The Effectiveness of Jobs Reservation: Caste, Religion and Economic Status in India

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ABSTRACT

This article investigates the effect of jobs reservation on improving the economic opportunities of persons belonging to India's Scheduled Castes (SC) and Scheduled Tribes (ST). Using employment data from the 55th NSS round, the authors estimate the probabilities of different social groups in India being in one of three categories of economic status: own account workers; regular salaried or wage workers; casual wage labourers. These probabilities are then used to decompose the difference between a group X and forward caste Hindus in the proportions of their members in regular salaried or wage employment. This decomposition allows us to distinguish between two forms of difference between group X and forward caste Hindus: 'attribute' differences and 'coefficient' differences. The authors measure the effects of positive discrimination in raising the proportions of ST/SC persons in regular salaried employment, and the discriminatory bias against Muslims who do not benefit from such policies. They conclude that the boost provided by jobs reservation policies was around 5 percentage points. They also conclude that an alternative and more effective way of raising the proportion of men from the SC/ST groups in regular salaried or wage employment would be to improve their employment-related attributes.

INTRODUCTION

In response to the burden of social stigma and economic backwardness borne by persons belonging to some of India's castes, the Constitution of India allows for special provisions for members of these castes. Articles 341 and 342 of the Constitution include a list of castes and tribes entitled to such provisions; all the groups included in this list — and subsequent modifications to it — are referred to as Scheduled Castes (SC) and Scheduled Tribes (ST). These special provisions have taken two main forms: action against adverse

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discrimination towards persons from the SC and the ST; and compensatory discrimination in favour of persons from the SC and the ST. Compensatory discrimination has taken the form of guaranteeing seats in national and state legislatures and in village *panchayats*, places in educational institutions, and the reservation of a certain proportion of government jobs for the SC and the ST.[1]

In the mind of the Indian public it is jobs reservation that is seen as the most important of the public concessions towards the SC and the ST and it is the one which arouses the strongest of passions.[2] On the one hand, there is a demand to extend reservation to persons who are not from the SC or the ST but who, nevertheless, belong to economic and socially backward groups — the 'other backward classes' (OBC).[3] On the other hand, there is a demand from the SC and the ST to extend reservation to private sector jobs (Bhambri, 2005; Thorat, 2005).

Sowell (2003: 48) has remarked that 'as the country with the longest history of preferences and quotas for the purpose of advancing poor and disadvantaged groups, India's experience is particularly relevant to the actual consequences of such programs, as distinguished from their hopes and consequences'. Against this observation, and the fact that India's 50-year experiment with affirmative action has been emulated in other countries (Malaysia, Nigeria, Sri Lanka), the purpose of this article is to investigate,

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1. Job reservations for SC were designed to assist groups who had known centuries of suppression; reservations for ST were designed to assist groups who were traditionally isolated from the modern world and from mainstream society. For the history and evolution of caste-based preferential policies in India, see Osborne (2001).
2. In arriving at a judgement about who should be eligible for reservation, the criterion has been a person's caste rather than his/her income or wealth. Consequently, groups belonging to what Article 115 of the Indian Constitution calls 'socially and educationally backward classes' have benefited from reservation even though, in practice, many persons belonging to these classes could not be regarded as 'socially and educationally backward'. At the same time, many persons belonging to non-backward classes could legitimately be regarded as 'socially and educationally backward'. Compounding this anomaly is the fact that many of the benefits of reservation have been captured by well-off groups from the depressed classes (for example, *chamars*) while poorer groups (for example, *bhangis*) have failed to benefit. Unfortunately, we are unable to address this issue in this study since the data do not allow a breakdown of the SC by sub-caste.
3. Article 340 of the Indian Constitution empowers the government to create such classes and in 1955, following the report of the Kala Kalelkar Commission, 2339 groups were designated as belonging to the OBC. The 1980 report of the Mandal Commission (established in 1979 with the same mandate as the Kalelkar Commission, namely to 'identify the socially or educationally backward') recommended that, in addition to the 23 per cent of government jobs reserved for the SC and ST, a *further* 27 per cent be reserved for the OBC. In 1990, V.P. Singh announced plans to implement this recommendation, triggering a wave of 'anti-Mandal' rioting in India. In 1992, in *Sawhney v The Union of India*, India's Supreme Court upheld jobs reservation for the OBC but ruled that: (i) reservation was not to extend to more than 50 per cent of the population and (ii) that groups within the OBC category who were manifestly not disadvantaged (the 'creamy layer') were to be excluded from reservation.

using data from the 55th round (1999–2000) of the National Sample Survey (NSS) (Government of India, 2000), the extent to which jobs reservation for the SC and the ST have benefited persons from these groups in the sense of affording them a greater share of regular salaried and wage employment than they might otherwise have had.

The NSS employment and unemployment data give the distribution of respondents — who are distinguished by various characteristics, including their caste, religion and educational standard — between different categories of economic status. Of these categories, the three which are the most important for our purposes are self-employed, regular salaried or wage employees, and casual wage labourers. Using these data, the article focuses on prime-age males (twenty-five to forty-five years of age) and estimates, using the methods of multinomial logit, the probabilities of the men being in these categories of employment, after controlling for their caste/religion[4] and their employment-related attributes.[5]

These probabilities were then used to decompose the difference between 'group X' and forward caste Hindus in the proportions of their members in regular salaried or wage employment.[6] This decomposition allowed us to assign a proportion of this (overall) difference to 'attribute differences' between the group X and forward caste Hindus — that is, the outcome difference when the *different* attributes of group X and forward caste Hindus were evaluated using a *common* coefficient vector;[7] the rest of the overall difference was then due to 'coefficient differences', that is the outcome difference when the attributes of group X were evaluated, first using the coefficient vector of group X and then using the coefficient vector of forward caste Hindus.[8] The proportionate contributions of the attributes and the coefficients differences, to the overall difference, are termed, respectively, the *attributes contribution* and the *coefficients contribution*. The proportion of the (overall) difference, in the proportions of their members in regular salaried and wage employment, between forward caste Hindus and persons in group X which is due to 'coefficient differences' (the coefficients contribution) may be interpreted as a measure of 'discrimination' against such persons.

4. The caste/religion groups considered are: ST (Christian); ST (non-Christian); SC; OBC (Muslim); OBC (non-Muslim); forward caste Hindus (non-OBC/SC/ST Hindus); Muslims (non-OBC/SC/ST); Christian (non-OBC/SC/ST); Sikhs (non-OBC/SC/ST).
5. The choice of prime-age males was influenced by the fact that a very large proportion of these men were likely to be active in the labour market in the sense of being either employed or seeking employment.
6. Forward caste Hindus were Hindus who were not included in the OBC/SC/ST categories. However, since the designation of groups in the OBC category is a state responsibility, a particular (caste) group may be included in the OBC category in one state (and thus be excluded from forward caste Hindus) but be excluded from the OBC category (that is, be included amongst forward caste Hindus) in another state.
7. Which could be the coefficient vector of either group X or forward caste Hindus.
8. Alternatively, the attributes of forward caste Hindus could be evaluated, first using the coefficient vector of group X and then using the coefficient vector of forward caste Hindus.

If this difference is *positive* — the proportion of persons in regular salaried and wage employment is *higher* when the attributes of group X are evaluated using its own coefficients than the coefficients of forward caste Hindus — then discrimination works *in favour* of group X; on the other hand, if this difference is *negative* — the proportion of persons in regular salaried and wage employment is *smaller* when the attributes of group X are evaluated using its own coefficients rather than the coefficients of forward caste Hindus — then discrimination works *against* group X. Given that employers might be expected to have a preference for employing forward caste Hindus, compared to persons from the SC or the ST,[9] job reservation policies in favour of applicants from the SC and ST might be expected to blunt discrimination against SC/ST applicants and, possibly, even reverse it.

This study attempts to evaluate the amount by which jobs reservation has benefited persons from the SC and ST in giving them a higher share of regular salaried and wage employment than they might have had in the absence of jobs reservation. It is impossible to evaluate this directly since jobs reservation is an all-India policy and we cannot distinguish between parts of the country where the policy operated and parts where it did not. However, we can answer this question indirectly by considering a group whose members, though as deprived and poorly qualified as those from the SC and the ST, do not benefit from jobs reservation. This group consists of Muslims from the OBC.

A recent committee set up by the Prime Minister of India to look at employment among Muslims found that, despite constituting 14.7 per cent of India's population, Muslims comprised only a fraction of India's workforce; furthermore, in terms of educational achievement, Muslims were also falling behind persons from the SC and the ST (Ramesh, 2006). Consequently, it seems reasonable to regard Muslims from the OBC as representing what the employment position of persons from the SC and ST *might have been* if they had not had the shelter of jobs reservation.

Some Methodological Qualifications

The method of measuring discrimination against, or for, group X, as described above, needs to be qualified in at least three respects. First, discrimination is computed *conditional upon a given set of attributes*. If these attributes are added to, or subtracted from, then the degree of discrimination would also change. For example, if better data on educational qualifications became available, then the degree of discrimination computed from the new data would be different from the original estimate. So, there is no unique degree of discrimination.

9. This preference might be engendered by a distaste for persons from such groups (bigotry: Becker, 1971) or by a belief that employees from such groups were inferior workers (statistical discrimination: Phelps, 1972).

Second, even if one could establish a definitive vector of relevant attributes, a unique degree of discrimination might still not be established. This is because the attributes contribution could be computed using either the coefficients of group X or the coefficients of forward caste Hindus *and the two methods may not yield the same result*. There is nothing in the methodology to suggest that one computation is to be preferred over the other. Consequently, the coefficients difference — computed as the difference between the overall difference and the contribution of attributes difference — would change depending on how the attributes contribution was computed.[10] So for this reason also, there is no unique degree of discrimination.

Third, the methodology assumes a one-way relation between attributes and employment outcomes. For example, exogenously given high (low) educational qualifications are likely to lead to good (bad) employment outcomes. This assumed exogeneity of qualifications might be justified at a point in time but, with a broader time frame, it is plausible that good/bad employment outcomes in the past contribute to high/low educational qualifications in the present. In other words, there is a two-way relation between qualifications and employment outcomes: qualifications influence employment outcomes but employment outcomes also influence qualifications.

To put it differently, the degree of discrimination as measured by our methodology measures discrimination at a point in time, conditional on a given set of attributes. But the poor attributes of the members of a group may be the result of past discrimination against such persons: the fact that members of a group were denied good jobs in the past was a barrier to their acquiring good educational qualifications and this resulted in their inability to secure good jobs today. Consequently, it needs to be emphasized that the degree of discrimination measured in this study will necessarily understate the 'true' (that is, historical), but unknown, degree of discrimination.

ECONOMIC STATUS, EDUCATION AND COMMUNITY

On the basis of data for the 55th round of the NSS, Table 1 shows the distribution of 77,535 men between the ages of twenty-five and forty-five ('prime-age' males) and living in the sixteen major states of India and the Union Territory of Delhi, by their educational standard, between the following categories of economic status:[11]

10. An equivalent way of expressing this is that the coefficient difference may be computed either by evaluating the attributes of group X or by evaluating the attributes of forward caste Hindus using the two different coefficient vectors.
11. Excluded from this analysis were 2,359 prime-age males who were: attending educational institutions (655 men); attending to domestic duties, and/or producing goods and services for household use (for example, serving, tailoring, weaving), and/or engaged in free collection of goods — for example, vegetables, roots, firewood, cattle feed (310 men); rentiers, pensioners, and remittance recipients (175 men); unable to work owing to a disability (448 men); beggars and prostitutes (42 men); and 'others' (729 men).

Table 1. Economic Status and Educational Standards of Men between 25 and 45 years of age (1999–2000)

	Illiterate	Literate, but below primary	Primary or Middle	Secondary	Graduate	Total
SE	7,385	3,535	9,570	6,478	2,819	29,787
	24.79%	11.87%	32.13%	21.75%	9.46%	100.00%
	37.05%	41.52%	42.73%	37.66%	29.70%	38.42%
EMP	78	64	322	352	207	1,023
	7.62%	6.26%	31.48%	34.41%	20.23%	100.00%
	0.39%	0.75%	1.44%	2.05%	2.18%	1.32%
UFW	1,507	727	2,776	2,514	952	8,476
	17.78%	8.58%	32.75%	29.66%	11.23%	100.00%
	7.56%	8.54%	12.40%	14.61%	10.03%	10.93%
RSWW	1,417	1,095	4,248	5,843	4,711	17,314
	8.18%	6.32%	24.54%	33.75%	27.21%	100.00%
	7.11%	12.86%	18.97%	33.97%	49.63%	22.33%
CWW	9,505	3,040	5,188	1,421	142	19,296
	49.26%	15.75%	26.89%	7.36%	0.74%	100.00%
	47.68%	35.71%	23.17%	8.26%	1.50%	24.89%
SKW	41	52	290	595	661	1,639
	2.50%	3.17%	17.69%	36.30%	40.33%	100.00%
	0.21%	0.61%	1.29%	3.46%	6.96%	2.11%
Total	19,933	8,513	22,394	17,203	9,492	77,535
	25.71%	10.98%	28.88%	22.19%	12.24%	100.00%
	100.00%	100.00%	100.00%	100.00%	100.00%	

Notes:
SE = self-employed; EMP = employer; RSWW = regular salaried or wage worker; CWW = casual wage worker; SKW = seeking work.
First figure in column is total in caste/religion category; second figure is row percentage; third figure is column percentage.
Source: NSS 55th Round.

1. own account workers (self-employed)
2. unpaid family workers
3. regular salaried or wage workers
4. casual wage labourers
5. employers
6. seeking and/or available for work.

Of these six categories, the first four were the main categories of economic status for prime-age men: 29,787 of the 77,535 men (38 per cent) were own account workers; 17,314 men (22 per cent of the total) were regular salaried or wage workers; 19,296 men (25 per cent of the total) were casual labourers; and 8,476 men (11 per cent of the total) were unpaid family workers.

Being a casual labourer or an own account worker was largely the preserve of poorly educated men, while regular salaried or wage workers were largely drawn from the ranks of the better educated. Of the 19,296 prime-age men who were casual wage labourers, 92 per cent had an education standard less than secondary school and 49 per cent were illiterate; of the 29,787 men who

were own account workers, 69 per cent had an education standard less than secondary school and 25 per cent were illiterate; on the other hand, of the 17,314 prime-age men who were regular salaried or wage workers, 61 per cent were educated to secondary (or above) and 27 per cent were graduates (or above).

This study implicitly assumes that becoming a regular salaried or wage worker was the most desirable outcome for prime-age men and, compared to that, self-employment or casual wage labour were inferior outcomes. One can cite many justifications for this assumption, including the committee set up by the Prime Minister of India (referred to above) to look at minority employment and, in particular, to examine why Muslims comprise only a fraction of India's workforce. This assumption is also consistent with evidence from the field: for example, Jeffery and Jeffery (1997), in their study of Muslims in Bijnor, argued that many Muslims regarded their relative economic weakness as stemming from their being excluded from jobs due to discriminatory practices in hiring. The belief that their sons would not get jobs then led Muslim parents to devalue the importance of education as an instrument of upward economic mobility.[12]

A striking feature of Table 1 is how few men were seeking, and/or available for, work: only 1639 men (2 per cent of the total) were unemployed in the conventional meaning of the term. Moreover, job search appeared to be the prerogative of better educated men: of the 1639 'unemployed' men, 76 per cent were educated to secondary level or above and 40 per cent were graduates or postgraduates.

Table 2 shows the distribution of prime-age men across the categories of economic status by religion and caste. Since nearly one in ten persons from the OBC were Muslim, they are identified here separately from the non-Muslims (mostly Hindu, but some Sikhs) of the OBC. Table 2 clearly shows that OBC prime-age males were different from those belonging to the SC in two important respects. First, both Muslim and non-Muslim OBC men were *more* likely to be in self-employment (45 and 41 per cent respectively) than men from the SC (28 per cent). Second, both Muslim and non-Muslim OBC men were *less* likely to work as casual labourers (27 and 25 per cent respectively) than men from the SC (47 per cent).

Prime-age males from the OBC also differed from their forward caste Hindu counterparts in two important respects. First, forward caste Hindu men were more likely to be in regular salaried or wage employment (32 per cent) than OBC men (19 per cent of non-Muslim, and 15 per cent of Muslim OBC men). Second, forward caste Hindu men were even less likely to work as casual labourers (10 per cent) than men from the OBC. Consequently, if one was to establish a hierarchy of communities, in terms of the 'desirability'

12. However, there may be cases where self-employment is the preferred outcome over the available choices. We are unable to take account of such preferences because all we observe is the outcome and not the reasons for the outcome.

Table 2. Economic Status and Caste/Religion of Men between 25 and 45 Years of Age (1999–2000)

	SE	EMP	UPFW	RSWW	CWL	SKW	Total
ST (non-Christian)	1,982	18	522	713	2,401	51	5,687
	34.85%	0.32%	9.18%	12.54%	42.22%	0.90%	100.00%
	6.65%	1.76%	6.16%	4.12%	12.44%	3.11%	7.33%
ST (Christian)	149	1	34	50	95	6	335
	44.48%	0.30%	10.15%	14.93%	28.36%	1.79%	100.00%
	0.50%	0.10%	0.40%	0.29%	0.49%	0.37%	0.43%
SC	3,477	42	628	2,267	5,919	212	12,545
	27.72%	0.33%	5.01%	18.07%	47.18%	1.69%	100.00%
	11.67%	4.11%	7.41%	13.09%	30.67%	12.93%	16.18%
OBC (non-Muslim)	9,904	308	3,012	4,656	6,073	386	24,339
	40.69%	1.27%	12.38%	19.13%	24.95%	1.59%	100.00%
	33.25%	30.11%	35.54%	26.89%	31.47%	23.55%	31.39%
OBC (Muslim)	1,222	60	245	416	728	46	2,717
	44.98%	2.21%	9.02%	15.31%	26.79%	1.69%	100.00%
	4.10%	5.87%	2.89%	2.40%	3.77%	2.81%	3.50%
Hindu (non-ST/SC/OBC)	9,350	451	3,157	7,430	2,410	754	23,552
	39.70%	1.91%	13.40%	31.55%	10.23%	3.20%	100.00%
	31.39%	44.09%	37.25%	42.91%	12.49%	46.00%	30.38%
Muslim (non-ST/SC/OBC)	2,927	77	484	1,254	1,450	134	6,326
	46.27%	1.22%	7.65%	19.82%	22.92%	2.12%	100.00%
	9.83%	7.53%	5.71%	7.24%	7.51%	8.18%	8.16%
Christian (non-ST/SC/OBC)	200	46	37	296	176	35	790
	25.32%	5.82%	4.68%	37.47%	22.28%	4.43%	100.00%
	0.67%	4.50%	0.44%	1.71%	0.91%	2.14%	1.02%
Sikh (non-ST/SC/OBC	576	20	357	232	44	15	1244
	46.30%	1.61%	28.70%	18.65%	3.54%	1.21%	100.00%
	1.93%	1.96%	4.21%	1.34%	0.23%	0.92%	1.60%
Total	29,787	1,023	8,476	17,314	19,296	1,639	77,535
	38.42%	1.32%	10.93%	22.33%	24.89%	2.11%	100.00%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Notes:
SE = self-employed; EMP = employer; RSWW = regular salaried or wage worker; CWW = casual wage worker; SKW = seeking work.
First figure in column is total in caste/religion category; second figure is row percentage; third figure is column percentage.
Source: NSS 55th Round.

of the economic status of their prime-age men, then the SC and the non-Christian ST, a large proportion of whose men were casual labourers, would lie at the bottom; forward caste Hindus, with one-third of their men in regular salaried or wage employment, and only one-tenth of their men working as casual labourers, would be at the top; and sandwiched between them would be the OBC (non-Muslim and Muslim) and non-OBC Muslims.

Lastly, Table 3 shows the education standards of prime-age men from the different communities. Non-Christian men from the ST, along with men from the SC, had the lowest level of educational achievement: 52 per cent of the former and 43 per cent of the latter were illiterate. They were followed by Christian men from the ST (35 per cent of whom were illiterate) and Muslims

Table 3. Education Standard and Caste/Religion of Men between 25 and 45 Years of Age (1999–2000)

	Illiterate	Literate, but below primary	Primary or Middle	Secondary	Graduate	Total
ST (non-Christian)	2,630	705	1,066	508	187	5,096
	51.61%	13.83%	20.92%	9.97%	3.67%	100.00%
	14.37%	9.19%	5.61%	3.70%	2.44%	7.68%
ST (Christian)	103	40	87	46	18	294
	35.03%	13.61%	29.59%	15.65%	6.12%	100.00%
	0.56%	0.52%	0.46%	0.33%	0.23%	0.44%
SC	5,007	1,627	3,113	1,401	515	11,663
	42.93%	13.95%	26.69%	12.01%	4.42%	100.00%
	27.35%	21.21%	16.38%	10.20%	6.71%	17.57%
OBC (non-Muslim)	5,764	2,550	6,601	4,106	1,612	20,633
	27.94%	12.36%	31.99%	19.90%	7.81%	100.00%
	31.49%	33.25%	34.73%	29.88%	21.01%	31.08%
OBC (Muslim)	818	338	778	337	95	2,366
	34.57%	14.29%	32.88%	14.24%	4.02%	100.00%
	4.47%	4.41%	4.09%	2.45%	1.24%	3.56%
Hindu (non-ST/SC/OBC)	1,926	1,434	5,253	5,978	4,599	19,190
	10.04%	7.47%	27.37%	31.15%	23.97%	100.00%
	10.52%	18.70%	27.64%	43.50%	59.95%	28.90%
Muslim (non-ST/SC/OBC)	1,845	876	1,638	866	406	5,631
	32.77%	15.56%	29.09%	15.38%	7.21%	100.00%
	10.08%	11.42%	8.62%	6.30%	5.29%	8.48%
Christian (non-ST/SC/OBC)	42	31	251	225	123	672
	6.25%	4.61%	37.35%	33.48%	18.30%	100.00%
	0.23%	0.40%	1.32%	1.64%	1.60%	1.01%
Sikh (non-ST/SC/OBC)	172	69	219	275	117	852
	20.19%	8.10%	25.70%	32.28%	13.73%	100.00%
	0.94%	0.90%	1.15%	2.00%	1.53%	1.28%
Total	18,307	7,670	19,006	13,742	7,672	66,397
	27.57%	11.55%	28.62%	20.70%	11.55%	100.00%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Notes:
First figure in column is total in caste/religion category; second figure is row percentage; third figure is column percentage.
Source: NSS 55th Round.

(35 per cent of Muslims from the OBC, and 33 per cent of non-OBC Muslims, were illiterate). The best educated men were forward caste Hindus and (non-ST) Christians: only 10 per cent of Hindu and only 6 per cent of Christian prime-age men were illiterate, while 24 per cent of Hindu and 18 per cent of Christian prime-age men were graduates.

A MULTINOMIAL LOGIT MODEL OF ECONOMIC STATUS OUTCOMES

The multinomial logit model has been used to analyse occupational outcomes by, amongst others, Borooah (2001); Borooah and Mangan (2002); Schmidt and Strauss (1975). The basic question that such a model seeks to answer is:

what is the probability that a person with a particular set of characteristics, will be found in a specific category of economic status (hereafter, simply 'status')? These answers were obtained by estimating the multinomial logit equation where the dependent variable Y_i took the values, 1, 2 or 3, depending upon whether person i was self-employed (own account worker); a regular salaried or wage worker; a casual wage labourer.[13] In essence, with self-employment ($Y_i = 1$) as the base category, the model consisted of two equations ($Y_i = 2$, $Y_i = 3$) each of which took the following form:

$$\log\left[\frac{\Pr(Y_i = j)}{\Pr(Y_i = 1)}\right] = f(\text{landholding, social group, education, state, sector}) + \text{error}$$

Table 4 shows the results of estimating a multinomial logit model for 66,397 prime-age men who were in *non-family employment*, that is in one of the following (mutually exclusive) categories of economic status: own account worker; regular salaried or wage employment; casual wage labourer. Excluded from the analysis were: 1,023 prime-age men who were employers, 8,476 prime-age men who were unpaid family workers and 1,639 men who were searching and/or available for work. The coefficient estimates shown in Table 4 are to be interpreted as the *change* in the log risk-ratios, $\log[\frac{\Pr(Y_i=j)}{\Pr(Y_i=1)}]$, consequent upon a unit change in the value of the associated variable. A positive coefficient implies that the ratio increases and a negative coefficient implies that it decreases.[14] Because the community and the education standard categories (see Table 4 for a full listing), in addition to being mutually exhaustive, were also collectively exhaustive, one of the communities and one of the education standards had to be omitted from the equation in order to avoid multicollinearity in the presence of the intercept term: forward caste Hindus and 'illiteracy' were the two omitted or residual categories. The variables relating to the included communities and education standards were

13. With J mutually exclusive and collectively exhaustive outcomes, indexed $1 \ldots J$, the multinomial logit model is defined by a pair of equations. The first defines *the log odds ratio* of a person i being in status $j > 1$, relative to being in the 'base' status $j = 1$, as a linear function of $\mathbf{X_i} = \{X_{ik}, k = 1 \ldots K\}$, the vector of values of K explanatory variables ($X_{i1} = 1$) for the person: $\log\left(\frac{\Pr(Y_i=j)}{\Pr(Y_i=1)}\right) = \sum_{k=1}^{K} \beta_{jk} X_{ik} = \mathbf{X_i}\boldsymbol{\beta_j}$ where: Y_i is an integer variable which takes the value j if, and only if, outcome j occurs for person i, and $\boldsymbol{\beta_j}$ is the vector of coefficients associated with outcome j, β_{j1} being the coefficient associated with the intercept term. The second equation defines the probability of outcome j ($j = 1 \ldots J$) occurring for individual i as: $\Pr(Y_i = j) = \exp(Z_{ij})/[1 + \sum_{r=1}^{J} Z_{ir}] = F(\mathbf{X_i}\boldsymbol{\beta_j})$.

14. However, the direction of change in the probability of an outcome, consequent upon a unit change in X_{ik}, cannot be inferred from the sign of β_{jk}. The reason is that, in a multinomial model, a change in the value of a variable for a person changes the probability of *every* outcome for him/her. Since these changes are constrained to sum to zero, whether the probability of a particular outcome goes up or down depends on what happens to the probabilities of the other outcomes.

Table 4. Multinomial Logit Estimates from the Economic Status Equations

	Coefficients		Marginal Probabilities		
	Salaried/ Wage Employee	Casual Wage Labourer	Own Account Worker	Salaried/ Wage Employee	Casual Wage Labourer
Land-ownership (default: no land)					
Land owner:	−0.663***	0.037	**0.0795816**	**−0.1175316**	**0.03795**
<0.22 hectares	(24.70)	(1.21)	0.414959	0.414959	0.414959
Land owner:	−1.389***	−1.040***	**0.2719407**	**−0.1685166**	**−0.1034241**
0.22–1.13 hectares	(34.28)	(27.60)	0.187102	0.187102	0.187102
Land owner:	−1.786***	−2.733***	**0.4140371**	**−0.1790548**	**−0.2349823**
>1.13 hectares	(42.41)	(53.30)	0.149706	0.149706	0.149706
Age (default: 25–30 years)					
Age: 30–35 years	−0.106***	−0.420***	**0.0606146**	**0.0001679**	**−0.0607826**
	(3.59)	(14.63)	0.246758	0.246758	0.246758
Age: 36–40 years	−0.064**	−0.657***	**0.0782168**	**0.0174179**	**−0.0956346**
	(2.16)	(22.27)	0.23968	0.23968	0.23968
Age: 41–45 years	0.059*	−0.773***	**0.0689083**	**0.0444713**	**−0.1133797**
	(1.91)	(24.12)	0.19778	0.19778	0.19778
Caste/Religion (default: forward caste Hindu)					
Scheduled Tribe	0.032	0.558***	**−0.0782456**	**−0.0266047**	**0.1048502**
(Christian)	(0.18)	(3.67)	0.004428	0.004428	0.004428
Scheduled Tribe	0.240***	0.997***	**−0.1623687**	**−0.0221732**	**0.1845419**
	(4.43)	(21.80)	0.07675	0.07675	0.07675
Scheduled Caste	0.378***	1.150***	**−0.1947364**	**−0.0058437**	**0.2005802**
	(10.38)	(31.55)	0.175656	0.175656	0.175656
OBC (non-Muslim)	−0.039	0.353***	**−0.037822**	**−0.0250212**	**0.0628432**
	(1.35)	(10.50)	0.310752	0.310752	0.310752
OBC (Muslim)	−0.472***	−0.072	**0.0643618**	**−0.07252**	**0.0081582**
	(7.11)	(1.18)	0.035634	0.035634	0.035634
Muslim (not from OBC)	−0.309***	0.039	**0.03246**	**−0.0535366**	**0.0210766**
	(7.29)	(0.88)	0.084808	0.084808	0.084808
Christian (not from ST)	0.331***	0.188	−0**.066322**	**0.0532096**	**0.0131124**
	(3.13)	(1.54)	0.010121	0.010121	0.010121
Sikh (Muslim (not from	−0.237**	−0.582***	**0.0921356**	**−0.0188713**	**−0.073264**
Scheduled or OBC)	(2.38)	(3.34)	0.012832	0.012832	0.012832
Education (default: illiterate)					
Literate, below primary	0.325***	−0.429***	**−0.0056342**	**0.0837835**	**−0.0781493**
level schooling	(6.83)	(12.79)	0.115517	0.115517	0.115517
Primary or Middle level	0.594***	−0.852***	**−0.0042796**	**0.1553775**	**−0.1510979**
schooling	(16.06)	(30.55)	0.286248	0.286248	0.286248
Secondary or higher	1.263***	−1.603***	**−0.0975748**	**0.334675**	**−0.2371002**
secondary level schooling	(33.44)	(42.09)	0.206967	0.206967	0.206967
Graduate	1.872***	−2.844***	**−0.2286226**	**0.5002508**	**−0.2716283**
	(44.27)	(31.35)	0.115547	0.115547	0.115547
State (default: Tamil Nadu)					
Andhra Pradesh	−0.335***	−0.402***	**0.0882061**	**−0.0404441**	**−0.047762**
	(6.08)	(7.24)	0.082534	0.082534	0.082534
Assam	−0.000	−0.866***	**0.0788976**	**0.0334961**	**−0.1123937**
	(0.00)	(13.14)	0.048602	0.048602	0.048602
Bihar	−1.025***	−0.633***	**0.1890193**	**−0.1285824**	**−0.0604369**
	(17.14)	(11.96)	0.090817	0.090817	0.090817
Gujarat	−0.321***	−0.007	**0.0396594**	**−0.0530456**	**0.0133862**
	(5.24)	(0.11)	0.052126	0.052126	0.052126

Table 4. (Continued)

	Coefficients		Marginal Probabilities		
	Salaried/ Wage Employee	**Casual Wage Labourer**	**Own Account Worker**	**Salaried/ Wage Employee**	**Casual Wage Labourer**
Haryana	−0.384***	−1.067***	**0.1508621**	**−0.0313588**	**−0.1195033**
	(4.68)	(10.82)	0.020091	0.020091	0.020091
Himachal Pradesh	0.120	−0.378***	**0.0208385**	**0.0400447**	**−0.0608832**
	(1.50)	(4.01)	0.020438	0.020438	0.020438
Karnataka	−0.229***	0.091	**0.016414**	**−0.0431166**	**0.0267026**
	(3.66)	(1.45)	0.051011	0.051011	0.051011
Kerala	−0.083	0.851***	**−0.1133187**	**−0.0633782**	**0.1766969**
	(1.15)	(12.53)	0.039053	0.039053	0.039053
Madhya Pradesh	−0.465***	−0.118**	**0.0701054**	**−0.070636**	**0.0005306**
	(8.15)	(2.10)	0.081901	0.081901	0.081901
Maharashtra	0.153***	0.044	**−0.0254925**	**0.0260668**	**−0.0005742**
	(2.88)	(0.75)	0.086284	0.086284	0.086284
Orissa	−0.257***	−0.287***	**0.0656652**	**−0.0318415**	**−0.0338237**
	(3.63)	(4.42)	0.04321	0.04321	0.04321
Punjab	−0.144**	−0.956***	**0.1079706**	**0.0084701**	**−0.1164407**
	(2.09)	(12.42)	0.03949	0.03949	0.03949
Rajasthan	−0.365***	−1.005***	**0.1451541**	**−0.0286173**	**−0.1165367**
	(5.87)	(14.66)	0.051297	0.051297	0.051297
Uttar Pradesh	−0.801***	−1.215***	**0.2217999**	**−0.0887599**	**−0.13304**
	(15.66)	(23.05)	0.124991	0.124991	0.124991
West Bengal	−0.662***	−0.635***	**0.151791**	**−0.0825483**	**−0.0692427**
	(11.66)	(11.08)	0.081465	0.081465	0.081465
Delhi	−0.154*	−1.390***	**0.1322383**	**0.0147418**	**−0.1469801**
	(1.80)	(8.98)	0.013736	0.013736	0.013736
Sector (default: rural)					
Urban	0.492***	−1.080***	**0.0611228**	**0.1420136**	**−0.2031364**
	(17.70)	(38.88)	0.0.3779	0.0.3779	0.0.3779
Constant	−1.062***	2.581***			
	(13.49)	(33.79)			
Observations	66,397	66,397			
Pseudo-R^2	0.2505	0.2505			

Notes:
Absolute value of z statistics in parentheses.
*Significant at 10%; ** significant at 5%; *** significant at 1%; significant marginal probabilities in **bold.**
In each marginal probability cell: the figure in the first row is the marginal probability, prob/x; the figure in the second row is the mean value of x, the relevant variable.

binary variables, taking the value 1 if a man belonged to that community, or had that standard of education, and zero if he did not.

As observed earlier, the signs of the coefficient estimates associated with a variable — which, consequent upon a unit change in the value of the variable, reflect the directions of change in the risk-ratios — do not predict the directions of change in the probabilities of the outcomes. The changes in the probabilities of the outcomes, following a change in the value of a variable, are the *marginal probabilities* associated with that variable.[15] These marginal probabilities are shown in the right-hand panel of Table 4.

15. Defined as $\frac{\partial \Pr(Y_i = j)}{\partial X_{ik}}$

The effects of changing the value of a dummy variable (as are all the variables in Table 7, below) are analysed by comparing the probabilities when the dummy variable takes the value of the 'reference' group with the probabilities that result from the dummy variable taking the value relevant to another group, the values of all the other variables being held constant at their mean values. Some examples of this are given below.

Scheduled Castes and Other Backward Classes

The marginal probabilities against the SC group in Table 4 are obtained as *the difference* between the probabilities (of the three outcomes) if everyone belonged to the SC and the probabilities if everyone was a forward caste Hindu, the values of the other variables (size of land owned, age, education standard) being held at their mean values. The results suggest that the probability of being self-employed would *fall* by 0.08 points[16] and the probability of being a casual wage labourer would *rise* by 0.10 points.

The pattern of marginal probabilities for the (non-Muslim) OBC was similar to that of the SC: relative to forward caste Hindus, the probability of being in self-employment *fell*, and the probability of being a casual wage labourer *rose*, for both groups. However, compared to the SC group, the marginal probabilities for the (non-Muslim) OBC show that the fall in the probability of self-employment and the rise in the probability being casual wage labourers was much smaller, but the fall in the probability of being in regular salaried or wage employment was greater.

Muslims

In contrast to the SC (and the non-Muslim OBC), the pattern of marginal probabilities for Muslims, whether from the OBC or not, was similar: relative to forward caste Hindus, the probabilities of being in self-employment and of being casual wage labourers *rose*, and the probability of being in regular salaried or wage employment *fell*, for both groups. The marginal probabilities for (non-OBC) Muslims[17] suggest that the probability of being self-employed would *rise* by 0.032 points and the probability of being in regular salaried or wage employment would *fall* by 0.053 points. The rise in the probability of self-employment was much higher for OBC Muslims, compared to non-OBC Muslims (0.064 against 0.032), but the fall in the probability of being in regular salaried or wage employment was more precipitous (0.073 against 0.053) for the former than the latter group.

16. Remembering that the probabilities lie between 0 and 1.
17. The difference between the probabilities (of the three outcomes) if everyone was a (non-OBC) Muslim and the probabilities if everyone was a forward caste Hindu, the values of the other variables (size of land owner, age, education standard) held at their mean values.

Christians and Scheduled Tribes

The pattern of marginal probabilities associated with non-Christian persons from the ST was very similar to that for SC persons: relative to forward caste Hindus, the probabilities of being in self-employment *fell* by 0.162 points for non-Christian persons from the ST (compared to a fall of 0.194 points for persons from the SC), and the probabilities of being in casual wage labourer *rose* by 0.184 points (compared to a rise of 0.201 points for persons from the SC). By contrast, the fall in the probability of being in self-employment (0.078 points) and the rise in the probability of being in casual wage labour (0.104 points) was much more muted for Christian persons from the ST. On the other hand, non-tribal Christians had a greater propensity for salaried employment than forward caste Hindus: relative to forward caste Hindus, the probabilities of non-tribal Christians being in salaried employment rose by 0.053 points, while the probability of being self-employed fell by 0.066 points.

Education Standards

The marginal probabilities associated with the education standards show that, relative to illiteracy, rising education standards lowered the probabilities of being self-employed or a casual wage labourer and increased the probability of being in regular salaried or wage employment. Compared to illiterate prime-age men, this culminated in graduate prime-age males having probabilities of being in regular salaried or wage employment, 0.5 points higher; casual wage labourers, 0.272 points lower; self-employed, 0.229 points lower.

Improvements in the standard of education led to progressively greater increases in the probability of being in regular salaried or wage employment. Self-employment could be regarded as the next most desirable outcome and being a casual wage labourer as the least desirable. Improvements in the standard of education led to a fall in the probabilities of being self-employed and being a casual wage labourer but, with improvements in the education standard, the fall in the probability of being a casual wage labourer was considerably greater than the fall in the probability of being self-employed.

THE DECOMPOSITION OF PROBABILITIES: SALARIED AND WAGE EMPLOYMENT

The Oaxaca (1973) and Blinder (1973) method of decomposing group differences in means into an 'explained' and a 'residual' component has been extended to explaining group differences in probabilities, derived from models of discrete choice with *binary* outcomes, by Blackaby *et al.* (1997, 1998, 1999), Gomulka and Stern (1990), and by Nielsen (1998). This methodology

Table 5. The Decomposition of Inter-Community Differences in the Proportion of Prime-Age Men in Regular Salaried and Wage Employment: Hindus treated as Community X

	Sample Average	**Groups treated as group *r***	
	$\bar{P}^r - \bar{P}^s$	$P(\mathbf{X^s}, \hat{\beta}^{\mathbf{r}}) - P(\mathbf{X^s}, \hat{\beta}^{\mathbf{s}})$	$P(\mathbf{X^r}, \hat{\beta}^{\mathbf{r}}) - P(\mathbf{X^s}, \hat{\beta}^{\mathbf{r}})$
r = Scheduled Tribe (Christian) s = forward caste Hindus	0.170–0.387 = −0.217	0.374–0.387 = −0.013	0.170–0.374 = −0.204
r = Scheduled Tribe (non-Christian) s = forward caste Hindus	0.140–0.387 = −0.247	0.391–0.387 = 0.004	0.140–0.391 = −0.251
r = SC s = forward caste Hindus	0.194–0.387 = −0.193	0.407–0.387 = 0.02	0.194–0.407 = −0.213
r = OBC (Muslim) s = forward caste Hindus	0.176–0.387 = −0.211	0.309–0.387 = −0.078	0.176–0.309 = −0.133
r = OBC (non-Muslim) s = forward caste Hindus	0.226–0.387 = −0.161	0.369–0.387 = −0.018	0.226–0.369 = −0.143
r = Muslims s = forward caste Hindus	0.223–0.387 = −0.164	0.333–0.387 = −0.054	0.223–0.333 = −0.11
r = Christians s = forward caste Hindus	0.440–0.387 = 0.053	0.440–0.387 = 0.053	0.440–0.440 = −0.0
r = Sikhs s = forward caste Hindus	0.272–0.387 = −0.115	0.359–0.387 = −0.028	0.272–0.359 = −0.087

can be extended, as shown in Borooah (2005), to models of discrete choice with *multiple* (that is, more than two) outcomes.

As observed earlier, regular salaried or wage employment could be regarded as the most desirable of the three categories of economic status analysed. Tables 5 and 6 show the decomposition of the difference between 'community X' and forward caste Hindus in the proportions of their members in regular salaried or wage employment. We illustrate the discussion by considering Muslims and the SC.

Muslims and Scheduled Castes

The columns headed 'sample average' in Tables 5 and 6 show that 19.4 per cent of prime-age males from the SC, compared to 38.7 per cent of forward caste Hindu men, were in regular salaried or wage employment — a difference of 19.3 points. The same column shows that 22.3 per cent of non-OBC Muslims and 17.6 per cent of Muslims from the OBC were in salaried or wage employment. So, compared to forward caste Hindus, both the SC and Muslims suffered from a (salaried) 'employment deficit'. Among Muslims, those from the OBC were in greater deficit than non-OBC Muslims.

The next column of Table 5 shows that if forward caste Hindu attributes had been evaluated at SC coefficients ('group *s* treated as group *r*'),

Table 6. The Decomposition of Inter-Community Differences in the Proportion of Prime-Age Men in Regular Salaried and Wage Employment: Community X treated as Hindus

	Sample Average	**Groups treated as group r**	
	$\bar{P}^r - \bar{P}^s$	$\bar{P}(\mathbf{X^r}, \hat{\beta}^{\mathbf{r}}) - \bar{P}(\mathbf{X^r}, \hat{\beta}^{\mathbf{s}})$	$P(\mathbf{X^r}, \hat{\beta}^{\mathbf{s}}) - P(\mathbf{X^s}, \hat{\beta}^{\mathbf{s}})$
r = Scheduled Tribe (Christian) s = forward caste Hindus	0.170–0.387 = −0.217	0.170–0.184 = −0.014	0.184–0.387 = −0.203
r = Scheduled Tribe (non-Christian) s = forward caste Hindus	0.140–0.387 = −0.247	0.140–0.153 = −0.013	0.153- 0.387 = −0.234
r = SC s = forward caste Hindus	0.194–0.387 = −0.193	0.194–0.205 = −0.011	0.205–0.387 = −0.182
r = OBC (Muslim) s = forward caste Hindus	0.176–0.387 = −0.211	0.176–0.235 = −0.059	0.235–0.387 = −0.152
r = OBC (non-Muslim) s = forward caste Hindus	0.226–0.387 = −0.161	0.226–0.245 = −0.019	0.245–0.387 = −0.142
r = Muslims s = forward caste Hindus	0.223–0.387 = −0.164	0.223–0.269 = −0.046	0.269–0.387 = −0.118
r = Christians s = forward caste Hindus	0.440–0.387 = 0.053	0.440–0.392 = 0.048	0.392–0.387 = −0.005
r = Sikhs s = forward caste Hindus	0.272–0.387 = −0.115	0.272–0.302 =−0.03	0.302–0.387 = −0.03

40.7 per cent of forward caste Hindu men would have been in regular salaried or wage employment — 2 points *above* the observed Hindu proportion of 38.7 per cent. On the other hand, if Hindu attributes had been evaluated at (non-OBC) Muslim coefficients, 33.3 per cent of forward caste Hindu men would have been in regular salaried or wage employment — 5.4 points *below* the observed Hindu proportion of 38.7 per cent. Lastly, if Hindu attributes had been evaluated at (OBC) Muslim coefficients, 30.9 per cent of forward caste Hindu men would have been in regular salaried or wage employment — 7.8 points *below* the observed Hindu proportion of 38.7 per cent.

Since forward caste Hindus would have had a higher probability of salaried employment if they had been treated as SC, and a lower probability if they had been treated as Muslims, SC coefficients were *more* favourable, and Muslim coefficients were *less* favourable, to securing regular salaried or wage employment, compared to the coefficients for forward caste Hindus. Given that employers might be expected to have a preference for employing forward caste Hindus, compared to Muslims and persons from the SC, jobs reservation policies in favour of applicants from the SC were strong enough to reverse employer bias against this group, at least as far as prime-age men were concerned. However, since such policies did not extend to Muslims they did not receive protection from any employer bias against them.

Table 6 ('Community X treated as Hindus') shows that if Muslims had been treated as Hindus, their probability of being in salaried employment would have risen from 22.3 per cent to 26.9 per cent for Muslims not from the OBC, and from 17.6 per cent to 23.5 per cent for Muslims from the OBC. In other words, this implies a coefficients bias against both groups of Muslims and confirms the anti-Muslim coefficients bias suggested by the results of Table 5. However, if prime-age men from the SC had been treated as Hindus, their probability of being in salaried employment would have risen from 19.4 per cent to 20.5 per cent (Table 6) implying a slight coefficients bias against the SC in contrast to the slight pro-SC coefficients bias suggested by Table 5.

Employment Deficit and Surplus Groups

Tables 5 and 6 show that the following seven groups were in 'employment deficit' *vis-à-vis* forward caste Hindus, meaning that the proportion of prime-age males from these groups who were in regular salaried or wage employment was less than the corresponding proportion of forward caste Hindus:

1. ST (Christian)
2. ST (non-Christian)
3. SC
4. OBC (non-Muslim)
5. OBC (Muslim)
6. Muslims (not from the OBC)
7. Sikhs

Of these groups, the first three benefited from jobs reservation policies while the latter four did not. This is reflected in the fact that only a very small proportion of the employment deficit for the first three could be explained by coefficient bias. For example, as Tables 5 and 7 show, of the total employment gap of 0.217 points between Christian ST and forward caste Hindus, only 6 per cent (0.013 points out of 0.217) could be attributed to coefficients bias, the remaining 94 per cent being due to the relatively inferior attributes of Christian men from the ST. Tables 5 and 7 show that, for the SC and the non-Christian ST, jobs reservation was sufficient to overcome any discriminatory bias against these groups so as to give them a coefficients advantage *vis-à-vis* forward caste Hindus. Tables 6 and 8 show that, for the SC and the non-Christian ST, jobs reservation meant that only a small proportion (around 5 per cent) of the employment deficit relative to forward caste Hindus could be ascribed to coefficient disadvantage.

Notwithstanding this advantage, the proportion of non-Christian prime-age men from the ST and prime-age men from the SC in regular salaried

Table 7. Coefficient and Attribute Contributions to Differences between Hindus and Others in their Respective Proportions in Regular Salaried and Wage Employment

Community X↓	Hindu attributes evaluated using X's coefficients		
	Observed Difference	% Due to Coefficient Differences	% Difference Due to Attribute Differences
Scheduled Tribe (Christian)	−0.217	6	94
Scheduled Tribe (non-Christian)	−0.247	−2	102
SC	−0.193	−10	110
OBC (Muslim)	−0.211	37	63
OBC (non-Muslim)	−0.161	12	88
Muslims	−0.164	33	67
Christians	0.053	100	0
Sikhs	−0.115	24	76

Table 8. Coefficient and Attribute Contributions to Differences between Hindus and Others in their Respective Proportions in Regular Salaried and Wage Employment

Community X↓	Community X attributes evaluated using Hindu coefficients		
	Observed Difference	% Due to Coefficient Differences	% Difference Due to Attribute Differences
Scheduled Tribe (Christian)	−0.217	6	94
Scheduled Tribe (non-Christian)	−0.247	5	95
SC	−0.193	6	94
OBC (Muslim)	−0.211	28	72
OBC (non-Muslim)	−0.161	11	89
Muslims	−0.164	28	72
Christians	0.053	91	9
Sikhs	−0.115	26	74

or wage employment (respectively, 14.0 and 19.4 per cent) was much lower than the 38.7 per cent of forward caste Hindu men so employed. This entire difference, as Tables 7 and 8 show, could be ascribed to the relative lack of employment-friendly attributes (mostly, lower educational achievements) among men from the SC and (non-Christians) from the ST. Table 3 pointed to the gulf in education standards between these two groups on the one hand and forward caste Hindus on the other.[18] Given this gulf, current demands in India for extending, for example, jobs reservation for the SC and the ST to the private sector are misplaced: further improvements in coefficients bias towards these groups will do little to improve their effectiveness as employees. On the other hand, strengthening their currently weak employment-friendly attributes will.

18. See Borooah and Iyer (2005) for a discussion of school enrolments in India by community.

Tables 7 and 8 show that of the groups which were in employment deficit and which did not benefit from jobs reservation policies, non-Muslim OBC had the smallest deficit (16.1 points), followed by Muslims not from the OBC (16.4 points), followed by Muslims from the OBC (21.1 points). Tables 7 and 8 also allow one to deduce for these groups how much of their employment deficit was due to coefficients bias against them and how much was due to the fact that their attributes were less employment-friendly than those of forward caste Hindus.

Table 7 ('Hindus treated as community X') shows that only 11 per cent of the employment deficit of non-Muslim prime-age men from the OBC (1.8 points out of 16.1) could be blamed on coefficient bias, attribute disadvantage accounting for the remaining 89 per cent. Table 8 ('community X treated as Hindus') computes these proportions as 12 and 88 per cent, respectively. However, from Table 7, 33 per cent of the employment deficit of Muslims not from the OBC (Table 5: 5.4 points out of 16.4), and 37 per cent of the employment deficit of Muslims from the OBC (Table 5: 7.8 points out of 21.1), could be blamed on coefficients bias;[19] Table 8 computes these proportions as 28 per cent for both groups. So, in the light of the Mandal Commission's Report to extend reservation to members of the OBC, and the subsequent debate surrounding it, our analysis shows that the extension of jobs reservation to all persons from the OBC (90 per cent of whom are not Muslims) is misplaced: it is all Muslims, whether from the OBC or not, rather than non-Muslims belonging to the OBC, that need protection from adverse coefficients bias.

The one group which was in employment surplus *vis-à-vis* forward caste Hindus was (non-Tribal) Christians.[20] Tables 7 and 8 show that of the difference of 5.3 points between the employment rates of Christian and forward caste Hindu men, almost all could be attributed to the coefficient bias (entirely unaided by any jobs reservation) towards Christian men.

THE EFFECTIVENESS OF JOBS RESERVATION FOR THE SCHEDULED CASTES AND SCHEDULED TRIBES

The purpose of reserving a certain proportion of jobs for members of a particular group is to enable a greater proportion of its members to be in employment than would have been possible without such reservation. In the absence of reservation, the reluctance of employers to hire persons from certain groups — whether through 'taste based' or 'statistical' discrimination — would mean that *ceteris paribus* job seekers from disfavoured groups would be relatively less successful in finding jobs. For example, Tables 7 and 8

19. The remainder, of course, being due to attributes disadvantage.
20. That is, the proportion of prime-age males from these groups who were in regular salaried employment was greater than the corresponding proportion of forward caste Hindus.

show that, relative to forward caste Hindus, Muslim men faced quite severe coefficients bias: purely on account of their religion, the probability of Muslim men being in regular salaried or wage employment was less than that of forward caste Hindus.

However, even without coefficient bias, low levels of education and poor qualifications within a community would mean that only a small proportion of its members would succeed in securing salaried employment. For example, Table 6 shows that if the attributes of prime-age Muslim men from the OBC were evaluated using forward caste Hindu coefficients (that is, one abstracted from coefficients bias) only 23.5 per cent of Muslims, compared to 38.7 per cent of forward caste Hindus, would be in regular salaried or wage employment.

Jobs reservation cannot alter the employment-related attributes of the SC and the ST but, *given those attributes*, it can raise the proportion of persons from these groups who secure regular salaried or wage employment; that is, it can shift coefficient bias in favour of these groups. In order to see how effective jobs reservation was in raising the proportions of prime-age men from the SC and the ST in regular salaried or wage employment we consider what these proportions would have been if the attributes of these men had been evaluated using the coefficients of employment-deficit groups who did not benefit from jobs reservation: Muslims from the OBC; Muslims not from the OBC; and non-Muslims from the OBC.

If prime-age men from the SC had been treated as Muslims from the OBC, the proportion of men from the SC in regular salaried or wage employment would have fallen from the observed 19.4 per cent to 15.2 per cent. Under the same scenario (being treated as Muslims from the OBC), the proportion of non-Christian men from the ST in regular salaried or wage employment would have fallen from the observed 14.0 per cent to 11.1 per cent, and the proportion of Christian men from the ST in regular salaried or wage employment would have fallen from the observed 17.1 per cent to 13.6 per cent. So, as far as prime-age men from the SC and non-Christian men from the ST were concerned, jobs reservation raised their proportions in regular salaried or wage employment by at most 4 percentage points.

Conversely, if groups who are currently not offered jobs reservation for their members were to be brought under the jobs reservation umbrella then it is likely that their proportions in regular salaried and wage employment would rise: our calculations show that if Muslims from the OBC were to be offered jobs reservation then their proportion in regular salaried and wage employment would rise from 17.6 per cent to about 21 per cent. For non-OBC Muslims, the rise would be from 22.3 per cent to about 25 per cent. So, again, the benefit of jobs reservation to Muslims would be around 3–4 per cent.

An alternative way of raising the proportion of prime-age men from the SC and the ST in regular salaried or wage employment would have been to improve their employment-related attributes, but without reserving jobs for them. Our calculations suggest that:

1. If prime-age men from the SC had had the education standards of non-Muslim men from the OBC (shown in Table 3), their proportion in regular salaried or wage employment would have been 24.4 per cent instead of the observed 19.4 per cent: a rise of 5 points which could be ascribed to the rise in the education standard of men from the SC to the standard of non-Muslims from the OBC.
2. If prime-age men from the SC had had the education standards of non-OBC Muslims (shown in Table 3), their proportion in regular salaried or wage employment would have been 21.7 per cent instead of the observed 19.4 per cent. This rise of 2 points could be ascribed to the rise in the education standard of men from the SC to the standard of non-OBC Muslims.
3. If prime-age men from the SC had had the education standards of Muslim men from the OBC (shown in Table 3), their proportion in regular salaried or wage employment would have been 20.7 per cent instead of the observed 19.4 per cent — a rise of just one point.

CONCLUSIONS

The goal of jobs reservation in India has been to bring about an improvement in the welfare of those who are, and have been for a long time, economically and socially depressed. This article has attempted to quantify the effects of reserving jobs in India for persons from the SC and ST. Our conclusion is that jobs reservation succeeded in raising the representation of persons from the SC and ST in regular salaried and wage employment by about 5 percentage points. This figure was arrived at by comparing their current representation in such jobs with what it would have been had they been treated as OBC Muslims. Of course, it could be argued that, in the absence of jobs reservation, the representation of persons from the SC and the ST in regular salaried and wage employment might have been even lower than that of OBC Muslims and that, therefore, the estimated gain of 5 points underestimates the true gain from jobs reservation policies. We concede this point and regard jobs reservation as having delivered a gain of *at least* 5 points to persons from the SC and ST in the share of regular salaried and wage employment.

Our second conclusion is that the extension of jobs reservation policies to persons from the OBC is misconceived. As argued earlier, only 11 per cent of the employment deficit which non-Muslim OBC males faced, relative to forward caste Hindus, could be ascribed to coefficient bias ('discrimination'); on the other hand, between 33 and 37 per cent of the employment deficit faced by Muslims could be ascribed to discrimination. So, if the object of jobs reservation is to correct for discriminatory bias in the jobs market, and if reservation is to be extended beyond the SC and ST, then Muslims have a more compelling case than persons from the non-Muslim OBC.

Our last conclusion is that jobs reservation policies place little emphasis on improving the job-related attributes of persons from the SC and ST. Given the gulf in educational standards between forward caste Hindus and persons from the SC and ST, to which we have drawn attention, another prong of policy could and should focus on improving the educational standards of SC and ST persons. This needs to be more than reserving places in management, engineering and medical schools. Such reservation, in the context of the general backwardness of the SC and ST communities, is little more than a cosmetic exercise, confined to urban areas and assisting members of these groups who are least in need of help.

The root of the problem lies in the many dysfunctional primary and secondary schools in the villages and towns of India, characterized by an absence of learning materials, teachers and sometimes even classrooms. It is in these schools that learning is stifled for millions of children. Compounding the problem of dysfunctional schools is the poverty of parents, many of whom are from the SC and the ST, who cannot afford to keep children on at school; indeed, given the poor quality of schooling that their children receive, they see no reason for making sacrifices for their children's education.

Admittedly, tackling the problem at its roots will only yield results after a long delay. Nor does the emphasis on effective learning at school carry the glamour associated with being a putative graduate of the Indian Institute of Technology, the Indian Institute of Management, or the All-India Medical Institute. But before the vast mass of educationally and economically deprived children in India can meaningfully enter the portals of universities and institutes of higher education, they need to go to good schools.

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