

# Literacy in India and China

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*This paper examines recent census-based evidence on literacy achievements in China and India. China is found to be far ahead of India in the field of basic education. In particular, China is close to the elimination of illiteracy in the younger age groups, while India is nowhere near achieving that goal. Educational disparities follow similar patterns in both countries, but tend to be sharper in India. China's lead in basic education was established during the pre-reform period, based on a strong commitment to the widespread and equitable provision of schooling facilities at an early stage of development. This contrast in educational achievements in China and India is crucial in assessing their respective development experiences and reform programmes.*

## Introduction

COMPARISONS between India and China have often been made in the development literature. These comparisons can indeed be quite enlightening, given the similar challenges faced by the two countries in the late 1940s, and the different routes they have taken in addressing these challenges. Right now, economic growth tends to be the most common focus of comparison, and there is indeed much to learn from China's achievements in this field during the 1980s and 1990s. In assessing that success, however, it is important to take note of the social conditions that have formed the basis of rapid and participatory economic growth in China over that period. One of these social conditions, which is solidly rooted in the 'pre-reform' period, is widespread literacy.<sup>1</sup>

The importance of literacy, of course, is not exclusively or even primarily related to its role in promoting participatory economic growth. The diverse social and personal contributions of basic education also include the intrinsic value of activities that require literacy and related skills (e.g., reading newspapers), lower mortality and fertility rates, more informed participation in civil society and political activity, and so on. Even more important, perhaps, is the role of basic education as a tool of empowerment and redistribution. In India, the persistence of widespread illiteracy among disadvantaged groups tends to reinforce diverse kinds of social inequality (e.g., relating to class, caste and gender), and the expansion of basic education must certainly be seen as an essential requirement of more rapid elimination of these inequalities, and of positive social change in general.

Against this background, a comparison of India's and China's experiences in the field of basic education may be of some interest. Indeed, the expansion of basic education at an early stage is an essential

feature of China's development experience, just as the persistence of widespread illiteracy is one of India's most serious social failures. In this paper, we attempt to bring out the main features of this contrast, and comment briefly on its causes and implications.

## Methodological Issues

### 1.1. SOURCES AND DEFINITIONS

Recent censuses in India and China provide reasonably reliable sources of information on literacy rates.<sup>2</sup> India conducted censuses in 1981 and 1991, and China in 1982 and 1990. For convenience, we shall understand the reference year '1981-82' to mean 1981 for India and 1982 for China, and '1990-91' to mean 1991 for India and 1990 for China.

According to the official instructions to census investigators in India, a person is to be considered literate if she or he "can both read and write with understanding in any language".<sup>3</sup> In cases where an investigator is in doubt about the reading or writing abilities of a particular person, the investigator is supposed to ascertain her abilities on the basis of simple practical tests: "The test that was applied for reading was the ability to read any portion of the printed matter in the enumerator's instruction booklet (provided the person was familiar with the language used in the booklet) and the test for writing was the ability to write a simple letter". Discussions with census investigators, however, suggest that actual tests of this kind are rarely performed.<sup>4</sup> It appears that, in practice, the respondent's self-reported literacy status is usually accepted by the investigator.

The absence of objective literacy test in census investigations raises the possibility of two different kinds of reporting biases. First, there may be a systematic tendency

on the part of *respondents* to overstate or understate their literacy status. Second, *investigators* may have their own reasons to overstate or understate. Census investigations, for instance, are often conducted by local school teachers, who may be inclined to exaggerate literacy achievements in their own locality.<sup>5</sup>

It is unlikely, however, that these possible biases lead to major distortions in census-based literacy rates for India. Literacy rates based on census data are highly consistent over time, and they are also broadly consistent with independent information collected by the National Sample Survey, based on similar literacy criteria.<sup>6</sup>

As far as China is concerned, census publications distinguish between different literacy levels: 'literate' (knowledge of more than 1,500 characters), 'semi-literate' (500 to 1,500 characters) and 'illiterate' (less than 500 characters).<sup>7</sup> In practice, census investigators are expected to count a person as literate if she or he is able to read a newspaper and to write a simple letter.<sup>8</sup> This criterion of literacy is quite similar to that used in Indian censuses. Following what appears to be standard practice in official Chinese publications, the literacy figures reported in this paper refer exclusively to 'full' literacy (1,500 characters or more), with the 'semi-literate' and 'illiterate' categories being amalgamated.

As with the Indian censuses, the recent Chinese censuses appear to provide a reasonably reliable source of information on literacy achievements. The general quality and consistency of these censuses have been extensively scrutinised by demographers, and there is, to our knowledge, no evidence of these results being flawed in a major way.<sup>9</sup> The literacy rates derived from the 1982 and 1990 censuses for different provinces and population groups are themselves highly consistent. While it is important to submit these figures to further

FIGURE 1A: ADULT LITERACY RATES IN INDIA AND CHINA (1981-82), FOR DIFFERENT POPULATION GROUPS

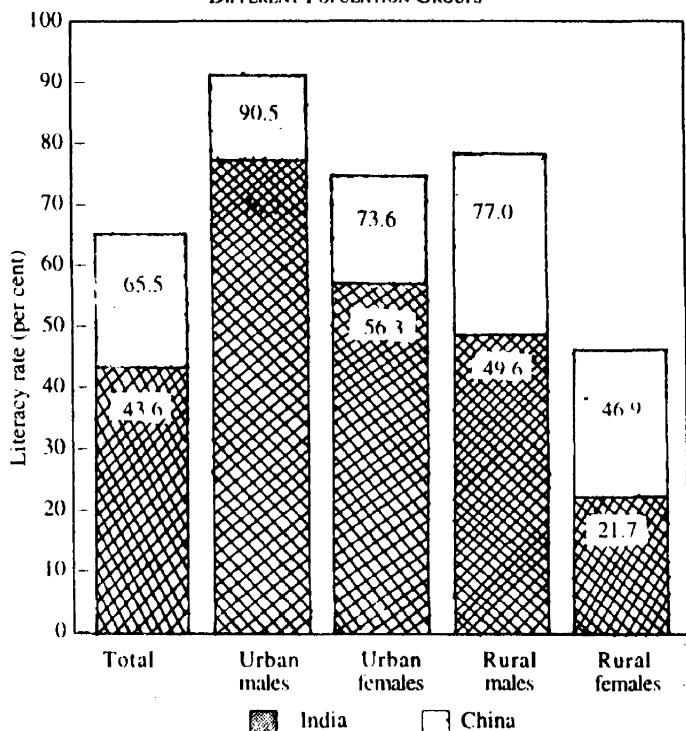
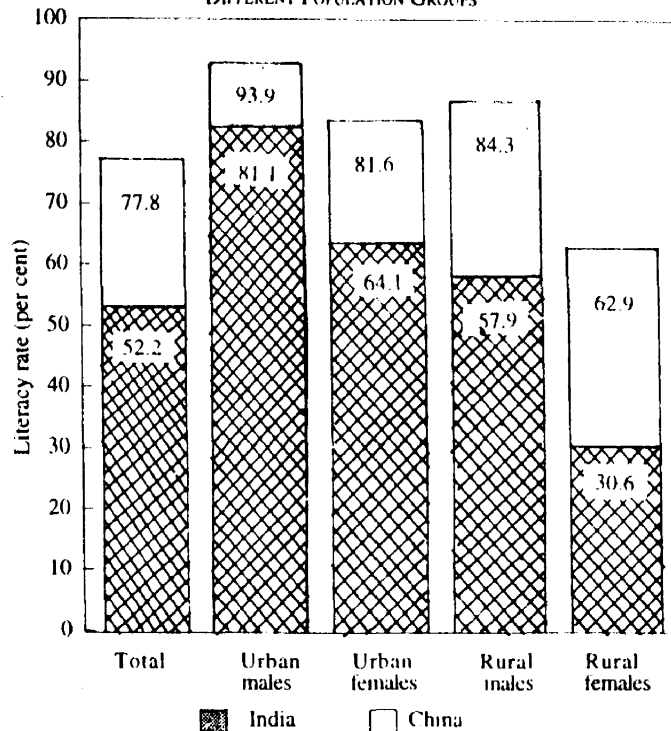


FIGURE 1B: ADULT LITERACY RATES IN INDIA AND CHINA (1990-91), FOR DIFFERENT POPULATION GROUPS



Note: The Indian literacy rates apply to persons aged 7 and above, and the Chinese literacy rates apply to persons aged 15 and above. As discussed in the text, 7+ literacy rates in India are usually a little higher than the corresponding 15+ literacy rates.

Sources: CASS (1987) (based on census data) and Government of India (1987)

Note: The Indian and Chinese literacy rates apply to the 7+ and 15+ age groups respectively (see text for discussion)

Sources: SSB (1993) and Tyagi (1993) (based on census data)

scrutiny, there are no grounds to reject them as things stand.

#### 1.2. COMPARABILITY ISSUES

The comparison of census-based information on literacy rates in India and China raises several methodological issues.

First, in order to compare like with like, it is important to focus on the same age groups for both countries, as far as possible. The 'adult literacy rate' usually refers to the literacy rate in the age group of 15 years and above.<sup>10</sup> Information on literacy rates for that age group is available for 1982 and 1990 in the case of China, and for 1981 in the case of India. Unfortunately, literacy rates for the 15+ age group from the 1991 census in India have not been released at the time of writing. For 1991, literacy rates are currently available only for the population as a whole ('crude literacy rate'), and for the age group of seven years and above. We will be using the latter, in this paper, for comparison with the 15+ literacy rates derived from China's 1990 census. Similarly, we will be using the cut-off of seven years and above for Indian literacy rates in 1981.

In this connection, we should mention that 7+ literacy rates in India are usually a little higher than 15+ literacy rates (this is because, as one might expect, the literacy rate in the 7-14 age group tends to be higher than the

literacy rate among persons aged 15 and above). For instance, in 1981, the 7+ literacy in India as a whole was 43.6 per cent, compared with 40.8 per cent for the 15+ literacy rate. The same pattern can be observed in all Indian states (for 1981), with the 7+ literacy rate typically 2 to 4 percentage points above the 15+ literacy rate. Having said this, the 7+ and 15+ literacy rates are sufficiently close to each other in all Indian states (see Figure A1 and also Tables A1 and A2) to ensure that nothing will be lost in this paper by approximating the latter with the former.

Second, in interpreting literacy rates for the population as a whole, or even for the

TABLE 2: LITERACY RATES IN INDIA AND CHINA IN DIFFERENT CENSUS YEARS

	China, 6+	India, 5+	India, 7+
1961/64*	43.2	28.3	-
1981/82	68.1 (2.6)	41.4 (1.9)	43.7
1990-91	79.4 (1.9)	-	52.2 (1.7)

Notes: \* The reference year is 1961 for India and 1964 for China.

The figures in brackets indicate the annual growth rate of literacy since the preceding reported census

Sources: (i) China - State Statistical Bureau (1993b), Table 3.4, based on census data, (ii) India - Government of India (1987), Table C.2, and Tyagi (1993), Table 9, based on census data.

TABLE 1: LITERACY IN INDIA, CHINA AND KERALA

	Literacy Rates, 1981-82				Literacy Rates, 1990-91			
	Adults <sup>a</sup>		Adolescents (Age 15-19)		Adults <sup>a</sup>		Adolescents <sup>b</sup> (Age 15-19)	
	Male	Female	Male	Female	Male	Female	Male	Female
India	56	30	66	43	64	39	74	52
China	79	51	96	85	87	68	97	92
Kerala	88	76	95	92	94	86	98	98

Notes: <sup>a</sup> Age 15+ for China, 7+ for India and Kerala (Indian Census data for the 15+ age group in 1991 have not been published at the time of writing). As mentioned in the text, 7+ literacy rates in India are usually a little higher than 15+ literacy rates.

<sup>b</sup> The reference year for India and Kerala is 1987-88; the reference age group for Kerala is 10-14.

Sources: The Indian figures are compiled from Government of India (1987), Table C-2, Tyagi (1993), Table 10, and Sengupta (1991), Statements 3.5, 3.6 and 4.1. The Chinese figures are from State Statistical Bureau (1985), Table 49, and State Statistical Bureau (1993a), Table 5-12. All are based on census data except for the 1987-88 age-specific rates for India and Kerala which are based on National Sample Survey data.

15+ age group, it should be borne in mind that the Indian and Chinese populations have different age structures. For instance, old people represent a slightly larger share of the population in China than in India, and this has the effect of driving down the crude literacy rates (or adult literacy rates) in China for a given profile of age-specific literacy rates. This particular feature, of course, has to be considered along with other contrasts between the Indian and Chinese population structures (e.g. due to differences in fertility rates, or to the demographic effects of the 1958-61 famine in China).

Taking the whole age structure into account, it seems that age-structure effects play a negligible role in the particular contrasts that will be considered in this paper, and can be ignored for our purposes. Consider, for instance, the adult literacy rate (age 15+) in 1980-81. When 1981 age-specific literacy rates for India are combined with the age structure of the Chinese population at that time, they give an average literacy rate of 41.1 per cent for the 15+ age group; this is very close to India's actual adult literacy rate of 40.8 per cent in 1981 (obtained by combining the same age-specific literacy rates with the age structure of the Indian population). Similarly, the Chinese age-specific literacy rates give an adult literacy rate of 65.9 per cent when they are combined with the age structure of the Indian population, again very close to the actual 15+ literacy rate of 65.8 per cent in 1980 (obtained by combining these age-specific literacy rates with the age structure of the Chinese population). In other words, differences in age structure account for a very small part of the observed contrast in adult literacy rates in India and China.

Third, it can be argued that literacy is a more demanding achievement in China than in India. The Indian alphabets typically consist of a few dozen letters (e.g. the most widely-used among Indian scripts, 'devnagiri', is based on an alphabet of about 60 letters), which are relatively easy to assimilate compared with the thousands of characters required for literacy in Chinese languages. The number of characters or letters, of course, is not a definitive criterion of comparison, since literacy in Chinese only requires character recognition while alphabet-based reading involves the additional skill of combining letters into a recognisable word or idea. But the fact remains that literacy skills in Chinese typically take several years to acquire (and can only be retained with regular practice), while literacy in Indian languages can often be achieved within a few months.

Taken together, these different considerations suggest that China's lead over India in the field of basic education is actually a little larger than the literacy figures presented

in this paper suggest. While age-structure effects can be ignored without much loss of precision, the use of an age cut-off of seven years for India artificially raises the Indian literacy figures by a few percentage points. The fact that literacy is a more demanding educational achievement in China than in India also has the effect of making India look a little closer to China than it really is, when their comparative achievements are assessed on the basis of literacy rates. Even then, however, India does look remarkably backward in comparison with China, as will be seen in the next section.

## II

### Literacy Achievements Compared

#### III. THE BASIC FACTS

China is a far more literate nation than India. In 1990-91, almost half of the adult population in India was illiterate, compared with only 22 per cent in China. Even more significantly perhaps, by that time China had nearly succeeded in achieving universal literacy in the younger age groups, with illiteracy being overwhelmingly concentrated among the older age groups. In India, by contrast, there is still a massive problem of illiteracy in the younger age groups (Table 1).

Another serious aspect of India's failure in the field of basic education is the highly uneven distribution of educational achievements. Illiteracy, in particular, tends to be concentrated among disadvantaged social groups. Literacy rates tend to be much lower among women than among men, in rural than in urban areas, and among scheduled castes and tribes than in the population as a whole. There are, also, striking regional disparities in literacy rates, with Kerala being in the same league as the most advanced countries of the developing world while states such as Rajasthan or Bihar have literacy rates that are more typical of the least developed countries of sub-Saharan Africa. These diverse inequalities,

combined with a low average literacy rate, account for extremely low levels of education among the most disadvantaged sections of the population (Section 11.4).

Educational disparities between different regions and social groups can also be observed in China, but these are generally less pronounced than in the case of India. As can be seen from Figures 1a and 1b, the difference in literacy rates between India and China is particularly large for disadvantaged groups (e.g. rural women), reflecting the greater intensity of educational inequalities in India. The rural-urban gap, in particular, is considerably smaller in China than in India. China appears to have been far more successful than India in promoting basic education in rural areas, and this is consistent with the general emphasis that the Chinese leadership has placed on economic and social transformation in the countryside (in contrast with the pronounced 'urban bias' of public policy in India). Similarly, educational policy in China has given overwhelming priority to the expansion of primary education, and this contrasts with the elitist bias of India's educational system, which combines a resilient neglect of primary education with enormous public investments in higher education. Educational achievements are not only much lower in India than in China, they are also much less equitably distributed.

One outstanding exception to the general

TABLE 4: LITERACY RATES IN SCHEDULED CASEES AND SCHEDULED TRIBES IN INDIA (1991)

	Persons	Male	Female
All-India	52	64	39
SCs	37	50	24
STs	30	41	18
Excluding SCs and STs	58	70	45

Note: The literacy rates apply to persons aged 7 and above.

Source: Government of India (1992), pp 210-11, and Government of India (1993), pp 18-19 and 44-45.

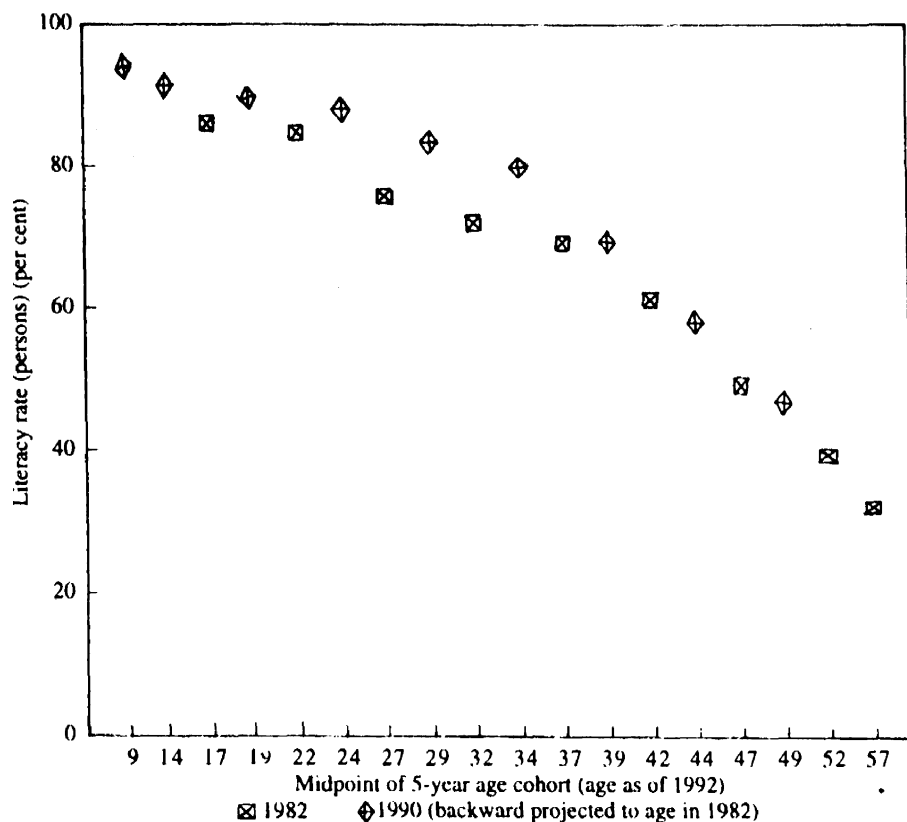
TABLE 3: AGE-SPECIFIC LITERACY RATES IN CHINA, 1982 AND 1990

Age Group	1982				1990			
	P	M	F	F/M*	P	M	F	F/M*
15+	66	79	51	65	78	87	68	78
15-19	91	96	85	89	95	97	92	95
20-24	86	94	77	82	94	97	91	94
25-29	78	91	64	70	93	97	89	92
30-34	74	87	60	69	88	95	80	84
35-39	72	86	57	66	83	92	73	79
40-44	61	78	43	55	80	90	69	77
45-49	48	68	26	38	72	85	58	68
50-54	38	59	15	25	60	77	41	53
55-59	32	53	10	19	47	67	25	37
60+	21	39	5	13	24	44	7	16

\* The ratio of the female (F) to male (M) literacy rate

Source: State Statistical Bureau (1985), Table 49, and State Statistical Bureau (1993a), Table 5-12

FIGURE 2: COMPARISON OF 1982 AGE-SPECIFIC LITERACY RATES (ALL-CHINA) WITH ESTIMATES BASED ON 'BACKWARD PROJECTION' FROM THE 1990 CENSUS



Note: The crossed squares indicate the actual 1982 literacy rates in different age groups (the position of a crossed square in the horizontal scale indicates the mid-point of the relevant age group). The crossed diamonds indicate estimated literacy rates based on 'backward projections' from the 1990 Census see text for further discussion of the projection method).

Source: SSB (1985) and SSB (1992).

pattern of educational backwardness in India is the state of Kerala. In fact, as will be shown in Section II.3, Kerala is not only far ahead of all other Indian states in terms of literacy achievements, it is also ahead of almost all the Chinese provinces (and in some respects, e.g., adult female literacy, ahead of all Chinese provinces). Aside from being a momentous success story in itself, Kerala's literacy record is also a useful benchmark against which to assess both the achievement of China (where educational expansion began much later than in Kerala), and the under-achievement of the rest of India. In the following elaboration of the basic issues raised in this section, this benchmark will be used to inform and supplement the broader cross-country comparisons.

#### 11.2. HISTORICAL PERSPECTIVE

China's 1982 census appears to be the earliest available source of comprehensive information on the country's literacy status, with published figures available by gender, age, province, and residence (rural/urban). Two earlier censuses have been conducted in 1953 and 1964. The 1953 Census, however, apparently failed to produce reliable information on education or literacy." The

1964 Census indicates that the national literacy rate for the 6+ age group was 43 per cent in that year (Table 2).

The historical record of literacy in India is far more complete, with fairly detailed and reliable literacy figures being available from decennial censuses from the late 19th century onwards. In comparison to China's 1964

figure of 43 per cent for literacy in the 6+ age group, the all-India literacy for the 5+ age group in 1961 was 28 per cent. Thus, China already had a substantial lead over India in the early 1960s.

The rate of progress of literacy rates in India and China before and after 1981-82 may be worth mentioning. The annual percentage increase in literacy rates was 2.6 per cent in China during 1964-82, and 1.9 per cent during 1982-90; the corresponding figures for India were 1.9 per cent in 1961-81 and 1.7 per cent in 1981-91 (Table 2). These figures have to be interpreted with caution, since the growth rate of literacy is only one way of measuring the progress of literacy over time, and alternative measures of literacy expansion can lead to different rankings of the rate of progress in different periods and regions.<sup>12</sup> One reasonably robust observation, however, is that the pre-1982 period was one of particularly rapid expansion of literacy in China. Educational transformation in China, in other words, appears to have been particularly rapid in the period preceding the economic reforms initiated in the late 1970s.

An alternative, indirect way of assessing and comparing the progress of literacy in India and China prior to 1981-82 is to look at age-specific literacy rates in that year. To illustrate, the literacy rate in the 35-44 age group in 1981-82 can be taken as an approximation of, say, the literacy rate in the 25-34 age group 10 years earlier, or of the literacy rate in the 15-24 age group in 1961-62. Obviously, this 'backward projection' method can only be applied to the adult age groups, for which the implicit assumption of static literacy rates for given cohorts is not implausible. Even for adults, the backward projection method tends to overestimate literacy rates in earlier years.

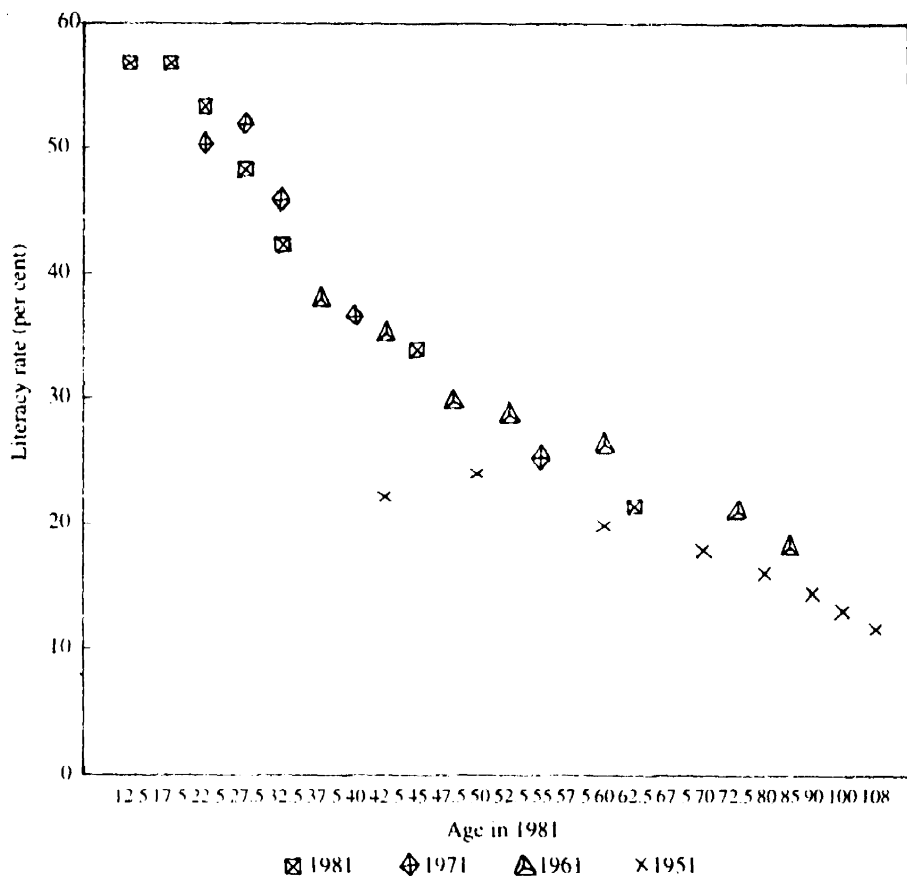
TABLE A1: LITERACY RATES IN INDIA, 1981 - AGE 7+

States	U/R Combined, 7+			Rural, 7+			Urban, 7+		
	P	M	F	P	M	F	P	M	F
Total	43.6	56.4	29.8	36.0	49.6	21.7	67.2	76.7	56.3
Andhra Pradesh	35.7	46.8	24.2	27.9	38.7	16.8	61.0	72.6	48.7
Bihar	32.1	46.6	16.5	27.7	42.4	12.4	61.8	73.2	47.5
Gujarat	52.2	65.1	38.5	43.6	57.8	28.8	71.0	80.7	60.2
Haryana	43.9	58.5	26.9	37.3	53.3	18.8	66.8	76.1	55.8
Karnataka	46.2	58.7	33.2	37.6	51.1	23.8	66.9	76.5	56.4
Kerala	81.6	87.7	75.6	80.3	86.7	74.2	86.9	92.0	82.0
Madhya Pradesh	36.6	48.4	24.0	29.3	40.8	17.3	64.6	76.4	50.8
Maharashtra	55.8	69.7	41.0	45.7	61.7	29.5	74.3	82.9	63.9
Orissa	41.0	56.5	25.1	37.8	53.5	22.0	64.8	76.4	50.9
Punjab	48.2	55.6	39.7	41.7	49.6	32.7	65.0	70.8	58.1
Rajasthan	30.1	44.8	14.0	22.5	37.0	6.8	58.0	72.3	41.5
Tamil Nadu	54.4	68.0	40.4	45.0	60.1	29.8	73.3	83.8	62.2
Uttar Pradesh	33.4	47.4	17.2	28.5	43.4	11.7	54.9	64.8	42.7
West Bengal	48.6	59.9	36.1	40.2	52.8	26.8	70.7	77.2	62.5

Note: Tyagi (1993) and Government of India (1992) give somewhat different figures for female literacy in Madhya Pradesh (19.0 as opposed to 24.0); the reason for this discrepancy between these recent publications and the original source (Government of India, 1987) is unclear.

Source: Government of India (1987), Tables C-2 and C-2A.

FIGURE 3: COMPARISON OF 1981 AGE-SPECIFIC LITERACY RATES (ALL-INDIA) WITH ESTIMATES BASED ON 'PROJECTION' FROM OTHER CENSUSES



Note: The crossed squares indicate the actual 1981 literacy rates in different age groups (the position of a crossed square in the horizontal scale indicates the midpoint of the relevant age group). The other symbols indicate estimated literacy rates based on 'projections' from other censuses (see text for further discussion of the projection method).

Source: Census data (Government of India, 1954, 1964, 1976 and 1987).

for two reasons. First, mortality rates are typically higher among illiterates than among literates, so that the literacy rate in a particular cohort can be expected to increase over time even if the literacy status of the surviving individuals remains unchanged. Second, the literacy rate in a particular cohort can increase over time due to adult literacy programmes.

This over estimation issue can be illustrated by comparing the actual 1982 literacy rates in particular age groups in China with the corresponding estimates obtained by 'backward projection' from the 1990 census. The results are presented in Figure 2 (see also Table 3). As this figure indicates, the predicted and actual literacy rates are remarkably close to each other, suggesting that backward-projected estimates are reasonably accurate, at least over a relatively short period. Interestingly, the largest differences between actual and projected estimates are found for women aged 25-34 in 1982, possibly reflecting the effect of adult literacy programmes targeted at that age group.

The extent of over estimation over longer periods can be scrutinised using Indian data for the 1951, 1961, 1971 and 1981 Censuses (as stated earlier, age-specific literacy rates

for 1991 are not available at the time of writing). Figure 3, which is similar to Figure 2, compares actual literacy rates for different age groups in India in different census years with projections from other censuses. Here again, it can be seen that the projected figures are reasonably accurate, even when the projections span a relatively long period."

It should be added that, if our interest is not in absolute literacy rates in earlier periods, but in comparing literacy rates in India and China at different points of time, the over estimation problem is not necessarily very serious, as long as the extent of overestimation is quite similar in both countries. In short, there is no serious reason to dismiss comparisons of literacy rates in India and China in, say, 1951 based on backward projection from the 1981-82 Censuses.

In Figure 4, we present age-specific literacy rates in India, China and Kerala in 1981-82. If the backward projection method is valid, this figure allows us to trace the evolution of literacy over time in these three regions. The emerging pattern is quite startling. The estimated literacy rates for the 30+ age group in 1951-52 (i.e., the actual literacy rates for the 60+ age group in 1981-82) are almost exactly the same for India and China, suggesting that the adult literacy situation in both countries was very similar in the late 1940s. At that time, Kerala was way ahead of both India and China. As early as 1961-62, however, China had nearly caught up with Kerala in the younger age groups; for instance, the estimated literacy rates for the 10-14 age group in 1961-62 (i.e., the actual literacy rates for the 30-34 age group in 1981-82) are almost as high in China as in Kerala. By 1981-82, there was virtually no difference between China and Kerala for the younger age groups, while India was left far behind.

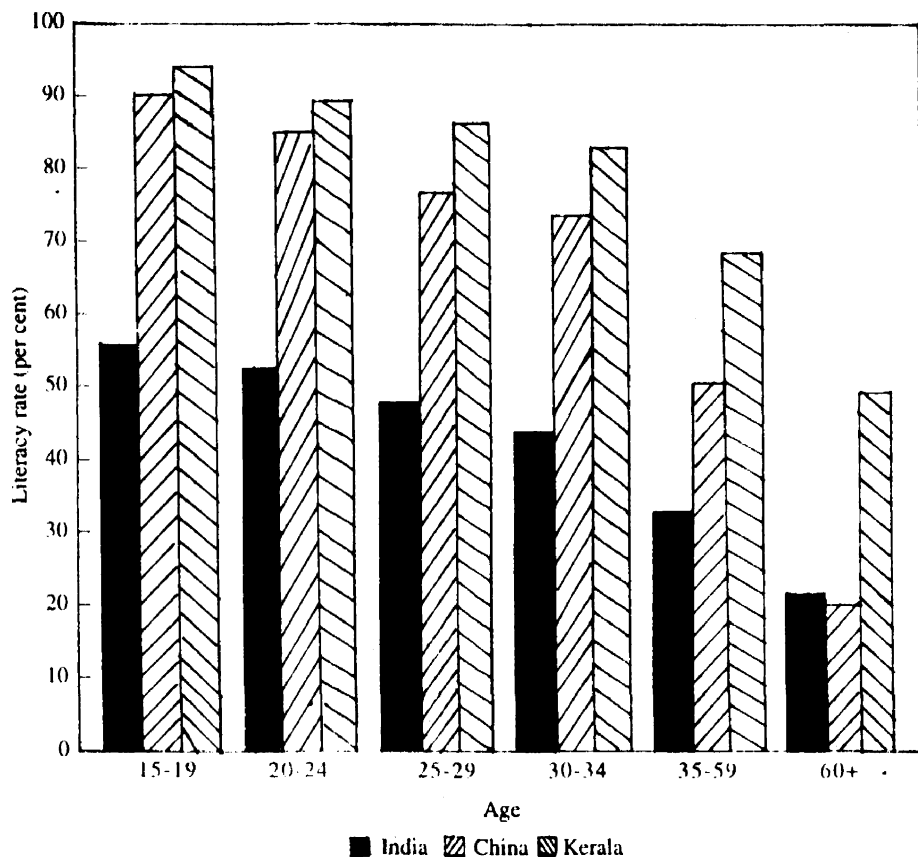
A more detailed breakdown of 1982 literacy rates in China by gender and age group is presented in Table 3.<sup>34</sup> By backward projection, this table gives a more detailed picture of the evolution of literacy in China over time. The post-Liberation take-off is evident, for instance, in the large difference in literacy rates between the 40-44 age group (consisting of persons who would have been aged 10-14 in 1952) and older age groups.

TABLE A2: LITERACY RATES IN INDIA, 1981 - AGE 15+

States	U/R Combined, 15+			Rural, 15+			Urban, 15+		
	P	M	F	P	M	F	P	M	F
Total	40.8	54.9	25.7	32.8	47.4	17.6	65.1	76.3	51.9
Andhra Pradesh	32.5	44.5	20.2	24.6	35.9	13.2	57.8	71.5	43.2
Bihar	29.4	45.0	13.2	25.0	40.4	9.4	59.1	72.6	41.9
Gujarat	48.3	62.7	33.1	38.6	54.1	22.8	68.4	79.9	55.6
Haryana	39.2	54.4	21.5	31.5	47.9	12.7	64.0	75.0	50.6
Karnataka	43.1	56.9	28.4	33.9	48.5	18.8	64.5	76.0	51.7
Kerala	78.1	85.9	70.8	76.6	84.7	69.0	84.5	90.9	78.4
Madhya Pradesh	35.6	47.7	22.7	28.4	39.5	16.9	62.4	76.4	45.8
Maharashtra	51.8	67.7	34.7	40.3	58.5	22.3	71.7	82.0	58.8
Orissa	38.7	56.0	21.0	35.4	52.9	18.0	62.6	76.2	45.6
Punjab	42.6	51.1	32.9	35.1	43.9	25.1	61.9	69.2	53.2
Rajasthan	28.2	43.0	12.0	20.2	34.2	5.2	56.5	72.5	37.5
Tamil Nadu	50.4	65.9	34.6	40.3	56.9	23.5	70.6	83.3	57.3
Uttar Pradesh	30.8	45.6	14.1	25.5	40.9	8.7	53.6	65.3	39.1
West Bengal	48.1	61.2	33.2	39.0	53.9	23.0	69.8	77.2	60.1

Source: Government of India (1987). Tables C-2 and C-2A

FIGURE 4: AGE-SPECIFIC LITERACY RATES IN INDIA, CHINA AND KERALA (1981-82)



Source: Government of India (1987) and SSB (1985).

Among women, in particular, the 1982 literacy rate in the 40-44 age group (42.6 per cent) was three times as high as the literacy rate among women who were only 10 years older (14.8 per cent for the 50-54 age group).

In short, and subject to the qualifications attached to the backward-projection method, the following observations emerge from the preceding analysis: (1) India and China had very similar adult literacy rates in the late 1940s, while Kerala was far ahead at that time. (2) China's literacy take-off took place during the immediate post-Liberation period, with a particularly impressive leap for the younger age groups, (3) by 1981-82, China had caught up with Kerala in the younger age groups, while India was left far behind.

### 11.3 LITERACY RATES: 1981-82 AND 1990-91

The high absolute levels of literacy in China in 1982 are also worth underlining. For the 15-19 age group, literacy rates in that year were already as high as 96 per cent for males and 85 per cent for females (Table 1). Although these figures reveal the persistence of a substantial gender gap, they also indicate that China was rapidly moving, at that time, towards universal literacy in the younger age group. As mentioned earlier, this feature of the Chinese experience sharply contrasts with the educational situation in India, where

the eradication of illiteracy remains an elusive goal to this day, even for the younger age groups.

The nature of the India-China contrast in that respect, as early as 1981-82, can be further evaluated from Figure 5, where we present 15-19 literacy rates in that year for individual Chinese provinces and Indian states (the former are identified with lower-case letters, the latter in upper case). As this figure shows, it is not just that China was ahead of India at that time, in terms of literacy rates in the younger age groups, but also that, with two important qualifications.

no Indian state was clearly ahead of any Chinese province in that respect. Even the more educationally progressive states of India, such as Maharashtra and Tamil Nadu, had lower adolescent male literacy rates than the most backward Chinese provinces, and were only marginally ahead of a few Chinese provinces in terms of adolescent female literacy.

The two qualifications concern Kerala and Tibet. We have already noted Kerala's outstanding educational record. In Tibet, the adolescent male literacy rate in 1981-82 was not only much lower than the Chinese average, but also lower than the corresponding figure for any Indian state; the same statement applies to the adolescent female literacy rate, although, significantly enough, the states of Uttar Pradesh, Madhya Pradesh, Rajasthan and Bihar did no better than Tibet in that respect. The persistence of endemic illiteracy in Tibet, even in the younger age groups, stands in sharp contrast with the rapid educational advances that have occurred in all the other Chinese provinces. This localised failure has little effect on the overall Chinese literacy figures, since the population of Tibet is just over two million (1990 census figure), but it is of some political significance. The low level and slow progress of educational achievements in Tibet suggests some lack of political commitment of the Chinese leadership to the development of that region, and illustrates the exceptional dependence of social progress in China on the initiative of the state. If the leadership decides to ignore, or fails to recognise a particular problem, there is little scope for public pressure to challenge that inertia."

Figures 6A and 6B present adult male and female literacy rates in India and China in 1981-82 and 1990-91, respectively. Both figures follow much the same pattern as Figure 5, with most Chinese provinces being well ahead of most Indian states. Comparing

TABLE A3. LITERACY RATES IN INDIA, 1981 AGE 7+

States	U/R Combined, 7+			Rural, 7+			Urban, 7+		
	P	M	F	P	M	F	P	M	F
Total	52.2	64.1	39.3	44.7	57.9	30.6	73.1	81.1	64.1
Andhra Pradesh	44.1	55.1	32.7	35.7	47.3	23.9	66.4	75.9	56.4
Bihar	38.5	52.5	22.9	33.8	48.3	18.0	67.9	77.7	55.9
Gujarat	61.3	73.1	48.6	53.1	66.8	38.7	76.5	84.6	67.7
Haryana	55.9	69.1	40.5	49.9	64.8	32.5	73.7	82.0	64.1
Karnataka	56.0	67.3	44.3	47.7	60.3	34.8	74.2	82.0	65.7
Kerala	89.8	93.6	86.2	88.9	92.9	85.1	92.3	95.6	89.1
Madhya Pradesh	44.2	58.4	28.9	35.9	51.0	19.7	70.8	81.3	58.9
Maharashtra	64.9	76.6	52.3	55.5	69.7	41.0	79.2	86.4	70.9
Orissa	49.1	63.1	34.7	45.5	60.0	30.8	72.0	81.2	61.2
Punjab	58.5	65.7	50.4	52.8	60.7	43.9	72.1	77.3	66.1
Rajasthan	38.6	55.0	20.4	30.4	47.6	11.6	65.3	78.5	50.2
Tamil Nadu	62.7	73.8	51.3	54.6	67.2	41.8	78.0	86.1	69.6
Uttar Pradesh	41.6	55.7	25.3	36.7	52.1	19.0	61.0	70.0	50.4
West Bengal	57.7	67.8	46.6	50.5	62.1	38.1	75.3	81.2	68.3

Source: Government of India (1992), Table 6.

the two figures, we find that literacy rates have improved in both countries during the 1980s (and indeed in all the individual states and provinces, except in the case of rural female literacy in Tibet), with little change in the relative positions.

While the improvement of literacy in China during the 1980s (bringing the country even closer to universal literacy in the younger age groups - see Table I) is in line with earlier trends, there is some evidence of a significant change in the basis of educational progress in China before and after the economic reforms initiated in the late 1970s.<sup>16</sup> The pre-reform period was a phase of low income levels and slow economic growth, and the transformation of educational levels during that period was less a reflection of growing affluence than a direct result of the firm commitment of the Chinese leadership to the widespread and equitable public provision of basic education. During the post-reform period, it is the rapid growth of private incomes that has formed the main basis of further educational improvement, and there has been less success in the further expansion of public schooling facilities, especially in the slow-growing rural areas. One important reason for the latter development is the eroded financial basis of local public services in the poorer areas, due to the combination of (1) fiscal decentralisation (with local governments being expected to raise their own financial resources), and (2) the transition to the 'household responsibility system' (under which the products of economic activity accrue to households in the first instance, rather than to the collective).

This is not to deny the achievements of the post-reform period in China. The remarkable acceleration of economic growth during that period, and the participatory nature of the growth process, have led to many social achievements of major importance, including a massive reduction in poverty (as measured by conventional income-based measures such as the head-count ratio). In education, health and related fields, however, it is likely that even more could have been achieved had rapid economic growth been combined with a further expansion of public provisioning, rather than substituting for it.<sup>17</sup>

#### 11.4 EDUCATIONAL DISPARITIES

A common feature of the literacy situations in China and India is the existence of large disparities in literacy achievements between different sections of population. In both countries, for instance, there are marked differences in educational levels based on gender and residence (rural/urban). The general patterns of educational disparities (including a strong gender bias) are broadly similar in both countries. As noted earlier.

TABLE A4: LITERACY RATES IN CHINA, 1982 - AGE 15+

States	U/R Combined, 15+			Rural, 15+			Urban, 15+		
	P	M	F	P	M	F	P	M	F
Total	65.5	79.2	51.1	62.3	77.0	46.9	82.4	90.5	73.6
Beijing	84.0	91.7	76.2	75.5	84.8	66.3	89.0	95.7	82.0
Tianjin	81.6	91.1	71.9	71.4	84.3	58.5	86.3	94.1	78.1
Hebei	67.9	80.9	54.3	65.3	79.1	51.3	85.7	92.8	77.3
Shanxi	73.2	82.5	63.1	70.8	80.6	60.3	84.0	90.5	76.3
Inner Mongolia	66.0	76.3	54.6	62.3	73.6	49.7	82.8	89.2	76.1
Liaoning	81.9	89.1	74.5	78.4	86.3	70.2	88.3	94.2	82.2
Jilin	76.0	83.5	68.0	73.1	81.3	64.5	84.0	89.9	77.9
Heilongjiang	75.6	84.2	66.5	72.0	81.6	61.8	84.5	90.9	77.9
Shanghai	82.5	92.3	72.9	74.9	87.0	63.7	88.4	96.2	80.5
Jiangsu	62.2	78.8	45.2	59.3	76.9	41.4	83.1	91.9	73.5
Zhejiang	66.1	79.2	52.1	65.0	78.4	50.6	71.0	82.5	58.5
Anhui	50.2	67.5	31.6	47.1	65.3	27.8	75.1	85.2	63.4
Fujian	60.4	80.1	39.6	57.6	78.5	35.5	76.9	89.7	63.4
Jiangxi	65.1	81.4	47.7	62.3	79.8	43.8	81.9	91.0	72.0
Shandong	60.1	76.3	43.8	57.9	74.7	41.0	75.9	87.6	63.7
Henan	59.6	74.3	44.6	57.1	72.4	41.5	81.2	89.4	71.9
Hubei	65.7	80.4	50.3	62.8	78.4	46.5	85.1	93.2	76.2
Hunan	73.5	85.4	60.7	72.0	84.4	58.6	86.6	93.7	78.5
Guangdong	75.2	90.1	59.8	73.5	89.3	57.4	85.7	95.1	75.7
Guangxi	72.9	86.8	58.1	71.8	86.1	56.6	86.0	94.9	76.1
Sichuan	64.9	78.3	50.5	63.0	77.2	47.9	79.9	87.5	71.6
Guizhou	49.4	68.6	29.4	47.3	67.6	26.2	61.3	73.9	47.4
Yunnan	48.2	63.6	32.5	45.6	61.6	29.4	76.1	84.2	66.8
Tibet	26.1	38.4	14.4	23.1	35.3	11.6	70.9	79.9	60.2
Shaanxi	64.0	75.8	51.4	60.4	73.0	47.1	83.7	90.8	75.7
Gansu	49.1	65.3	31.5	44.6	61.8	26.2	83.4	90.5	74.8
Qinghai	50.9	66.8	34.0	42.6	60.3	23.9	84.1	91.9	75.4
Ningxia	54.1	68.6	38.5	47.8	63.8	30.8	79.9	87.3	71.4
Xinjiang	66.4	72.4	60.1	62.5	68.5	56.1	80.5	86.4	74.2

Note: The 1982 Census distinguishes between two types of residential areas: Cities and counties. The 'urban' and 'rural' literacy rates above follow this division.

Source: Chinese Academy of Social Sciences (1987), pp 318-404, based on census data.

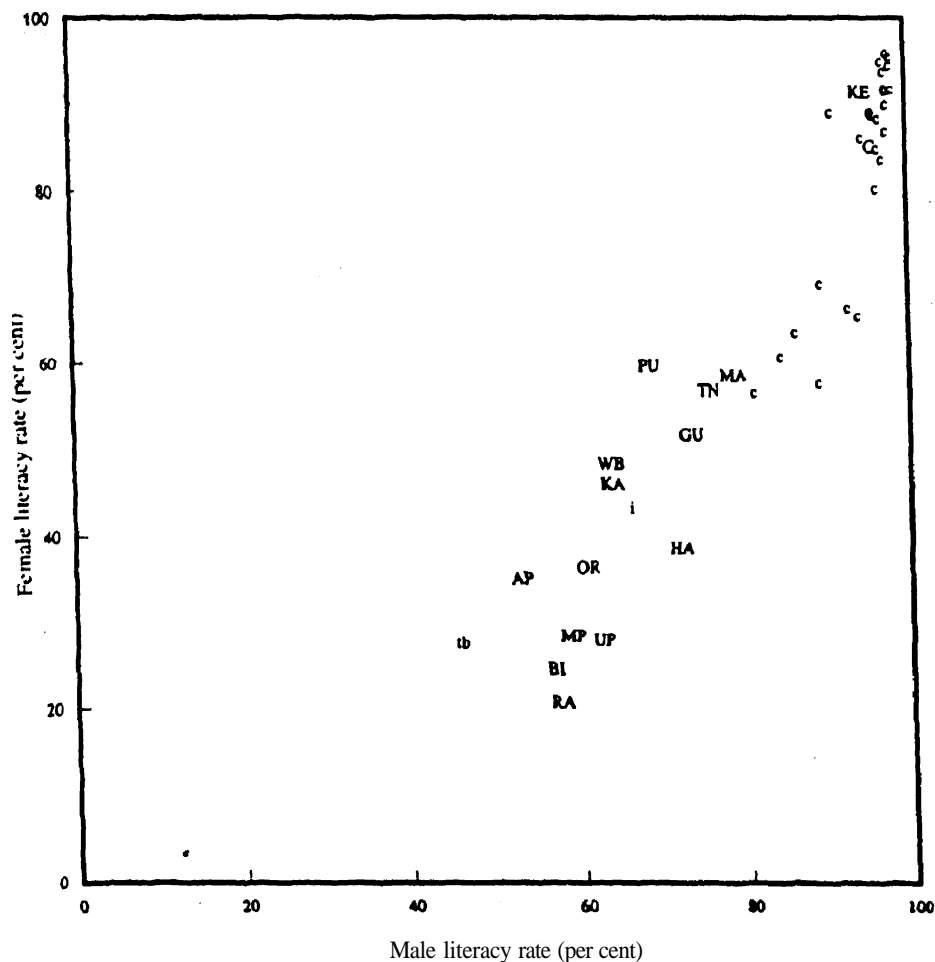
TABLE A5: LITERACY RATES IN CHINA, 1990 - AGE 15+

States	U/R Combined, 15+			Rural, 15+			Urban, 15+		
	P	M	F	P	M	F	P	M	F
Total	77.8	87.0	68.1	73.8	84.3	62.9	82.4	90.5	73.6
Beijing	89.1	94.6	83.1	81.0	88.2	74.0	91.7	96.6	86.4
Tianjin	88.4	94.7	82.0	82.6	90.5	74.8	90.7	96.2	84.9
Hebei	78.4	87.2	69.3	75.4	85.0	65.8	89.7	94.9	83.7
Shanxi	84.2	89.9	78.0	81.3	87.6	74.8	90.7	94.8	85.8
Inner Mongolia	78.3	85.6	70.4	72.4	81.2	62.6	87.9	92.9	82.6
Liaoning	88.5	93.4	83.4	85.2	90.8	79.3	91.5	95.8	87.0
Jilin	85.7	90.5	80.7	82.4	87.7	76.6	89.9	94.2	85.6
Heilongjiang	85.1	90.5	79.3	81.0	87.4	74.1	89.1	93.7	84.4
Shanghai	86.5	94.0	78.6	77.4	88.0	67.3	90.9	96.8	84.6
Jiangsu	77.3	88.0	66.4	74.5	86.2	62.7	86.8	93.7	79.3
Zhejiang	77.1	86.7	66.9	73.8	84.6	62.5	83.8	91.2	76.1
Anhui	65.7	78.8	51.7	61.7	76.1	46.5	82.4	90.0	74.1
Fujian	76.9	89.4	63.7	74.1	87.9	59.8	85.8	94.2	76.6
Jiangxi	75.9	87.7	63.4	72.3	85.7	58.2	88.5	94.4	82.0
Shandong	77.0	86.7	67.2	74.0	84.5	63.7	84.3	92.1	76.1
Henan	76.9	85.9	67.7	74.6	84.1	65.0	88.5	94.1	82.3
Hubei	77.7	87.5	67.3	73.4	84.6	61.6	87.4	93.9	80.3
Hunan	83.0	90.8	74.5	81.1	89.6	71.9	90.9	95.6	85.6
Guangdong	84.9	94.2	75.5	81.9	92.8	70.9	89.5	96.2	82.5
Guangxi	83.8	92.5	74.3	82.1	91.5	72.0	91.8	97.1	85.8
Hainan*	78.8	90.1	66.8	75.6	88.2	62.5	88.0	95.3	79.7
Sichuan	78.8	87.0	69.9	76.4	85.5	66.8	87.4	92.5	81.6
Guizhou	63.3	78.6	46.8	59.1	76.1	41.1	79.0	87.8	69.2
Yunnan	62.5	75.5	48.8	58.1	72.2	43.4	84.4	91.0	76.8
Tibet	30.7	44.5	16.9	24.6	38.2	11.5	70.1	80.7	57.1
Shaanxi	74.9	83.6	65.5	69.8	79.6	59.6	91.1	95.7	85.8
Gansu	60.8	73.7	46.9	53.4	67.9	38.2	84.6	91.6	76.4
Qinghai	60.0	73.1	45.6	48.5	64.3	31.7	87.2	93.3	80.3
Ningxia	66.5	77.5	54.9	57.2	70.4	43.6	88.3	93.4	82.5
Xinjiang	80.5	84.2	76.5	75.6	79.2	71.7	88.6	92.5	84.4

Note: The 1980 Census distinguishes between three types of residential areas: cities and townships and counties. Urban literacy rates were calculated from the cities and townships data, rural rates from county data. Further, the 1990 Census uses two different notions of cities and townships (see China Population Statistics Yearbook 1992, pp 5 for details); the second notion applies here.

Source: State Statistical Bureau (1993a), Tables 5-9 to 5-11.

FIGURE 5; INDIAN STATES AND CHINESE PROVINCES - LITERACY RATES IN THE 15-19 AGE GROUP. 1981-82



Notes: 'c' and 'i' denote the all-China and all-India figures respectively. Each 'c' denotes one Chinese province ('lb' stands for Tibet). The initials indicate India's major states: AP = Andhra Pradesh, BI = Bihar, HA = Haryana, GU = Gujarat, KA = Karnataka, KE = Kerala, MA = Maharashtra, MP = Madhya Pradesh, OR = Orissa, PU = Punjab, RA = Rajasthan, TN = Tamil Nadu, UP = Uttar Pradesh, WB = West Bengal

Source: Sharma and Retherford (1987), SSB (1985) and CASS (1987).

however, these socio-economic disparities tend to be larger in India (see also Figures 1A and 1B).

The ratio of female to male adult literacy in China (in percentage terms) was 78 in 1990, a considerable improvement from the 1982 ratio of 65 (Table 3). This ratio rises steadily with decreasing age, and the ratio for the 15-19 age group was 95 in 1990, suggesting that the elimination of gender bias in literacy among the young is not far off. By contrast, India's female to male literacy ratio was only 53 in 1981, and 61 in 1991. While India's present ratio appears to put it just over a decade behind China with respect to gender bias, the evidence of persistent and strong gender bias amongst younger cohorts in India qualifies this optimistic assessment. The 1981 literacy ratio for the 15-19 age group in India was only 65 - well below China's 1982 ratio of 89 for the same age group.<sup>18</sup>

Rural-urban differences represent another crucial basis of social inequality in educational achievements. As mentioned

earlier, residents of rural areas in India experience particularly large disadvantages. In 1981, the rural to urban literacy ratio was just 54, rising only slightly to 61 in 1991. In China, rural-urban disparities are significantly smaller. In 1982, the rural to urban literacy ratio was 76 (much higher than the 1991 Indian ratio), and by 1990 this ratio had risen to 90.

In India, a third important basis of educational inequality is that of caste and related personal characteristics. The 1991 literacy rates for scheduled castes (SC) are much lower than the all-India averages excluding the scheduled caste and tribe populations (Table 4). SC literacy rates were only 50 per cent for males and 24 per cent for females, compared with 70 percent and 45 per cent, respectively, for the non-SC/ST population.<sup>19</sup> Scheduled tribes are even less literate, with rates of 41 per cent for males and 18 per cent for females. Together, these underprivileged groups make up nearly one quarter of Indians total population.

Each of these three major sources of

educational inequality merits attention on its own. Their cumulative effects imply enormous odds against literacy for the most disadvantaged sections of society, particularly in India. To illustrate, while 81 per cent of urban Indian males are literate (96 per cent in Kerala), the corresponding proportion is only 31 per cent for rural females, 19 per cent for scheduled caste rural females, and 5 per cent for the same group in Rajasthan and Bihar.<sup>20</sup>

The contribution of educational inequalities to the overall India-China contrast in literacy rates can be assessed by noting that, for the most privileged group in both countries (i.e., urban males), literacy rates are not all that far apart. In 1990-91, the urban male literacy rate was 94 per cent in China and 81 per cent in India (while the literacy rates for rural females, for instance, was 63 per cent in China and 31 per cent in India). The reduction of educational disparities has played an important role in China's comparatively successful experience of literacy expansion.

Finally, it is worth emphasising that educational inequalities are both a reflection of other social disparities (e.g., those relating to caste, class and gender) and a cause of social inequality. In fact, it can be argued that widespread illiteracy in India is now one of the most fundamental causes of persistent social inequality. Indeed, as mentioned in the introduction, basic education has important liberating and redistributive roles, the suppression of which makes it that much harder to achieve rapid social change. This particular feature of education requires far greater attention than it has received so far, not only from government authorities but also from social movements.

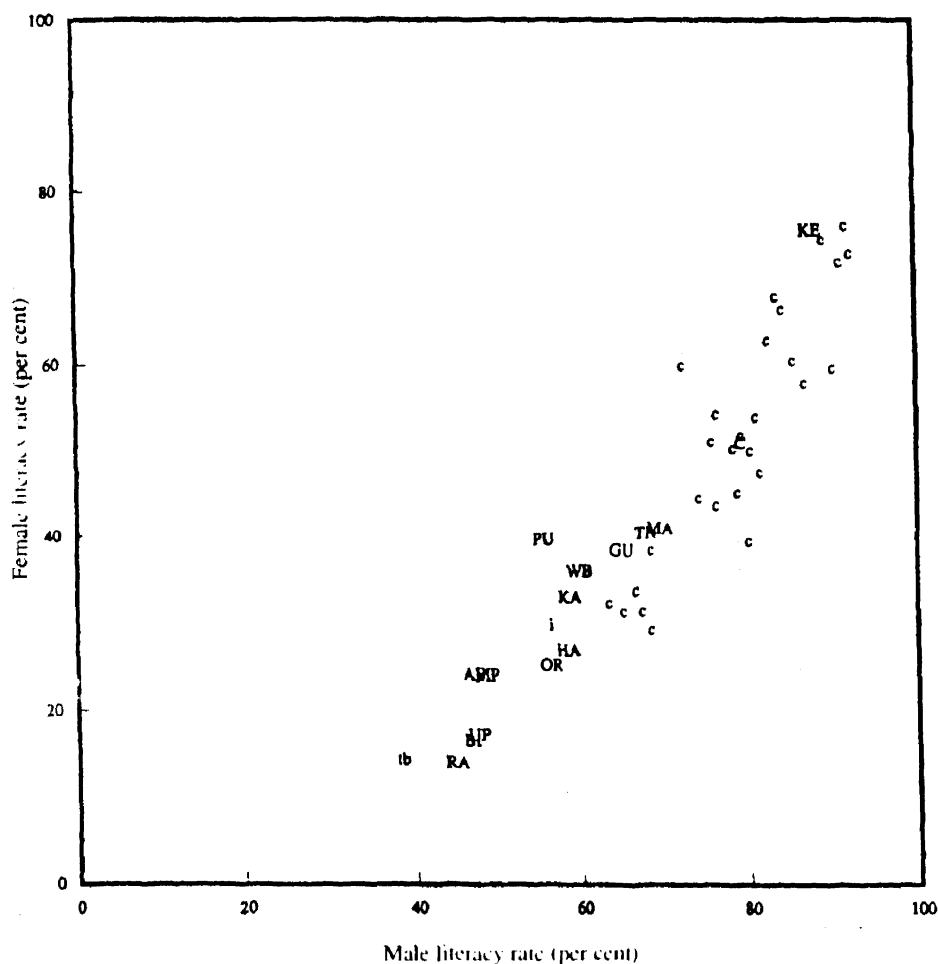
### III Concluding Remarks

A number of significant findings emerge from the preceding investigation. The following are particularly noteworthy.

First, recent census data for both countries indicate that China is well ahead of India in the field of basic education. In 1991, the proportion of illiterate persons in the adult population was still as high as 48 per cent in India, compared with 22 per cent in China.<sup>21</sup>

Second, age-specific literacy rates bring out a crucial feature of the Chinese advantage. While nearly 40 per cent of Indian children fail to learn to read and write, the corresponding figure for China is only around 5 per cent.<sup>22</sup> This implies that China can be expected to move fairly rapidly towards universal literacy as the younger cohorts gradually replace the older age

FIGURE 6A INDIAN STATES AND CHINESE PROVINCES - ADULT LITERACY RATES, 1981-82



Notes: Same as in Figure 5.

Source: Government of India (1987), SSB (1985) and CASS (1987)

groups. In India, by contrast, there is still a massive problem of illiteracy among young boys and girls.

Third, China's lead was achieved during the pre-reform period, on the basis of a strong commitment to the widespread provision of elementary education at an early stage of development. The speed of education expansion in China after Liberation has, in fact, been quite remarkable. Starting in the 1940s with literacy rates similar to those in India, China almost caught up with Kerala, in terms of literacy rates in the younger age groups, by the early 1960s; and by the early 1980s, China was very close to universal literacy in those age groups. During the 1980s, both India and China made further progress in literacy, with their relative position remaining more or less unchanged.

Fourth, aside from having higher average literacy rates, China has been more successful than India in reducing disparities of educational achievements between different social groups. Rural-urban disparities are also significantly lower in China, where infrastructural and institutional expansion in rural areas has

been a major goal of public policy after Liberation.

Fifth, female literacy rates are well below male literacy rates in both countries. The gender bias is particularly striking in India, where 61 per cent of females above the age of seven are illiterate, and where only one girl out of two learns to read and write. The gender gap is rapidly narrowing in China (due to near-universal literacy in the younger age groups), but not in India.

Sixth, there are wide inter-regional disparities in literacy rates in both countries. The regional contrasts are largely driven by differences in female literacy. The persistence of high levels of female illiteracy in particular states or provinces is a matter of special concern in both countries.

Seventh, in spite of sharp regional contrasts within each country, most Chinese provinces have much higher literacy rates than most Indian states. The state of Kerala in India stands out as the main exception to this pattern. With universal literacy among adolescent males and females, and near-universal literacy in the adult population, Kerala is not only well ahead of all Indian states but also in the same league as the

most advanced Chinese provinces (in fact, for female literacy, Kerala is ahead of all Chinese provinces). This remarkable achievement reflects more than a 100 years of creative interaction between state commitment to, and public demand for, the widespread provision of elementary education.<sup>23</sup>

Eighth, the other striking exception to the general lead of Chinese provinces over Indian states is Tibet. Literacy rates in Tibet are not only abysmally low (even lower than in the educationally backward states of north India), they also show little sign of significant improvement over time. While the interpretation of census data for Tibet requires further scrutiny, there is a strong possibility of Tibet having been comprehensively neglected in the efforts of the Chinese leadership to promote basic education.

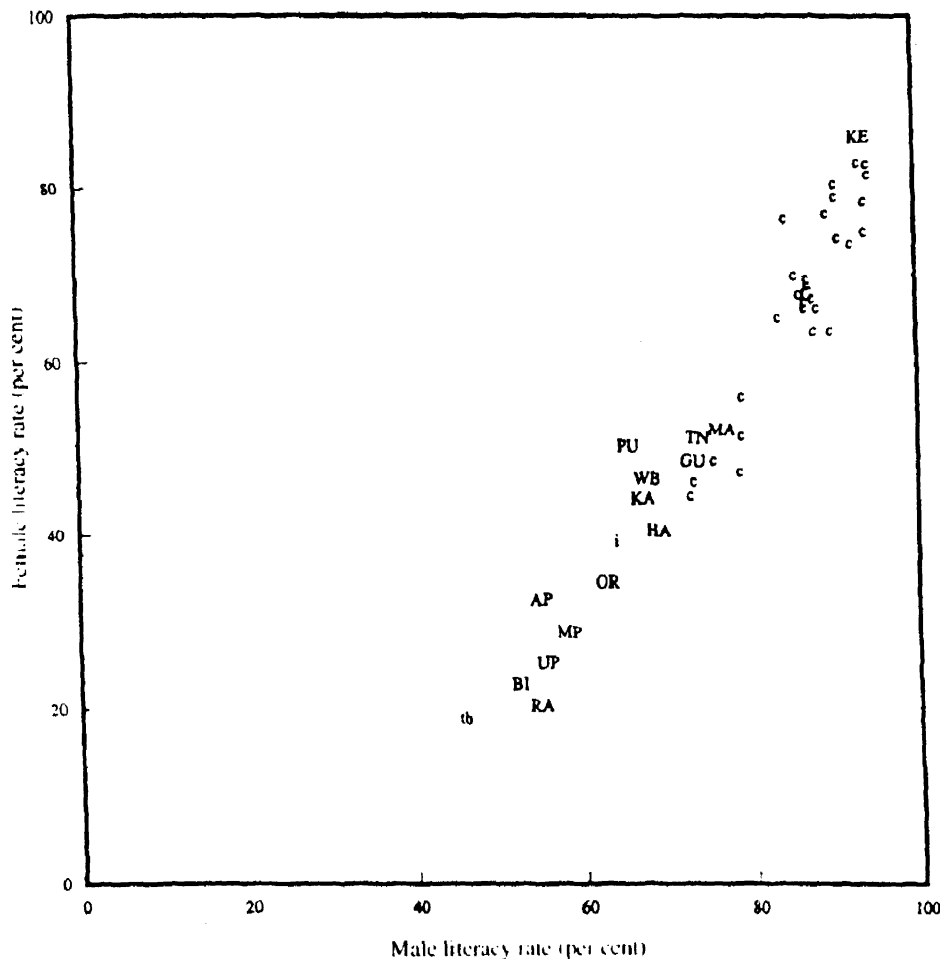
#### IMPLICATIONS

China's lead over India in the field of basic education is one of the pre-reform social achievements that have permitted and sustained participatory growth in China after the reforms. Other achievements of this type, rooted in the pre-reform period, include (1) land reform, (2) the elimination of endemic hunger and morbidity, (3) the establishment of a basic social security system, (4) the expansion of rural infrastructure, and (5) the institution of a credible (though authoritarian) system of local governance.<sup>24</sup> Understanding these pre-reform achievements is crucial for a correct assessment of China's successful economic development after the reforms, and of the lesson arising from that experience. India is nowhere near achieving the 'initial conditions' that have made the Chinese reforms so successful.

The contrast between India and China in matters of basic education also fits in a general pattern of educational backwardness in India. Literacy rates in India are not only lower than in China (or, for that matter, lower than literacy rates in China in the late 1970s), they are also lower than the average literacy rates for all 'poor countries' other than India and China, and also lower than estimated literacy rates in sub-Saharan Africa.<sup>25</sup>

This sobering aspect of India's development experience calls for radical changes in public policy, giving much greater priority to the widespread and equitable provision of basic education. Admittedly, public awareness of the need to address the problem of endemic illiteracy in India has significantly grown in recent years. Even in official circles, much attention has been paid to this problem. Many pronouncements have been made expressing the government's intention to give basic education a higher priority in

FIGURE 6B: INDIAN STATES AND CHINESE PROVINCES – ADULT LITERACY RATES, 1990-91



Notes: Same as in Figure 5.

Source Tyagi (1993) and SSB (1993a).

public policy, many new programmes have been launched (more often than not in response to international criticism or pressure), and many glossy publications extolling the new initiatives have been produced. But these pious statements are still to be matched with bold measures to ensure the universalisation of primary education in the near future.

Notes

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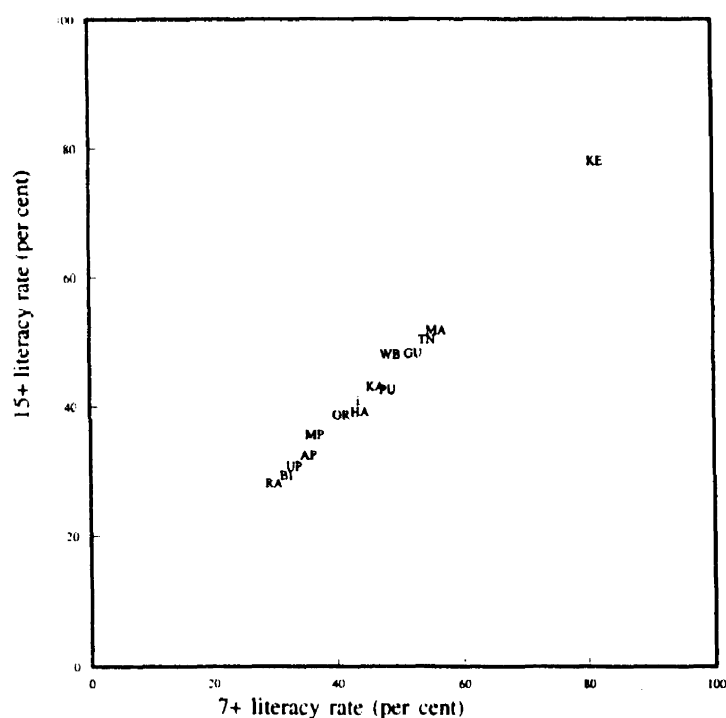
- 1 On other aspects of the relationship between rapid economic growth in the post-reform period and the social achievements of the pre-reform period (see Dreze and Sen (1995), Chapter 4)
- 2 On the methodology and basic findings of these censuses, see Li (1992) for China, and Bose (1991a, 1991b) and Premi (1991) for India. The issue of comparability between the Chinese and Indian census based literacy figures will be addressed in the next section.

- 3 Instructions to investigators, 1981 census (see, e.g., *Census of India 1981*, Series-1, Part II B(i), Primary Census Abstract, General Population, p AXIV) The passage cited in the following sentence is from the same source. The literacy criteria used in other recent censuses, including the 1991 census, are the same as those described here for the 1981 census (see, e.g., Government of India, 1992, p49).
- 4 This statement is based on discussions with school teachers (who are often recruited as census investigators) in Andhra Pradesh and Uttar Pradesh.
- 5 A third issue is that some census investigators may be filling the forms at home, without actually interviewing the respondents (according to one expert from the Indian Statistical Institute, who used to conduct census investigations himself, this practice is not uncommon) If so, census-based literacy figures may partly reflect the subjective perceptions of the investigators, rather than actual literacy achievements. This is likely to lead to large biases in literacy rates for particular villages, but not necessarily for regional aggregates, if the perceptions of investigators are reasonably accurate 'on average'.
- 6 Useful comparative data on literacy rates from census and National Sample Survey

sources can be found in Visaria et al (1993): see also Sengupta (1991). The official literacy criteria used by the National Sample Survey are similar to those of the census. Literacy estimates based on NSS data tend to be a little higher than the corresponding census estimates, and it has been suggested that this difference reflects the fact that NSS investigators, unlike census investigators, are not required to test the respondents' claimed reading or writing abilities [Sengupta 1991]. Since the actual performance of literacy tests in census investigation is in doubt (as discussed earlier), there may be other reasons for the observed differences between NSS and census estimates. In any case these differences are small and can be ignored for our purposes.

- 7 See, e.g., Zhang and Wei (1987). The same criteria are confirmed by the State Statistical Bureau of the People's Republic of China (personal communication).
- 8 Personal communication from the State Statistical Bureau of the Peoples Republic of China. Zhang and Wei (1987:17-18) also state that people "who cannot read a newspaper, write a letter or a receipt" are considered as illiterate or semi literate.
- 9 See, e.g., the demographic studies of Coale (1993) and Banister (1991a, 1992b).
- 10 This is, for instance, the age cut off used in both *World Development Report 1994* (World Bank 1994) and *Human Development Report 1994* (United Nations Development Programme 1994).
- 11 The listing of basic statistics from the four post-Liberation censuses (1953, 1964, 1982 and 1992) in the *China Statistical Yearbook 1993* (Table 14) does not present any data on education for the 1953 census (while education data are reported for each of the other census years).
- 12 To illustrate, it is quite possible for country A to have a larger annual growth rate of literacy than country B and yet a smaller rate of decline of illiteracy (an alternative measure of progress).
- 13 For convenience of presentation, Figure 3 is based on 'forward projection', i.e., predicting literacy rates in later census years from earlier census data. But the principles are exactly the same as with the 'backward projection' method.
- 14 Figure 4 is constructed around age groups for which literacy rates are available for both India and China from the 1981-82 censuses. Unfortunately, the 1981 census publications for India do not give age-specific literacy rates within the 35-59 age group.
- 15 For further discussion of this aspect of Chinese politics, see Dreze and Sen (1995), chapter 4.
- 16 For further discussion, see Dreze and Saran (1995) and Dreze and Sen (1995).
- 17 In some respects, the progress of social indicators in China during the post-reform period has been surprisingly slow, considering the pace of economic growth in that period. Life expectancy, for instance, has only expanded by 1.6 years between 1981 and 1991, compared with about 2 years in Sri Lanka, four years in South Korea, 4.6 years in Kerala and 5.3 years in India as a whole.

FIGURE A1: COMPARISON OF 7+ AND 15+ ADULT LITERACY RATES IN INDIA (1981)



Notes: The all-India figure is denoted by 'i', and the initials indicate India's major states.  
Source: Government of India (1987).

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- (see Dreze and Sen 1995, chapter 4). The comparison with Kerala is particularly instructive, given that China and Kerala had very similar demographic indicators in 1981; since then, Kerala has surged ahead of China in this respect, in spite of very slow economic growth.
- 18 The ratio of female to male literacy rates is only one possible measure of gender bias, and the comparisons made in this paragraph should be interpreted bearing in mind the 'cardinalisation' issue mentioned earlier (see footnote 10). The general observation that gender bias is particularly pronounced in India is, however, quite robust. Similar remarks apply to the rural-urban comparisons made in the following paragraph.
  - 19 All the literacy figures cited in this paragraph relate to the 7+ age group.
  - 20 Tyagi (1993), pp 24-30, based on the 1991 census. The reference age group is seven years and above.
  - 21 As explained earlier, the gap is even larger when a similar age cutoff of 15 years is used for both countries (as opposed to using the age cut-off of seven years for India, and 15 years for China).
  - 22 This statement is inferred from the figures on literacy in the 15-19 age group in 1990-91 (Table I).
  - 23 On this see, e.g. Jeffrey (1992) and Ramachandran (forthcoming).
  - 24 The last achievement has been based, to a large extent, on an authoritarian political structure, with the party exercising an extraordinary degree of control over individual lives. This is not a pattern that India would be well advised to emulate, but the Chinese experience does draw attention to the crucial role of effective local governance in economic and social development.
  - 25 See Dreze and Sen (1995).

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