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*Demographic Trends and Population Policy in China**

CHINA, WITH a population of over 1,060 million perons at the end of 1986, accounts for 21.4 per cent of the total population of the world (4.96 billion) and for 28.1 per cent of the total population of developing countries (3.77 billion).[1] China's land area of 9.6 million square kilometres makes it the third largest country in the world (after the USSR and Canada), with a population density of 109 persons per sq. km. (less than half that of India's 231). However, since only 11 per cent of China's land is considered arable, the difference between China and India with respect to density per square kilometre of arable land is much smaller.

Although China retains the first rank among the nations of the world with respect to population size, the annual increment in population has been higher in India than in China for almost a decade now. Underlying this is China's unique success since about 1971 in sharply lowering its birth rate. To understand this development in the comprehensive perspective of demographic trends in China since its 'liberation' in 1949 is the objective of this paper.

The discussion which follows has been facilitated because of the Chinese having conducted the third national census with a reference date of July 1, 1982. The census schedule was quite detailed and its results have been published with remarkable speed. China has also begun sample surveys to ascertain its current vital rates, the results of which are published within two months after the end of the calendar year. These data are con-

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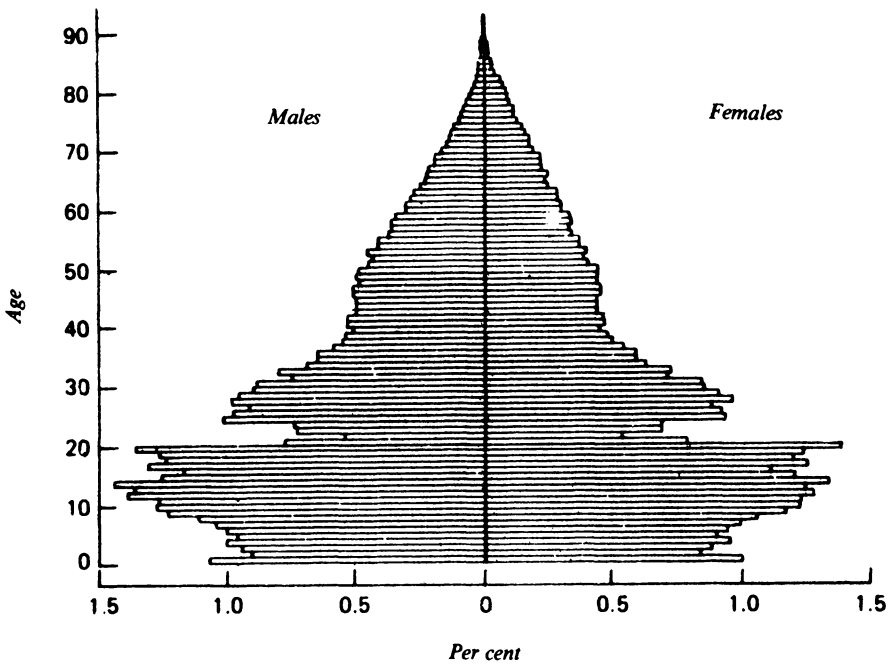
Figure I

AGE PYRAMID OF THE POPULATION 1982 : CHINA



sidered more reliable than the earlier information about China's population that was based on the traditional household registers.

A Committee on Population and Demography, appointed by the National Academy of Sciences of the United States and chaired by Ansley Coale, has carefully sifted the available data from China. The resulting adjusted estimates are preferable to the official data that suffer from varying degrees of underestimation of birth and death rates. Of course, a large country such as China has sizeable inter-provincial variations in the quality of data and also in the manner in which various policies announced at the central or national level are implemented. This rich variety of differences cannot, however, be covered in the present paper which relies for most purposes on the adjusted estimates.

KEY DEMOGRAPHIC DATA

Table 1 summarises the key statistics about China's population according to the censuses conducted in 1953, 1964 and 1982. The average growth rates for the inter-censal period can be compared with the rates of natural increases shown in the second segment of the table. In the absence of significant international migration, the rate of natural increase equals the growth rate. Also, the estimated death rates are supplemented by the information on the life expectancy at birth or the average age at death.

The data on the size and inter-censal growth of China's population suggest that the post-liberation period witnessed a significant rise in the growth rate, which was much higher than the estimated average rate of 0.5 per cent during 1900-50 (and zero during 1850-1990)[2]. Besides, the average rate of growth during the 18 years between 1964 and 1982 was higher than during 1953-64; but the vital rates for the intervening years need to be examined to understand some of the momentous changes.

Within the first inter-censal decade, the birth rate was between 40 and 44 per 1,000 population up to 1957 and the death rate was on the decline from a peak of about 29 in 1954.[3] During 1958-61, the years of the Great Leap Forward and the ensuing crisis, the birth rate declined and the death rate rose sharply so that during 1959-61, the population actually declined. The lost births are reflected in the age pyramid of the population enumerated by the 1982 census in the form of sharp declines in the age group 21-24 (see Figure I). The peak death rate during 1960 was almost 39 and the birth rate during the same year was 25. The number of excess deaths was 27 million for the three-year period. But for these excess deaths and birth losses, the rate of inter-censal growth during 1953-64 would have been higher.

The birth rate reached a low of 22 during 1961 but recovered to 41 during 1962, 47 during 1963 and 41 again during 1964. The death rate declined sharply during 1964-66 and has continued to show a downward trend since then. The result was an acceleration of the rate of population growth to an unprecedented 2.7 per cent during 1964-66. It stimulated a resumption of

Table 1

KEY STATISTICS ON CHINA'S POPULATION

Main Characteristics

Date of census estimates	*Population*	*Average annual growth rate*	*Sex ratio (males) per 1000 (females)*	*Urban popu - lation (percent)*
1.7.1953	580.6	—	1075	12.9
1.7.1964	694.6	1.6	1055	19.1
1.7.1982	1008.2	2.1	1063	20.9
31.12.1985*	1045.3	1.0	1069	36.6

*Estimates

Vital Rates per 1000 Population

Period/Year	*Birth rate*	*Death rate*	*Rate of natural increase*
1953-55	42.9	25.7	17.2
1959-61	25.3	27.5	− 2.2
1964-66	39.6	12.5	27.1
1971-73	32.0	8.6	23.4
1980-81	19.8	7.3	12.5
1981*	20.9	6.4	14.5
1982*	21.1	6.6	14.5
1983*	18.6	7.1	11.5
1984*	17.5	6.7	10.8
1985*	17.8	6.6	11.2
1986*	20.8	6.7	14.1

*These estimates have been reported by the Statistical Bureau of China. Estimates for earlier years are based on revised figures presented in Ansley Coale's report on China.

Life Expectancy at Birth (Years)

Period/Year	*Males*	*Females*
1963-64	42.2	45.6
1964-82	61.6	63.2
1981	66.4	69.4

Sources : 1. State Statistical Bureau ,*Statistical Yearbook of China , 1985,* Beijing , 1985.

2. Ansley J .Coale ,*Rapid Population Change in China , 1952-82,* National Academy Pess. Washington. D.C., 1984. p. 66.

3. Judith Banister and Samuel H. Preston, 'Mortality in China'. *Population and Development Review*, Vol . 7,No . 1,March 1981,pp . 98-110.

4. A press release in *Indian Express*, Ahmedabad ,February 18. 1987.

the propaganda for limiting family size, which was interrupted during the years of the Cultural Revolution, but which was revived during 1971 and has continued since then with fluctuating emphasis but remarkable success.

Before we look at the vicissitudes of family planning activities in China, a few other key characteristics of the population deserve a brief discussion.

DEFICIT OF FEMALES IN THE POPULATION

China seems to share with India, Bangladesh, Pakistan and Sri Lanka marked deficit of females in the population, which is known to be due mainly to the higher risks of death faced by the fair sex. In most of the developed countries of the world, the so-called weaker sex is found to be biologically sturdier and therefore the situation prevailing in the Indian subcontinent and in China seems anomalous.

The high quality of Chinese age statistics facilitates an interpretation of this anomaly. Ansley Coale has noted the excess of males among the birth cohorts of 1951-52 back to the cohorts born about 1940 in all the three censuses of 1953, 1964 and 1982 and infers that 'those born before about 1952 experienced higher female than male mortality'.[4] A lower life expectancy at birth among females than among males has been estimated earlier from a survey of over 46,600 farmer families interviewed during 1929-31 in 119 localities of 16 provinces under the leadership of J.L. Buck of Nanking University.[5]

Also, the abridged life tables for both 1953-64 and 1964-82 constructed by Coale show higher death rates for females than for males up to age 10. Likewise, the estimates of life expectancy at birth among women in urban Beijing in 1950 and 1953 were lower than for men.[6] While the situation has certainly improved since then, the Chinese scholars confirm that the tradition of placing a higher value on sons than on daughters has not altogether disappeared from the country.

The other possible explanations of the reported deficit of females are : (i) the sex ratios at birth (SRB) (ii) selective undercount of females. As for the former, the sex ratio of third or higher order rural births, reported in a 1 per 1,000 sample fertility survey conducted after the 1982 census, was significantly above the normal range of 104-106; but the likely explanation seems to be selective under-reporting.[7] It is unlikely to be a real contributory factor.

More importantly, however, the 1 per 1,000 sample fertility survey indicated a markedly lower sex ratio (1,028) than the 1982 census (1,068). The differences between the estimates of sex ratios based on the census and the survey were marked particularly in ages 20 to 60 and Coale has conjectured that 'less care was taken in establishing the *de jure* population of the households' in the census 'than in collecting the detailed marriage and fertility histories' in the survey [8] It may be so and therefore the actual deficit of

females may be less than what appears in Table 1. However, the practice of female infanticide did prevail in China in the past and it did re-surface as the 'one child family' policy, discussed below, was implemented.[9]

URBANISATION AND MIGRATION

An important variable discriminating between population characteristics and vital rates tends to be rural-urban residence. Accordingly, Table 1 also shows the proportion of population reported to be resident in towns and cities as distinguished from villages.

The data on urban population are highly sensitive to the definitions used. *Prima facie*, the reported proportion of urban population in China (21 per cent according to the 1982 census) was lower than in India (17.3, 18.0, 19.9, and 23.7 per cent in 1951, 1961, 1971 and 1981 respectively). Since then, however, the pace of urbanisation has accelerated sharply. Changes in the definition of a town have raised the number of cities' and 'towns' in China respectively from 236 and 2,664 at the time of the 1982 census and 245 and 2,800 at the end of 1982 to 295 and 7,280 respectively at the end of 1984.[10]

The sizeable further increase in the proportion of urban population from 31.9 per cent at the end of 1984 to 36.6 per cent at the end of 1985 suggests a likely continuation of the process of reclassification. According to one estimate, at the end of 1985, these numbers had risen to 324 and 7,632 respectively.[11] Evidently, the Chinese criteria to classify a place as urban have become more lenient than those used in India.[12]

Since 1984, a town may be established 'as long as it is the location of a country government' or a township with a population over 20,000 where the township government is located and the non-agricultural population is over 10 per cent of the township's population. Even the criterion of 10 per cent non-agricultural population can be relaxed in 'a minority region, a far-away area with rare population, mountainous area, area with concentration of factories and mines or a small port, a scenic post for tourism or a frontier post , etc.' Also, a locality may be approved as a town if 'it is necessary to establish a town.'

According to the Seventh Five-Year Plan, China expects to have by 1990 'at least' 400 cities and 10,000 towns. Also, it promises to continue to adhere to the 'principle of controlling the size of large cities, developing medium-sized ones moderately and small ones actively.'[14]

A good part of this accelerating urbanisation is attributable to reclassification. The changes in definitions have tended to vary the population criterion and the prescribed proportion of non-agricultural workers in the particular localities. Up to 1963, a town was defined as an area with at least 2,000 permanent residents, of whom 50 per cent or more were non-agricultural residents. Since 1964, a town had been defined as an area with at least 3,000 permanent residents, of whom 70 per cent or more were non-agricultural; areas with 2,500 to 3,000 permanent residents were

also considered towns, if 85 per cent or more of them were non-agricultural. The permanent residents were those having their names in the household registers; and the term non-agricultural population referred to those authorised to receive the government supplied grain rations.

The tightening of the criteria to define a town or city in 1964 was partly a reaction to the accelerated urbanisation during the 1950s when the urban population had jumped from 78 million at the end of 1953 to 99.5 million at the end of 1957 and 131 million at the end of 1960 (from 13.3 to 19.8 per cent of the total). Presumably it was a response to the pull of towns and cities where the industrial development and the growth of the services sector were faster.

A tighter definition of a town after 1963 also helped to limit the responsibility of the government to provide grain rations to the urban population. As a result, the number of towns had declined from 5,402 in the 1953 census[15] to a substantially smaller number.

The declassification of several towns and cities (number not known) lowered the percentage of urban population to 16.8 at the end of 1963; the pace of urbanisation thereafter was relatively slow until 1982.

Slow urbanisation was achieved through relatively strict regulation of rural-urban migration based on the system of population registration, food allocations or rationinig tied to legal residence and police surveillance. In fact during 1966-76, the decade of the Cultural Revolution, about 14-17 million educated young adults had been required to move from the cities to rural areas, some of them to the sparsely populated northwest and the southwest. After the death of Mao Zedong in late 1976, the urban youth refused to leave the cities and the strikes and demonstrations reportedly forced the government to allow the former out-migrants to return to the cities. The 'compensatory migration' of what was called the 'backward flowing population' has contributed to urban growth and accelerated urbanisation.

In addition, however, the communes used to disguise the underemployment of peasants. With the introduction of the contract responsibility system with remuneration linked to output, the extensive use of varied forms of farm machinery[16] and the associated rise in productivity, underemployment has become more obvious. Also, the cultivated acreage, widely believed to be under-reported, has hardly increased and reportedly ranged between 100 million hectares in 1949, 1975 and 1979 and 112 million hectares in 1957. Almost 45 per cent of this land is reported as effectively irrigated. Table 2 shows that since 1978, there has been a substantial increase in the use of farm machinery in Chinese agriculture. The cultivated area per agricultural worker, however, is very low.

The existence of surplus labour in agriculture is recognised and the government has modified its earlier approach to rural-urban migration. The Seventh Five-Year Plan talks of farmers leaving the land, but not the village. They can commute to sell their produce in a rural market town

where a rural industry or standard market is located, and to set up non-farm enterprises in towns and cities, as long as they continue to be responsible for their own food supply. The upward revision of the prices of farm products distributed through the State allocation system has narrowed the gap between the free market and regulated prices. As a result, most Chinese cities now have what is termed as the 'floating population' of towns. In mid-1985, the Ministry of Public Security issued 'provisional rules' for temporary registration of the floating population in cities and towns. Those rural-urban migrants requiring a long period of urban residence are issued cards designating them as 'residents living with others'.

Table 2

MODERNISATION AND MECHANISATION OF CHINESE AGRICULTURE

Item	*1978*	*1983*	*1984*	*1985*
Farm machines-total horse power capacity (million hp)	160	245 (53.1)	(8.2)	265 (+7.2)
284				
Large and medium tractors of 20 hp or more ('000)	557	842 (51.0)	857 (1.9)	852 (-0.2)
Small and walking tractors ('000)	1373	2750 (100.3)	3289 (19.6)	3824 (16.3)
Trucks ('000) for agricultural use	74	275 (271.6)	345 (25.5)	430 (24.6)
Combine harvesters ('000)	19	36 (89.5)	36 (0)	35 (-3.6)
Rural electricity consumption (billion kwh)	25.3	42.8 (69.2)	46.4 (8.4)	50.9 (9.7)

Note: Figures in parentheses show the percentage change the previous year. Figures relate to the end of the year.

Source: State Statistical Bureau, *Statistical Yearbook of China, 1986*, Oxford Univ. Press, Oxford, p. 109.

Some migration surveys are currently in progress and will provide interesting information. However, migration is said to be male-dominated and the urban sex ratio has reportedly risen from 114 in the 1982 census to 120 by 1985. In Beijing, which had an urban population of almost 6 million at the time of the 1982 census, the floating population had reportedly risen to 700,000 by 1985. In Shanghai, with an urban population count of almost 7 million in 1982, a survey in August 1984 estimated a floting population of 590,000 (almost 30 per cent of them or 165,000 had been in urban Shanghai for a year or more).

Overall, the ongoing drive for modernisation of the Chinese economy is marked by a rather surprising shift in the policy on urbanisation. The emphasis on the development of small and medium towns is likely to result in a broad-based pyramid of urban locations. Despite the reported continued need to apply for permission to move to a town or a city, the

policy of a tight control on the growth of even the large cities is currently being debated. The strain on the infrastructure of large cities with respect to housing, water supply and transportation makes it unlikely that the lid on city growth will be lifted completely; a major shift in the population distribution by the turn of the century is on the anvil.

It is difficult to make any projection for a country where the percentage of urban population can rise from 21 (mid-1982) to almost 37 (1985 end) in a short span of three-and-a-half years; yet a continuation of the process can easily lead to an urbanisation level of 55-60 per cent by A.D. 2000. A critical question relates to the associated diversification of the employment structure and the requisite investments, but it is by no means an insuperable task. Also, it would probably help to contain the rise in urban wage rates and would contribute to a further narrowing of the rural-urban differentials in living standards.

We turn now to the level of life expectancy or the mortality situation.

MORTALITY

As in the rest of the developing world, the death rate in China prior to liberation was high and the life expectancy was low. A survey of 46,600 households during 1929-31 suggested an expectation of life at birth of the order of 24.6 years for males and 23.7 for females.[17] Infant mortality was around 300 per 1,000 live births. Around 1948-49, the crude death rate was estimated at 28, although some estimates place it as high as 35-45. The first estimate was very similar to the crude death rate of 27 during the inter-censal decade 1941-51 in India, with some estimates suggesting a value of 30. The estimates of life expectancy during the inter-censal period 1953-64 are affected by the severe famine and dislocation of the economy during 1959-61. However, beginning with 1962, the Chinese death rate (roughly adjusted for understatement) has not exceeded 14 and it has been below 10 since 1969. The expectation of life at birth during the inter-censal period 1964-82 has been estimated at around 62 years. By 1981 it had risen to 68 years. The latter value was 13 years above India's (55 years) in 1981. In fact even in 1985 the estimated crude death rate in India was almost 12, higher than the rate estimated for China since 1965 (11 or lower).

The infant mortality rate (IMR) in China during 1983-84 is estimated at no higher than 34-36, while in India the Sample Registration System has provisionally reported an IMR of 95 in 1985 and 104-105 for 1983-84.

The basis of this sharp decline in mortality in China is an emphasis on public preventive services rather than curative health services. Stress has been laid on the improvement of environmental sanitation, control of infections and the elimination of malaria and schistosomaisis (bilharzia).[18]

The National Patriotic Health Campaigns were launched to mobilise the people for preventive and health promotion activities. The first cam-

paign was launched in 1951 and over the next 30 years, there were, on an average, four or five campaigns each year. With their effective organisational network, campaign committees with a small full-time staff were set up at each level, from the national level down to the province, prefecture, county, commune and brigade. The campaigns have inspired the people to work hard to clean the filth and wipe out the four disease-carrying pests, mosquitoes, flies, rats and bedbugs. At one time sparrows were also on the hit list as a pest. However, when the elimination of sparrows threatened to produce serious ecological problems, bedbugs (and in some cases lice and cockroaches) were substituted as the fourth pest.[19] Ditches and sewers were dredged and wells, latrines, animal pens and stoves have been improved to protect water sources and cleanse the environment. At the end of 1982, some 37.5 per cent of the rural population are estimated to have been served with improved drinking water supplies.[20]

A large number of 'sanitation and epidemic stations' and 'maternal and child health institutes' were set up; by 1957 they numbered 1,626 and 4,599, respectively. After the formation of communes and brigades, a sort of cooperative health insurance system has been in operation although the quality of rural medical services has been uneven.

China's celebrated part-time 'barefoot doctor' system, which was greatly expanded during the Cultural Revolution, has worked well in the delivery of health services at the grassroots level. In recent years these doctors have been criticised as not adequate for the task expected of them.[21] As a means to upgrade their status, since 1981, barefoot doctors with five years' experience, who pass the appropriate prefectural examination (i.e., an examination conducted at the level of the prefecture — roughly equivalent to an Indian district) are awarded a certificate as a 'rural doctor'. Their professional status is thereby raised to the equivalent of that of middle-level health workers, although they continue to work at the local level.[22]

The number of barefoot doctors had declined from an estimated peak of about 1.8 million to 1.4 million in 1981 and further to 1.25 million at the end of 1984. About 28.5 per cent of the barefoot doctors at the end of 1984 were females. Some 1.16 million 'medical workers in rural production teams' and 524,000 rural midwives have also been reported as working at the end of 1984.[23] Interestingly, the Statistical Yearbook of China for 1986 gives no information on 'barefoot doctors' or 'part-time medical staff in rural areas'.

The number of rural hospital beds per 1,000 population has risen from 0.05 in 1949 to 1.49 in 1984, i.e., by 30 times, while the corresponding increase in urban areas has been about eight-fold, from 0.63 to 4.77.

The re-training of traditional midwives and the creation of a corpus of social workers skilled in child care have also contributed to the lowering of infant mortality. By 1981, at least 90 per cent of the deliveries were conducted with the 'scientific method' of using sterile tools.[24] The immunisation programmes were implemented since the early 1960s[25]; the annual number

of persons immunised against DPT, measles and infantile paralysis is reported to be 60 million.

The efforts to control disease and death seem to have been assisted by the State control of the production and distribution of pharmaceuticals and medical equipment. The National Drug Corporation, with 310,000 employees, distributes the pharmaceutical products throughout the country. Three corporations, forming part of the State Pharmaceutical Administration of China (with 440,000 employees), are responsible for production. Prices have remained stable.[26] The drugs are said to be available throughout the rural areas, with subsidies from the brigade or the enterprise. The situation is remarkably different from that prevalent in India.

It is equally important to note the improvement in the level of rural nutrition, which is reflected in the reported low incidence of 'low birth-weight births'. In 1981 only 6 per cent of the Chinese births were in this category, while the corresponding estimates for North America, Europe and the USSR were 7 or 8 per cent.[27]

The experience in India and the rest of the world over the past four decades has confirmed that a policy of controlling deaths is easier to implement than the birth control programme. In retrospect, it is hardly surprising that it should be so. However, the lowering of death rates and elongation of the length of life raises the probability of a child's survival to adulthood and also of his being able to contribute to the care of his parents in their old age. The recognition of these changes, however, may be a function of their speed inasmuch as, in the absence of a fall in the birth rate, the mortality decline determines the pace of rise in the rate of natural increase. The Chinese success in lowering mortality rather speedily could, therefore, have contributed towards an accelerated decline in the birth rate or fertility. To understand the latter process, we turn now to the changes in Chinese birth rates over the past 35-40 years.

FERTILITY

China's crude birth rate, a gross summary index of the level of fertility, has fluctuated over the three-and-a-half decades covered by Table 1. In the early 1950s and the early 1960s, the Chinese birth rate was in the low 40s, not much different from India's. Since then, however, it has steadily declined and during the 1980s it has been between 18 and 21, significantly below India's (33 or higher). These changes in fertility behaviour have been a result of a consious 'planned birth' policy advocating control of family size through both late marriage as well as limitation of births after marriage. Before turning to the details of the policy, let us first review the facts on these two issues.

Age at Marriage and Proportions Married

The mean age at marriage among the Chinese farmers during 1929-31 has been estimated at 17.5 years.[27a] It rose to 18.2 years in 1940, an average of 18.5

years for the decades of the 1940s and 18.7 years for 1950. The revolutionary government set a legal minimum marriage age of 18 years for girls (and 20 years for boys) and the changes in social organisation introduced by it seem to have helped to eliminate early marriage. The percentage of women married before reaching the age 18 has declined from nearly 43 in 1953 to 24 around 1965 and further to 4 by early 1982.[28]

After 1971, the rise in age at marriage has been particularly sharp. The prescribed norm has been 5 to 6 years later than the legal minimum, 23 years for girls in rural areas and 24 for their urban sisters.[29] It was implemented through a rule requiring permission to marry to be obtained from the administrative head of the work units of the bride and groom. The first key component of the official policy of 'later marriage, longer birth intervals and fewer children' (*Wan, Xi, Shao* or Later, Longer and Fewer) was made quite effective. The proportion of the ever-married among rural Chinese women had halved from 87.4 per cent in 1956 to 43.6 in 1979. Yet marriage remains universal, with less than 1 per cent of women remaining 'never-married' at ages above 30.[30]

Quite apart from the norms, a new marriage law passed in 1980 raised the legal minimum age of marriage from 18 to 20. It was associated with some relaxation of the pressures on late marriage because of the social problems created by it. The resulting marriage boom led to a lowering of the mean age at marriage of girls from 23.1 years in 1979 to 22.7 years in the first half of 1982.

The Chinese success in raising the marriage age is partly due to the efficacy of the government in convincing the people about the importance of modulating their activities according to what it believes to be in the national interest. Presumably, the secular forces also would have led to the same direction; but the pace of change would have been slower and the mean marriage age would have been lower than what has been observed. To put the Chinese marriage age in a comparative perspective, the mean age at marriage of Indian girls in 1981 was estimated to be no higher than 18.3 years (17.7 years in rural areas and 20.1 in urban areas). The corresponding figures for males were 23.3, 22.6 and 25.1 years, respectively.[31] The proportion of 'ever-married' girls in the age group of 15-19 and 20-24 was 44 and 90 per cent, respectively.

The rising age at marriage and the associated delaying of child bearing in China accounted for about one-third of the decline between 1970 and 1980 in the total fertility rate or the average number of children that would be born to a cohort of women up to the end of their reproductive period, i.e., up to age 50.[32]

Fertility Rates by Age and Marriage Duration

The Chinese fertility rates by age and by duration of marriage have recently been estimated on the basis of the 1 per 1,000 sample fertility survey conducted during September 1982. The number of persons interviewed

Table 3

CHANGES IN CHINESE FERTILITY RATES BETWEEN 1964-66 AND 1980-82

Age/Marriage duration (years)	*1964-1966*			*1980–1982*			*Percentage change between 1964-1966 and 1980-1982*		
	China	*Urban areas*	*Rural areas*	*China*	*Urban areas*	*Rural areas*	*China*	*Urban areas*	*Rural areas*
Age Specific Fertility Rates									
15-19	0.056	0.023	0.062	0.013	0.002	0.014	-76.8	-91.3	-77.4
20-24	0.291	0.197	0.310	0.179	0.067	0.206	-38.5	-66.0	-33.5
25-29	0.310	0.233	0.330	0.206	0.171	0.213	-33.5	-26.6	-35.5
30-34	0.261	0.153	0.288	0.068	0.034	0.075	-73.9	-77.8	-74.0
35-39	0.195	0.096	0.217	0.029	0.004	0.034	-85.1	-95.8	-84.3
40-44	0.097	0.045	0.107	0.012	N	0.015	-87.6	-99.3	-86.0
45-49	0.013	0.007	0.014	0.003	N	0.003	-76.9	-95.7	-78.6
Total fertility rate	6.118	3.765	6.642	2.549	1.390	2.803	-58.3	-63.1	-57.8
Fertility Rates by Marriage Duration									
0-4	0.342	0.329	0.344	0.333	0.265	0.348	- 2.6	-19.5	+ 1.2
5-9	0.319	0.231	0.340	0.151	0.035	0.169	-52.7	-84.8	-50.3
10-14	0.273	0.152	0.301	0.065	0.006	0.074	-76.2	-96.1	-75.4
15-19	0.215	0.105	0.238	0.033	0.002	0.038	-84.7	-98.1	-84.0
20-24	0.136	0.057	0.152	0.015	N	0.019	-89.0	-99.5	-87.5
25-29	0.048	0.020	0.053	0.005	N	0.006	-89.6	-98.5	-88.7
30+	0.009	0.002	0.010	0.001	—	0.001	-88.9	-100.0	-90.0
Total fertility rate	6.717	4.474	7.190	3.019	1.544	3.274	-55.1	-65.5	-54.5

Note: Less than 0.5 per 1,000

Source: Ansley J. Coale and Chen Sheng Li, *Basic Data on Fertility in the Provinces of China, 1940-1982*, Paper Number 104 of the East-West Population Institute, East-West Center Honolulu, Hawaii, January 1987, pp. 24-29, 190-195.

exceeded one million. The data are considered unusually accurate for such a large survey.[33] The marriage and fertility histories were collected from 310,485 women aged 15 to 67 years in the household. Because of the upper age limit, the fertility data for all age intervals up to age 50 are available from 1964 onwards.[34]

On the basis of these data, Table 3 shows the age-specific fertility rates for the age group 15-49 by 5 years of age for 1964-66 and for 1980-82, separately by rural-urban residence. Figure II presents these data in a graphical form. The sharp decline in fertility are evident in ages 15-19 and 30 and over. The decline has been sharper in urban areas than in rural areas. Urban fertility has become more sharply concentrated in the age group 25-29 than the rural, which shows almost similar incidence of child-bearing over the age-interval 20-29. Child-bearing before age 20 has virtually disappeared all over China. Fertility decline is greater in urban areas than in rural areas; the rural-urban difference in the total fertility rate has widened over the years covered by our data.

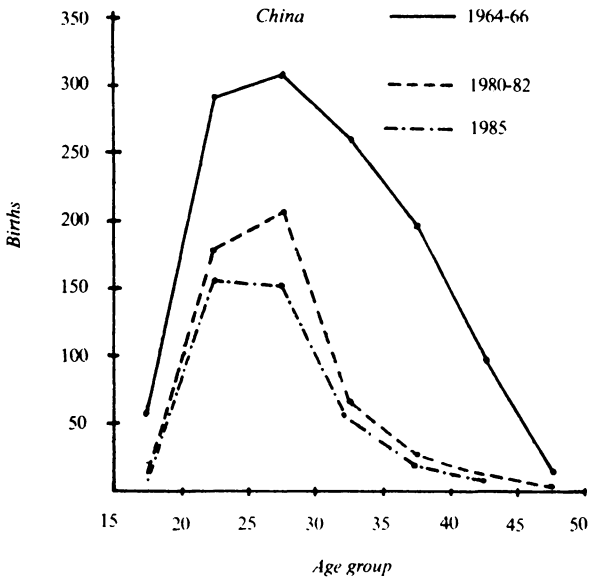
The second half of Table 3 and Figure III present data on child-bearing by duration of marriage or the number of elapsed years since marriage. The fertility rates have declined sharply for all durations of marriage beyond the first 5 years. In urban China, fertility during the first 5 years of marriage has declined by about 20 per cent. The corresponding figure for rural China is best interpreted as showing no decline rather than a small increase. In urban China, nearly 86 per cent of the children born in 1980-82 were born within 5 years after marriage; the corresponding percentage for rural China was 53.

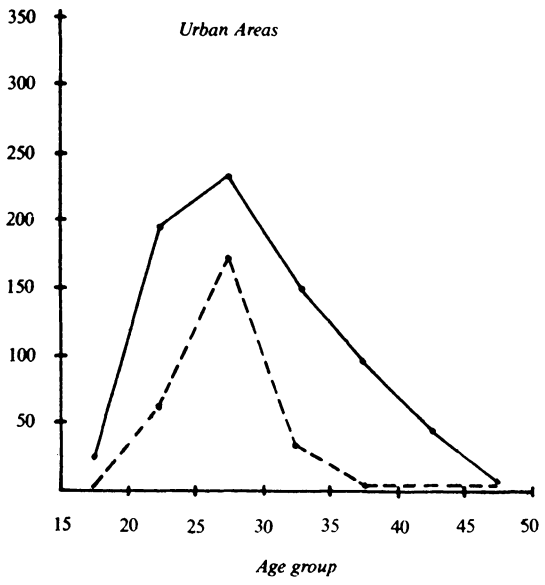
A sample survey of population change, conducted during 1985, suggests further decline in fertility rates in the prime child-bearing ages 20-29.[35] Its results are also shown in Figure II for China as a whole. The surveys in developing countries are by and large notoriously prone to underestimate the level of fertility (and even more, of mortality). But the high quality of the Chinese census of 1982 and the 1 per 1,000 survey inspire some confidence that the 1985 survey might not suffer from any serious bias, and the decline in total fertility rate from 2.5 in 1980-82 to 2.0 in 1985 is likely to be real. If so, the fertility level seems to have reached below the replacement level; the net reproduction rate has fallen below 1.0. It is not reflected, however, in the crude birth rates shown in Table 1 because of the age composition of the population and the entry into reproductive ages and marriages of the survivors of the large cohorts of children born during the 1960s (after the famine and the associated crisis).

Unfortunately, the available data for 1985 are of a limited nature. The data presented in Table 3, however, suggest a dramatic fall in the total fertility rate from 6.1 to 2.5 between 1965 and 1982 (mid-years of the two triennia). The pace of change is unprecedented.

Figure II

CHINA : AGE-SPECIFIC FERTILITY RATES (BIRTHS PER 1,000 WOMEN) BY RURAL-URBAN RESIDENCE 1964-66, 1980-82 AND 1985





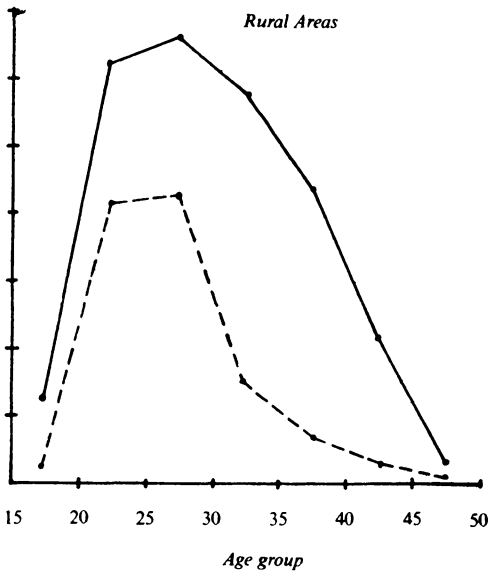
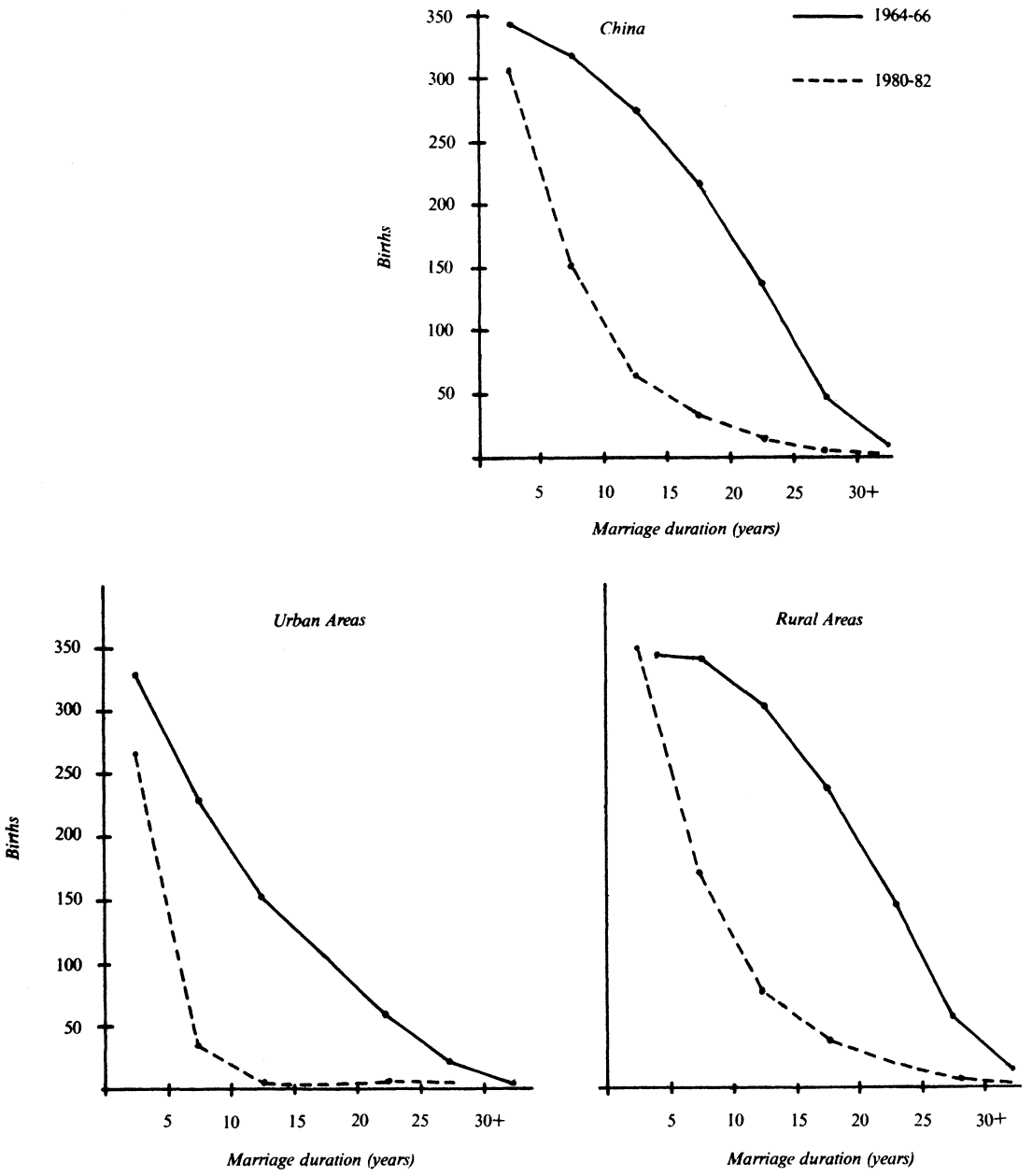


Figure III

CHINA: FERTILITY RATES (BIRTHS PER 1,000 WOMEN) BY DURATION OF MARRIAGE AND RURAL-URBAN RESIDENCE 1964-66 AND 1980-82



Contraceptive Practice

The sharp decline in fertility has been achieved through increasing practice of contraception by married couples. According to the 1 per 1,000 sample survey of 1982, the percentage of married women in reproductive ages 15-49 practicing contraception was 69.5 (about 74 in urban areas and 69 in rural areas). As shown in Table 4, almost 93 per cent of these contraceptors used modern effective methods such as sterilisation, IUD or the oral pills. Both IUDs and sterilisation were more common in rural areas than in urban. The IUD used in China is a modified Ota ring made of stainless steel, which cannot be removed by the woman herself. IUDs cannot also be removed without authorisation from the appropriate birth-planning official. Among types of sterilisation, tubectomies are more numerous than vasectomies, with the difference particularly marked in urban China.

Table 4

CHINA : DISTRIBUTION OF MARRIED WOMEN IN REPRODUCTIVE AGES USING CONTRACEPTION BY METHOD USED BY THEM, 1982

Method of contraception	*Total country*	*Urban areas*	*Rural areas*
Users of contraceptives as per cent of all married women aged 15-49	70	74	69
Method-mix			
All methods	100	100	100
Sterilisation	35	23	38
Tubectomy	25	20	26
Vasectomy	10	3	12
IUD	50	39	53
Oral pills	8	19	6
Condoms	2	10	1
Other	4	9	3

Source : Qian Xiuzhong and Xiao Zhengyu, 'An Analysis of the One in One Thousand Sample Survey of Fertility', Beijing Economics College, Institute of Population, Beijing, July 1983. Cited by Pi-Chao Chen, 'Birth Control Methods and Organisation in China', in Elizabeth Croll *et al.* (eds.), *China's One-Child Family Policy*, St. Martin's Press, New York, 1985, pp. 135-148.

The Chinese level of contraception is comparable to that in the USA (68 per cent), Canada (73 per cent), Japan (69 per cent), Taiwan (65 per cent), countries each of which is more urbanised and industrialised than China.[36] In India, in contrast, at the end of March 1982, only about 24 per cent of the eligible couples aged 15-44 were estimated to be 'effectively' protected against the risk of conception. If we overlook the effectiveness rates of different methods by which the number of acceptors are weighted to arrive at the estimate for India, the Indian contraceptive practice rate would rise to about 26 per cent, lower by 40 per cent of the Chinese level.

India takes some legitimate pride for having been the first country in the world to provide, in 1952, official support for the limitation of births by its citizens; also, despite the setback of the post-Emergency years (1977-79), it has more or less steadily pursued this policy. In other words, the Indian policy has been sharply at variance with the ups and downs that the Chinese family limitation programme has experienced. Yet the Chinese have succeeded in lowering their fertility at a pace vastly superior to that attained in India.

LANDMARKS IN CHINA'S POPULATION POLICY

The more detailed annual data on fertility by age and marriage duration show a rise in Chinese fertility in the early 1950s, a sharp decline during the crisis years of 1958-61, a rebound to the earlier levels during 1962-64 and then a steady downward trend, particularly after 1970.

These shifts in Chinese fertility trends closely paralleled some of the turns in Chinese population policy. After the 1953 census data became available, an official birth control campaign was started. The health departments were directed to help the public with contraceptive measures and restrictions on induced abortion were relaxed. At a forum on birth control, convened in December 1954, Liu Shaoqui declared the support of birth control by the Communist party. A similar approach was adopted by Premier Zhou Enlai in his report on the proposals for the Second Five-Year Plan at the Eighth National Congress of the party in September 1956 and by Chairman Mao Zedong at the enlarged Third Plenary Session of the party's Eighth Central Committee in 1957. The manufacture of contraceptives for external use was begun in 1955.[37]

The population policy was reversed in 1958 when the communes began to be set up and the Great Leap Forward was aimed at. According to what is now described as the 'leftist' population theory, a large population was once again seen to be advantageous. After the famine of 1959-61, the propaganda to limit family size was resumed. It was interrupted once again in 1966 when the Cultural Revolution began.

The third family planning campaign was launched in 1971, with an emphasis on late marriage (later than the legally prescribed minimum age), longer intervals between children, and fewer children in all. Known as the 'planned birth' policy, it was implemented through the remarkably detailed and decentralised organisational network that only China can command. This campaign was successful in lowering China's birth rate from 37 in 1970 to 21 in 1978 (by about 43 per cent) and in halving the rate of natural increase from 2.8 to 1.4 per cent over the same eight-year period.[38]

However, the Chinese leaders were not satisifed with this achievement. They launched a campaign for a one-child family to ensure that China's population would not exceed 1,200 million in A.D. 2000. In a report to the First Session of the Fifth National People's Congress, in Feb-

ruary 1978, Chairman Hua Kuofeng made only a passing reference to family planning but asserted that China must 'strive to lower the annual rate of growth of China's population to less than one per cent in three years'. Article 53 of China's Constitution enacted in the same year stated, *inter alia*, that 'The State advocates and encourages family planning.'[39]

Writing in August 1979, Vice-Premier Chen Muhua proposed the goal of a rate of natural increase of 5 per 1,000 by 1985 and zero by 2000 (from 12 per 1,000 in 1978).[40] A preliminary draft of a birth planning law aimed at encouraging the one-child family had been circulated earlier in 1979 and a final law was expected to be issued later during the year. By August 1979, at least nine provinces had begun trial economic measures to encourage the one child family. The Vice-Premier advocated measures to fight the so-called son-preference, including the provision of 'five guarantees' (food, clothing, shelter, medical care and decent burial) by the collective units to the childless[41] and also a pattern of grooms settling in the bride's home.

China's Marriage Law of 1980 prescribed that 'husband and wife are duty bound to practise family planning' (Article 12), and that 'late marriage and late childbirth should be encouraged' (Article 5). Article 15 of the law affirmed that 'parents have the duty to rear and educate their children' and that 'children have the duty to support and assist their parents'.[42]

A continued emphasis on the duty of children towards their parents reflects the pragmatism of the Chinese leaders. The underlying concern for limiting the responsibility of the government with respect to the difficult task of setting up an old-age social security system seems remarkably realistic.

While announcing the one-child policy to the National People's Congress in 1980, the government had stated that 'upon careful study', the State Council deemed it necessary to launch a crash programme over the coming 20 to 30 years calling on each couple, except those in minority areas, to have a single child', to bring the rate of population growth under control and to limit the population to a maximum of 1,200 million by the turn of the century.[43]

The point that the single-child family policy is a temporary policy is made repeatedly. A short brochure entitled 'Family Planning in Shanghai', distributed by the Shanghai Municipal Administration, asserts that 'China now encourages every couple to have only one child, which is a special policy for a particular period. When population growth keeps pace with the development of economy, this policy will be gradually readjusted on a more reasonable basis.'[44]

The one-child policy is often considered a means of mitigating the possible rise in the birth rate during the 1980s when the survivors of the large birth cohorts of 1960s would enter the reproductive period, marry, and have children. However, the duration for which the policy is

advocated is seldom made clear. It is considered vital for China's Four Modernisations (of agriculture, industry, national defence and science and technology), and for raising the standard of living of the people. The law of 'planned and proportionate development' is said to require that 'not only ....the production of material means ...but also ...human reproduction develop in a planned way'.[45] According to Article 25 of China's fourth Constitution, adopted and promulgated in 1982, China 'pursues a policy of family planning in order to adapt the pace of population increase to the nation's social and economic development'.[46]

Some Chinese scholars have elucidated the rationale of the one-child policy on the basis of population projections. Song Jian, Vice-President of the China Demographic Society, reported in 1981 that since 1980, several natural and social scientists had joined to determine the desirable population size for China. Taking into account economic development, natural resources, food requirements, ecological balance and fresh water resources, they had concluded that the desired population for China 100 years from now, i.e., by about 2080 should be between 650 and 700 million. Alternative paths to this goal were worked out; essentially they involved differences in the pace of decline in the total fertility rate (1.0 vs. 1.7 by 1985 or 1.5 by 1990) and in the timing of the subsequent rise in fertility to the replacement level (during 2000-20 or 2045-55 to 2025-40). The first alternative of lowering total fertility rate to 1.0 by 1985 and subsequent rise in it to the replacement level during 2000-20 led to the desired population of 700 million by 2070, much ahead of the other paths, and was therefore considered the ideal programme'.

The one-child policy has been promoted through economic incentives and disincentives. While the details seem to vary according to local regulations, the benefits offered include monetary bonuses (usually 5 yuan per month until the child becomes 14 to 16 years of age), preferential housing assignments, priority in the allocation of private plots, and special consideration for the child in education and job assignments. In some areas, a single incentive payment has been reported.[48] The single-child benefits are to be repaid if a second child is born. It is not clear whether such is the case if the second birth was approved. However, severe economic sanctions in the form of deductions from income are prescribed for the birth of a third or a higher order child.

Following the adoption of the single-child family policy, the proportion of third or higher order births in China has declined from 50 per cent in 1978 to 27 per cent in 1981 and further to 20 per cent in 1985.[49] As already noted above, the rate of natural increase in 1985 was twice the target announced in 1979. Likewise, the fact that 30 per cent were of third higher order implies that the policy has not been easy to implement. To say this is not to belittle in any way the Chinese achievement in lowering the level of fertility but to recognise the difficulties of social engineering in the area of fertility.

The continued prevalence of son-preference has been one major problem. According to the 1 per 1,000 fertility survey, 37 per cent of all one-child couples in the country had accepted one-child certificates. (The percentage exceeded 75 in predominantly urban municipalities in Tianjin, Shanghai and Beijing). The percentage was 40 among couples having one son and 34 among those having one daughter. In other words, the one child-couples were more likely to have a son than a daughter and therefore 60 per cent of all one-child certificate holders had a son. Further, in spite of the penalties imposed upon the birth of a second child, about 9 per cent of the couples who had received a one-child certificate had renounced it and had a second child by the time of the survey. The percentage of one-child certificate recipients in 1982 who had renounced the certificates by having a second child was significantly higher among those couples whose first child was a daughter (12.7 per cent) than among parents of a son (6.7 per cent).[50]

SHIFTS IN POLICY, 1984-86

A recent review of Chinese population policy suggests that although 'family planning remains mandatory and third children continue to be prohibited', the birth planning programme had become more lenient during 1984-86.[51] After an early period of leniency in the implementation of the one-child family policy, circulars had been issued in December 1982 and early 1983, calling for compulsory IUD insertion for women with one child, abortion for unauthorised pregnancies and sterilisation for couples with two or more children.

Some reviews of the operation of the one-child family policy in rural China cite 'forced abortions and sterilisations frequently reported in the press' as a likely consequence of the bonuses paid to cadres for meeting their targets for family planning.[52] (On one recorded occasion in 1978, militia were employed to try to enforce family planning.[53]) However, the centuries-old son preference was difficult to break. Daughters as well as mothers who gave birth to them were an object of neglect and female infanticide had revived to some extent. Some people illegally removed IUDs, beat family planning workers and ran away to cities to have children, a situation that was 'politically intolerable' as well as 'unanticipated'.[54]

The Chinese leadership responded by issuing in early 1984, a Document 7 that aimed at a family planning strategy that was 'realistic, fair and reasonable to the people, easy for cadres to implement, yet capable of achieving the party's goal of holding the population at 1.2 billion' by A.D. 2000. It emphasised 'regular work in lieu of shock methods, contraception in lieu of abortion and propaganda and education in lieu of economic penalties.'[55] In early 1985, the population goal for A.D. 2000 was changed to 'about 1.2 billion', permitting flexibility in approach. Several conditions were prescribed under which couples could have a second child, including if rural families had only a daughter.

The more recent Document 13 issued during the late spring of 1986, highlights the likely greater difficulty of birth planning work during 1986-90 because of the changes in the age composition of the population. Also, special consideration is shown to underprivileged areas and groups. Following the leadership's call in 1984 to view family planning as a service, birth planning cadres have made assistance in socio-economic and health matters a key feature of their work routines. The administrative capacity of family planning organisations at various levels has also been strengthened by forming a stronger multi-level network of cadres, the establishment of service centres at each administrative level and more systematic record-keeping. Overall, the prospects seem bright that China will be able to keep its total population to a total of 'about 1.2 billion' if the present policy continues. It would be a great achievement with a unique level of conformity by several millions of couples to a goal set by the national leadership. As for the long-term goals, no country except China has seriously considered a substantial decline in its total population to be desirable. Several European countries have adopted policies to reverse the decline in fertility to replacement or lower levels. The past Chinese history suggests a remarkable capacity to shift the direction of social policy. Whether it will happen with respect to population policy, only time will tell.

LESSONS FOR OTHER COUNTRIES

Does the Chinese demographic experience hold any lessons for other developing countries such as India ? The setback received by the Indian family planning programme in the wake of the excessive pressure to push sterilisations during the Emergency years of 1975 and 1976 suggests that a political democracy is unlikely to be able to muster the courage or the strength to emulate the Chinese experiment.

However, to answer the question it is also necessary to identify the factors that have contributed to the success of China's population policy. The factors contributing to the sharp rise in age at marriage and the fall in fertility in China are debatable. One view, evidently a minority view, attributes these changes to 'industrialisation, urbanisation and other forms of modernisation.'[56] While these procesess have indeed contributed to the observed changes, more plausible seems to be the view that the changes have been 'largely the result of direct and forceful government intervention.'[57] Those who hold the latter view attribute the success of the government to 'the great prestige' and the 'good will and confidence of the great majority of the people' enjoyed by the central government in Beijing and to 'the penetration of village society by the national bureaucracy'.[58] The role of the former factor of 'ethnocentric pride', attributed partly to the expulsion of foreigners and the re-establishment of the status of a 'world power' is certainly plausible but difficult to evaluate. The second factor, however, is a strong feature of Chinese society. Not only has the feudal hierarchy been eliminated, but the cadres are able to exercise 'unremitting

social pressure' on individuals who ae left with 'no choice but to comply'.[59]

Pi-Chao Chen, a well-known exponent of China's birth planning system, asserts categorically that the unprecedented and impressive demographic transition in China has occurred 'without a profound socio-economic modernisation or a major improvement in living standards taking place prior to or during the transition period'. He attributes the Chinese fertility decline to 'a determined and successful birth planning programme', with the 'contraceptive delivery system' built into the health delivery system.[60]

One can argue with Chen whether a sharp fall in infant mortality and a rise in life expectancy at birth over the past two decades and more do not constitute a key component of the rise in living standards. However, these gains have been possible because of the large number of health workers (many of them barefoot doctors) who worked in cooperative health stations (or similar bodies) set up for each production brigade.[61] Their contribution to improving maternal and child health presumably enhanced their influence. One of them was a female doctor trained in contraceptive counselling. But her success owed a great deal to the support received by her from the cadres who operate at all levels and help to implement the policies prescribed by the central leadership through effective supervision and exemplary behaviour. The credibility commanded by the leadership because of its success in eliminating the extremes of acute poverty as well as affluence probably facilitated the task of persuading groups of people to abide by the allocations of births. However, the stress and strain involved in the interpersonal trade-offs among couples living in a village or at a similar micro-level must have been enormous.

The egalitarian social framework and the limited opportunities for material advancement might have weakened the incentives for improving the economic status of the household through more children. This hypothesis receives some support from the fact that the production responsibility system, adopted since 1978, has generated pressures for individual families or households to try to maximise their family labour power. The conflict between the individual and social interest has not taken long to manifest. Whether the relaxation of the one-child family policy during the last two or three years will prove adequate is far from certain.

Overall, the Chinese population policy is to check the momentum of population growth (built into the young age distribution), which Ansley Coale has compared with the momentum of a moving railroad train.[62] According to this analogy, the Chinese have been trying now to build a brick wall across the tracks in order to compensate for their failure to apply the brakes earlier. It seems that the Chinese may well succeed in their venture; but India certainly does not have the capacity to emulate them.

The Chinese scholars frequently quote from a letter from Frederick Engels to Karl Kautsky dated February 1, 1881, in which he said : 'If com-

munist society should one day be compelled to regulate the production of human beings, as it regulates the production of goods, then it and it alone will be able to do this without any difficulty'.[63]

It would be futile to debate whether and how far China is a truly communist country in the Marxist perspective. The Chinese leaders claim to be 'advancing along the correct path of building socialism with Chinese characteristics'. The Chinese Seventh Five-Year Plan for 1986-90 envisages 'more consumer goods of greater variety and better design'. Also, the policy is to encourage 'some people to become prosperous sooner than others', to 'strive to do away with the practice of egalitarian distribution and to implement 'the principle of distribution according to work'.[64] As these policies are implemented, the issue of the extent to which the basic structure of incentives in China conforms to deep-rooted human motivations will come to the forefront. The adoption of the contract responsibility system attests to the capacity of the Chinese leadership to be 'practical' or 'pragmatic'. It is not unlikely that the same pragmatism will lead it to abandon the goal of an absolute decline in the size of their population. Meanwhile, the one-child family policy will certainly facilitate a faster pace of economic and social development in terms of not only the material standard of life but also the level of human capital formation. At the same time, some innovative adaptations in the entire fabric of social interaction between individuals and families or households will become imperative as a large majority of Chinese are persuaded to limit their procreation to only one child.

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61. In 1980 an average brigade had a population of about 1,150. See Dwight Perkins and Shahid Yusuf, 1984, p. 93.
62. Ansley J. Coale, 'The Population Trends, Population Policy and Population Studies in China', *Population and Development Review*, Vol. 7, No. 1, March 1981, pp. 75-89.
63. Lue Zheng, 'Population' in Yu Guangyuan, *China's Socialist Modernisation*, Foreign Languages Press, Beijing, 1984, p. 550.
64. Zhao Ziyang, 'Report on the Seventh Five-Year Plan' *The Fourth Session of the Sixth National People's Congress : Main Documents*, Foreign Languages Press, Beijing, 1986, pp. 13, 32-34