5)	(1.5)
Second caste rank	-1,121.32	-1,159.09	-1,846.40	-1,884.92
	(0.1)	(0.1)	(0.2)	(0.2)
Third caste rank	-598.05	-594.49	-1,235.86	-1,187.30
	(0.1)	(0.1)	(0.1)	(0.1)
District sex-ratio	**34,341.94**	**34,745.23**	**22,000.31**	**23,688.49**
	(1.5)	**(1.6)**	**(0.8)**	**(0.9)**
District labor force	-4,597.76	-	-10,687.30	-
sex-ratio	(0.1)		(0.8)	
Year of marriage	-	-	288.33	270.00
			(0.8)	(0.7)
Adjusted R**2	0.126	0.134	0.123	0.130
F-statistic	2.2	2.4	2.10	2.26
(prob>F)	(0.016)	(0.006)	(0.013)	(0.008)
n	127	127	127	127

Notes: Wife's land is wife's father's land holding when she was 15 years old, and likewise for husband's land. The results are from using census data. The results from using data inferred from Rao-93:table 2 were very similar therefore I only report the former. Also, the results are based on a sample of 127, the results from the sample of 141 (including duplicates) were also similar, therefore only results from the 127 sample are reported.

Table 4
Dowry on Individual Traits

	(1) With year of marriage	(2) Without year of marriage
Intercept	1,474,583.00 (0.6)	1,413,914.00 (0.5)
Husband's age	2,554.44 (0.5)	2,694.56 (0.6)
Wife's age	-5,766.94 (1.8)	-5,236.83 (1.7)
Husband's height	-10,375.00 (0.5)	-10,937.97 ((0.7)
Wife's height	-7,960.17 (0.3)	-3,500.87 (0.1)
Husband's landholding	903.05 (3.8)	864.40 (3.6)
Wife's landholding	229.63 (0.8)	241.95 (0.9)
Husband's schooling	1,183.23 (0.6)	750.41 (0.4)
Wife's schooling	807.91 (0.2)	1,299.64 (0.4)
(Husband's age)**2	-23.08 (0.2)	-18.06 (0.1)
(Wife's age)**2	252.71 (1.2)	255.47 1.2
(Husband's height)**2	-43.62 (0.7)	-38.88 (0.6)
(Wife's height)**2	-55.79 (0.6)	-77.10 (0.8)
(Husband's landholding)**2	-2.56 (1.4)	-2.46 (1.4)
(Wife's landholding)**2	-0.52 (0.7)	-0.54 (0.7)
(Husband's schooling)**2	-159.55 (0.8)	-131.92 (0.7)

Table 4 cont.

	(1) cont. With year of marriage	(2) cont. Without year of marriage
(Wife's schooling)**2	193.60 (0.3)	136.94 (0.2)
Husband's * Wife's age	-128.51 (0.5)	-143.88 (0.5)
Husband's * Wife's height	155.47 (1.2)	168.72 (1.3)
Husband's * Wife's landholding	-0.66 (0.3)	-0.71 (0.3)
Husband's * Wife's schooling	-45.78 (0.1)	-11.59 (0.0)
Sholapur district	9,242.53 (1.3)	10,284.80 (1.4)
Akola district	1,352.67 (0.1)	5,992.31 (0.7)
Highest caste	201.12 (0.0)	1,119.50 (0.1)
Second caste rank	-5,123.13 (0.5)	-4,536.85 (0.5)
Third caste rank	-5,248.30 (0.6)	-4,498.4 (0.5)
District sex-ratio	7,062.73 (0.3)	25,720.32 (1.1)
Year of marriage	552.65 (1.5)	-
Adjusted R**2	0.300	0.291
F-stat[1] (Prob>F)	1.33 (0.2154)	1.25 (0.259)
F-stat[2] (Prob>F)	3.23 (0.0006)	3.07 (0.0010)
n	127	127

Notes: The results from including the labor force sex-ratio are similar and therefor not reported.
Units as in Table 2.
1)Refers to the hypothesis that squared terms are jointly zero.
2)Refers to the joint hypotheses implied by differing traits.

Table 5.
OLS estimates
Dependent variable: net dowry in 1984 rupees. Independent variables: individual traits.

	(1)	(2)	(3)	(4)
Intercept	-38,112.69 (1.98) (2.14)	-67,329.27 (2.44) (2.30))	-21,864.41 (1.09) (1.46)	-21,881.00 (1.09) (1.46)
Husband's father's land	381.38 (5.52) (2.14)	382.92 (5.56) (4.64)	366.81 (3.26) (3.18)	366.71 (3.28) (3.21)
Wife's father's land	40.77 (0.75) (0.75)	44.08 (0.82) (0.77)	203.51 (1.64) (2.09)	203.44 (1.64) (2.07)
Husband's schooling	1,258.03 (1.70) (1.79)	1,211.07 (1.64) (1.74)	-440.10 (0.38) (0.38)	-433.57 (0.40) (0.37)
Wife's schooling	800.03 (0.70) (0.57)	1,018.14 (0.88) (0.73)	-6,559.34 (1.89) (1.78)	-6,555.54 (1.90) (1.79)
Husband's father's land* period dummy 50+	-	-	129.33 (0.85) (0.64)	129.63 (0.86) (0.64)
Wife's father's land* period dummy 50+	-	-	-196.33 (1.44) (1.76)	-196.31 (1.44) (1.73)
Husband's schooling* period dummy 50+	-	-	2,089.30 (1.50) (1.49)	2,081.06 (1.60) (1.47)
Wife s schooling* period dummy 50+	**-**	**-**	**7,847.19 (2.13) (2.02)**	**7,841.64 (2.15) (2.04)**
Sholapur district	12,061.53 (2.31) (2.01)	20,980.51 (2.62) (2.13)	14,090.10 (2.74) (2.35)	14,081.73 (2.76) (2.39)
Akola district	7,693.00 (1.28) (1.69)	10,765.68 (1.70) (1.95)	6,097.11 (1.03) (1.47)	6,075.37 (1.05) (1.44)
Highest caste	-4,168.17 (0.60) (0.79)	-4,061.26 (0.59) (0.78)	-5,500.93 (0.81) (1.04)	-5,519.62 (0.82) (1.12)

Table 5 cont.

Second highest caste	-4,357.23	-4,498.27	-1,181.82	-1,202.62
	(0.58)	(0.60)	(0.16)	(0.17)
	(0.73)	(0.74)	(0.20)	(0.21)
Third highest caste	-1,156.66	-794.65 -	-110.89	-125.98
	(0.17)	(0.12)	(0.02)	(0.02)
	(0.31)	(0.21)	(0.03)	(0.04)
District sex-ratio	**12,913.08**	**17,188.84**	**10,298.21**	**10,113.94**
	(0.65)	**(0.86)**	**(0.52)**	**(0.63)**
	(0.71)	**(0.93)**	**(0.62)**	**(0.82)**
Labor force sex-ratio	-	39,466.51	-	-
		(1.46)		
		(1.69)		
Year of marriage	246.91	196.93	-4.69	-
	(0.92)	(0.72)	(0.02)	
	(0.88)	(0.72)	(0.02)	
Adj. R**2	0.274	0.279	0.309	0.313
F-statistic	-	-	3.02	3.26
(Prob > F)	-	-	(0.0197)	(0.0133)
n	171	171	171	171

Notes: t-values from OLS in first parentheses, from robust standard error estimates in second parentheses. The period dummy 50+ assumes value zero if year of marriage precedes 1950, and one otherwise.
The F-statistics refer to the test that period interaction terms are jointly zero.
I also estimated a model where the caste dummies were also interacted, since the results were similar, I do not report them.

Appendix

Table A1

Ratio of women to men in the labor force, by census year and district.

	District		
Census year	Mahbubnagar	Sholapur	Akola
1921	0.73	0.42	0.64
1931	0.55	0.40	0.57
1941	0.59	0.42[1]	0.59[1]
1951	0.70	0.48	0.63
1961	0.79	0.53	0.64
1971	0.56	0.26	0.49
1981	0.75	0.51	0.61

Notes: A person was counted as being in the labour force if s/he fell under one of the following categories (by census year): 1981) Main worker or marginal worker; 1971, 1961) worker; 1951) Self supporting person or earning dependent; 1941) Principal occupation or principal and subsidiary occupation or subsidiary occupation or partly dependent on occupation. Statistics only available for Mahbubnagar. Values for Sholapur and Akola are imputed values, see note 1 below. 1931) Total earners or and earning dependents; and for 1921) Actual workers.
1) Imputed values. Taking Mahbubnagar as the reference, the imputed value for Sholapur was calculated as 0.40 + (0.48-0.40)(0.59-0.55)/(0.70-0.55), and that for Akola as 0.57+(0.63-0.57)(0.59-0.55)/(0.70-0.55).

Source: Census of India 1921-1981.