The Demographic Situation in China

Y. C. YU

The trend of growth of China's population is of great importance to the world population to-day. In recent years, China has achieved a significant success in regulating the growth and redistribution of her population. The Chinese view the population problem as a maladjustment of the social system. For its solution, they seek to readjust the relationship between various social and economic sectors of society and place great emphasis on the promotion of production and social change as well as on national independence. The growth and redistribution of population were brought under effective regulation after the minimum standard of living of the people had been achieved and maintained. This is an important and valuable experience.

On the other hand, very little is known about the demography of China. Numerous studies have been made to evaluate China's demographic situation, but in few have satisfactory answers been provided. Many writers have estimated the size of total population and a few have made estimates of the levels of fertility and mortality. Some have also constructed theoretical models to study changes in the age and sex composition of the population under given conditions and have projected the future growth of the population. It is from these models that one tries to gain an understanding of the process of change in the population of China.

Nevertheless, the reliability of all these studies is limited because of the lack of basic demographic data. Until comprehensive new information becomes available, any studies on the population of China can only be regarded as exploratory.

In this report we describe the demographic situation in China. We begin by making an inventory of the population statistics that have been available since 1953, including the results of the 1953 Census of Population, population data and vital rates in the 1950s reported by official Chinese sources, and recent demographic information obtained by scholars who visited China. We then summarize major studies of the population made in recent years by authors in various research institutions and demonstrate that the available demographic knowledge which is reasonably certain is limited. One may raise questions about the reliability of the population data after examining their internal consistency and drawing analogies from the experience of other populations, but, without field investigation, all answers to these questions can only be speculative. Consequently, at present any analysis of the population of China can only be based on models, for which differences between model and true values are not precisely known. Finally, a new estimate of the current demographic situation of China on the basis of available information is constructed, presenting the population estimates and vital rates for 1953–78 derived from a series of assumed trends in fertility and mortality during the past 25 years.

I. BASIC POPULATION STATISTICS

The first nationwide census of population ever conducted on the mainland of China by modern methods took place in 1953–54 and some of the census results were released in 1954. In 1957, the State Statistical Bureau published annual population totals for the years 1949 to 1956, based on data from population registration and estimates. Again in 1960, the Bureau provided the total population of each province, autonomous region, and municipality for 1957. During 1967–68, following the establishment of a Revolutionary Committee in each province and autonomous region, the total population of each area rounded to the nearest million was announced in local newspapers and radio broadcasts. In 1972 and in 1974, the population of each province has been given in two atlases published by the Cartographical Institute of China. Since April 1976, total

427

populations rounded to the nearest million for the majority of the provinces have been mentioned in Chinese newspapers on various occasions.

As to other characteristics of the population, limited data on births and deaths in certain regions of the country were available, and on two occasions in 1958 national crude birth and death rates from 1952 to 1956 were made known. More recently, the 1972 national crude death rate was casually mentioned in the Chinese press. In addition, only very crude data on age and sex structure and on urban and rural distributions are available. There are no data on internal and external migration. Since these limited data are the core of all available materials on the demography of China and form the basis of all population estimates for China, a brief description of their nature will be given next.

A. *1953 Census of Population*

The 1953 Census of Population was a *de jure* census,[1] taken in conjunction with the national election of representatives to the First People's Congress, which began in late 1953. The census date was fixed as the 24th hour on 30 June 1953. There were two types of census schedules: the ordinary household schedule and the institutional schedule. There were only five questions on the census schedule: (1) name and address; (2) relation to the head of the family; (3) sex; (4) age; and (5) nationality. For the most part, the head of the household or some responsible member of the family had to call at a registration office and furnish the necessary details to census officials. Only in certain areas and in certain special conditions where the household head could not come to the registration office did an enumerator call at the house. Details of the census procedures were given in the 'Measures for National Census and Registration' published by the State Council on 3 April 1953.[2] Persons who participated in the census work exceeded 2.5 million. The completion of the census took a little more than a year.

On 1 November 1954, the State Statistical Bureau announced the census results and reported the population of China on 30 June 1953 to be 601,938,035 persons.[3] Excluding Chinese resident overseas, the total came to 590,194,715. Of this number, 574,205,940 persons had been directly registered and enumerated, and the remaining numbers had been estimated. No detailed age and sex composition of the population was published except the following. Among those who were directly registered and enumerated, 297,553,518 persons or 51.8 per cent of the total population were males, and 276,652,422 or 48.2 per cent, were females. Those aged 18 years and over numbered 338,339,892 or 58.9 per cent of the total and among them, persons aged 80–99 came to 1,851,312 and those aged 100 and over to 3,384. There were 77,257,282 persons, or 13.3 per cent living in urban areas and the rest, 505,346,135 persons or 86.7 per cent lived in rural areas. There were eleven nationalities with populations of at least one million persons, among them the Hans, numbering 547,283,057 persons, composed 93.9 per cent of the total population.

A sample survey covering 53 million persons or nine per cent of all those directly investigated showed that 0.14 per cent of the population had been counted more than once and 0.26 per cent had been omitted, which leaves a net omission of 0.12 per cent.[4] In addition to the above, the population for each province and autonomous region was also given in the census.

This is all the information available from the census communique. Along with the announce-

[1] *Chung-hua-jen-min-kung-ho-kuo kuo-chia-tung-chi-chu kuan-yu chuan-kuo jen-kou-tiao-cha-teng-chi chieh-kuo-te kung-pao, 1954. 11.1* (Communique issued by the State Statistical Bureau of the People's Republic of China concerning the result of the national population census and registration, 1 November 1954), *Jen-min Jih-pao* (People's Daily) (Peking, 1 November 1954), p. 1. This source will hereafter be referred to as the '1953 census communique'.

[2] *Chuan-kuo jen-kuo-tiao-cha-teng-chi pan-fa*, contained in *1955 Jen-min Shou-tse* (The 1955 People's Handbook), (Tientsin: Ta-kung-pao), pp. 25–28.

[3] ('The 1953 census communique'), *op. cit.*

[4] *ibid.*

ment of the census result, the Census Director, Pai Chien-hua, stated that among the 574 million directly enumerated, children aged 0–4 composed 15.6 per cent of the total and their sex ratio was about evenly balanced, those aged 5–9 composed 11 per cent of the total and there were many more boys than girls. Pai also reported that in 1953 the birth rate was 37 per 1,000, the death rate was 17 per 1,000, according to a survey of more than 30 million population.[5]

The State Statistical Bureau published in 1958 a book entitled *The 1953 Population Census Materials of the People's Republic of China* which contains all census directives, enumeration procedures, evaluation of census results and detailed census figures at the *hsien* level.[6] But this book seems not to be available outside China. A few years after the census, more detailed age distribution and sex ratios were made known from research papers written by Chinese demographers.

In the discussion of the census work and results, Tai Shih-kuang[7] explained that the concept of *de jure* population was adopted because of the strong feeling of the traditional Chinese family ties which made it necessary to ask each household to report all members of the family, regardless of their residence at the time of the census. He felt that the census work was highly efficient and had much educational value but had been carried on for too long, and that not enough attention had been given to the technical aspects of the statistical work, no sufficient checks at the processing stage, etc. Chen Ta[8] also feels that the census results were quite trustworthy because of the adoption of modern scientific techniques and the people's eagerness to co-operate. However, the lack of census experience, the short period of preparatory work, long period of field work, errors of reporting by family heads, difficulties in the compilation and tabulation stages, and the inadequacy of the three-stage reporting system constituted shortcomings.

But Pi Shih-lin[9] defended the scientific nature of the 1953 Census and claimed that the census had been carried out under a unified organization and leadership, had well-defined time reference points and had made use of standardized census schedules. The census returns, according to Pi, showed that there was little sign of digital preference in the age distribution. Li Chin-ke[10] also asserted that the age distribution of the census as tested by the Whipple Index was highly accurate. For the nation as a whole, the index was 102.5. While there was some misreporting of ages 0 and 1, no serious age preferences were detected for other ages. Li also refuted the claims made by Chen Ta on the adequacy of the method of data compilation and the three-stage reporting system, stating that Chen had failed to consider the size of China's population and social condition of China and had used criteria based on his own experience with sample surveys in small regions to assess the work of a nation-wide census.

There are also other works prepared outside China in which census results and procedures were reported and the census work evaluated. S. Chandrasekhar in his book[11] gives a fairly comprehensive description of the census procedures, census organization, census methods etc., and the book contains the entire 18 articles on the 'Measures for National Census and Registration'. He asserts that the 1953 Census was a scientific one and had been well publicized. Because of the

[5] Pai Chien-hua, 'Liu-wan-wan-jen–Wo-kuo she-hui-chu-yi-te wei-ta-li-liang' (Six hundred million people–a great strength for Socialist construction of our country), *Jen-min Jih-pao* (Peking, 1 November 1954), p. 3.

[6] The publication of this book by the State Statistical Bureau was announced in *Tung-chi Yen-chiu* (Statistical Research) (Peking), No. 2 (1958), p. 30.

[7] Tai Shih-kuang, *1953 Population Census of China* (Calcutta: Indian Statistical Institute), Anniversary Lecture Series (20 December 1956) (mimeographed).

[8] Chen Ta, 'New China's population census of 1953 and its relations to national reconstruction and demographic research', *Bulletin de l'institut international de statistique* (Stockholm), 36, 2 (1958), pp. 255–271.

[9] Pi Shin-lin, 'Wo-kuo 1953-nien-te jen-kou-tiao-cha shih ke-hsieh-te' (The 1953 population census of our country is scientific), *Tung-chi Kung-tso* (Peking) No. 24 (1957).

[10] Li Chin-ke, 'Wo-kuo 1953 nien jen-kou-pu-cha-te wei-ta cheng-chiu pu-yung-mo-sa' (The great achievement of the 1953 population census of our country should not be obscured), *Tung-chi Yen-chiu* (Peking), No. 3 (23 March 1958), pp. 3–10.

[11] S. Chandrasekhar, *China's Population, Census and Vital Statistics,* Hong Kong: Hong Kong University Press, 1961.

lengthy enumeration period and the problem of intervening migration, some confusion and dupli-
cation could not be avoided. There were no experimental or pilot surveys for different parts of the
country, beyond a brief and localized trial run.

S. K. Krotevich's paper[12] gives a brief description of the census. He reported that the field
work which was completed by the end of April 1954 was only one month behind the deadline. In
addition to discussing the census procedures, the *de jure* population, the age counting system, etc.,
he reported that the census tracts were drawn up in such a manner that each tract corrresponded
to one voting district in rural areas and that one voting district contained three to five tracts in
urban areas. The selection of the 2.5 million field workers was made in accordance with the criter-
ion that in rural areas one field worker would be chosen from every 10 to 20 households.

Taeuber and Wang[13] found that there were great similarities between the 1953 census figures
and the population figures of 1928 and 1850 at the provincial level and also a close resemblance
between the final census figures of many provinces and those figures that were published when
only 29 per cent of the census had been completed. They felt that there has never been either a
field enumeration or a controlled registration of the population of all China. On the other hand,
John Aird[14] believed that the 1953 Census had seriously undercounted the population by as much
as five to 15 per cent. The very high sex ratio and its irregular age pattern suggested that the omis-
sion of females had been enormous. However, Perkins[15] feels that a high undercount rate, such as
15 per cent, suggested by Aird 'would imply that the census takers missed two persons in every
three families' and suggests a confidence interval of 568 to 598 million to give an 80 per cent
chance that the true figures are included. But Orleans[16] accepted the 1953 Census total because
'there is no empirical basis on which to reject or to adjust the reported 1953 population'.

The above represents only a selected group of comments concerned with the evaluation of
the 1953 Census. Yet they clearly reflect the great importance of the census and the need to
understand the demography of China.

B. *Population Statistics for 1949 to 1957*

It was in June 1957 that the State Statistical Bureau published annual population figures for the
total, urban, and rural population for 1949 to 1956.[17] The figures for 1949 to 1952 were derived
from the estimated rates of population increase of past years, those for 1953 from the 1953 Census,
and those for 1954 to 1956 were partly compiled from the annual population reports sent to the
Bureau from each local government area and partly estimated (Table 1). Again in 1960, the Bureau
published population totals for the whole country for 1949, 1953 and 1957 and for each province,
autonomous region, municipality, and each city with over 500,000 inhabitants in 1957.[18] Although
no details on the method of compiling the 1957 figures were disclosed, they had presumably been
obtained in the same manner as those for 1954-56.

According to the latter figures the population of China, excluding overseas Chinese, was
548,770,000, 595,550,000 and 656,630,000 at the end of the years of 1949, 1953 and 1957

[12] S. K. Krotevich, 'Vsekitayskaya perepis naseleniya 1953 g' (The All-China Population Census of 1953),
Poslevoyenniye Perepisi Naseleniya (Post-war Population Censuses) (Moscow: Gosstatizdat, 1957).
[13] Irene Taeuber and Wang Nai-chi, 'Questions on population growth in China', *Population Trends in Eastern
Europe, the USSR, and Mainland China* (New York: Milbank Memorial Fund, 1960), pp. 263–301.
[14] U.S. Bureau of the Census, *The Size, Composition and Growth of the Population of Mainland China*, by
John S. Aird, International Population Statistics Reports, Series P-90, No. 15 (Washington, D.C.: U.S. Govern-
ment Printing Office, 1961).
[15] Dwight H. Perkins, *Agricultural Development in China, 1368–1968* (Chicago: Aldine Publishing Co., 1969),
p. 201.
[16] Leo Orleans, 'Propheteering: The population of Communist China', *Current Scene* (Hong Kong), 7, 24
(1969), pp. 13–19.
[17] '1949–1956 nien wo-kuo jen-kou-tung-chi chih-liao' (Data on Population statistics of our country, 1949–
1956), *Tung-chi Kung-tso* (Peking), No. 11 (14 June 1957), p. 24.
[18] China, State Statistical Bureau, *Ten Great Years* (Peking: Foreign Language Press, 1960), pp. 8–13.

Table 1. *Total population and proportion urban, China, 1949-57 (population in thousand persons)*

Year-end	Census	SSB-I†	SSB-II Total	Proportion urban
1949		548,770	562,520	10.6
1950			573,180	11.2
1951			584,330	11.8
1952			596,150	12.5
1953	601,938*	595,550	609,290	13.2
1954			624,480	13.6
1955			638.630	13.5
1956			652,300	14.2
1957		656,630	—	—

Sources: ('The 1953 census communique'), *Jen-min Jih-pao* (Peking, 1 November 1954), p. 1; SSB-1–State Statistical Bureau, *Ten Great Years* (Peking: The Foreign Language Press, 1960), p. 8; SSB-II–('Data on population statistics of our country, 1949-1956'), *Tung-chi Kung-tso* (Peking), No. 11 (14 June 1957), p. 24.

* As of 30 June 1953. This figure includes the population of overseas Chinese and students abroad.

† Excluding Chinese living in Hong Kong, Macao and abroad.

respectively. The annual rate of population increase implied for 1949-53 was 2.1 per cent and for 1953-57, 2.5 per cent. According to the earlier figures, the urban population composed only 10.6 per cent of the total in 1949. By the end of 1956, it had increased to 14.2 per cent. The annual rates of increase of the urban population were 7.4 per cent during 1949-53 and 4.6 per cent during 1953-56. The rates of increase of the rural population were slower, namely 1.3 and 1.8 per cent for the same periods.[19]

The system of population registration from which the above population figures were said to have been derived was established when a temporary regulation concerning urban population was promulgated on 16 July 1951 by the Ministry of Public Security. Experimental registration in rural areas is also known to have taken place during the early part of the 1950s.[20] But it was the work in the 1953 Census that laid the foundation for the establishment of a nation-wide population registration system which took definite shape in June 1955 when the State Council issued a directive concerning the establishment of the regular household registration system.[21] According to that directive, the Ministry of the Interior and the Civil Affairs Department of the People's Council above the *hsien* level were responsible for the administration of the household registration system and the public security offices in cities and towns and the People's Council at the *hsiang* and *cheng* levels were responsible for the recording of registration data. Statistics of registration were to be sent to the *hsien* administrative unit from local registration offices each year, and from *hsien* they were to go to the provinces and to the Ministry of the Interior. The registration was to include such items as *de jure* population, births, deaths, in-migration, out-migration, changes in marital status, etc.

On 9 January 1958, the Population and Household Registration Regulation of the People's Republic of China was enacted.[22] This regulation transferred administrative responsibility for registration from the Ministry of the Interior to the Ministry of Public Security. In view of the fact

[19] ('Data on population statistics of our country, 1949-1956'), *op. cit.* in footnote 17.

[20] Chen Ta, *op. cit.* in footnote 8, pp. 255-271.

[21] China, State Council, 'Kuo-wu-yuan kuan-yu chien-li chin-chang-te hu-kou-teng-chi chih-tu-te chih-shih, (1955.6.22)' (The directive concerning the establishment of a regular household registration system, 22 June 1955), in *1956 Jen-min Shou-tse* (The 1956 People's Handbook) (Tien tsin: Ta-kung-pao, 1956), p. 830.

[22] 'Chung-hua-jen-min-kung-ho-kou hu-kou-ten-chi tiao-li', in *Jen-min Jih-pao* (Peking, 10 January 1958).

that vital registration was about to be completed in 1958,[23] it is conceivable that a nation-wide household registration system has been established, although no population statistics have been published since 1960.

In June and November of 1958, two demographers, Roland Pressat of France and S. Chandrasekhar of India, visited China and obtained some information on the level of fertility and mortality from the State Statistical Bureau (Table 2). They both reported that the birth rate was 37 per 1,000 and the death rate was 17 per 1,000 in 1952, 37 and 13 in 1954, and 34 and 11 in 1957 so that the rates of natural increase were 20, 24, and 23 in those three years.[24] Other information they obtained included infant mortality rates for urban and rural areas between 1954 and 1957, and for nine large cities from 1952 to 1956, and birth and death rates for the same cities from 1952 to 1956.[25] These rates are thought to be estimates based on either sample surveys or

Table 2. *Birth rates, death rates, rates of natural increase and infant mortality rates of China, 1952-57 and 1972*

Year	Birth rate*	Death rate*	Rate of natural increase*	Infant mortality rate†	
				Urban	Rural
1952	37	18	19	–	–
1953	37	17	20	–	–
1954	38	13	24	47	138.5
1955	35	12.4	22.6	42	109.7
1956	32	11.4	20.6	35	–
1957	34	11	23	32	–
1972	–	7.6	–	–	–

Sources: S. Chandrasekhar, *China's Population and Vital Statistics* (Hong Kong: Hong Kong University Press, 1959), pp. 53–54, Roland Pressat, 'La population de la Chine et son économie', *Population* (Paris), **13**, 4 (October–December 1958), pp. 572–573, and 'China pays attention to environmental hygiene', *News from Hsinhua News Agency, China* (London, 24 September 1973), pp. 14–15.
* Per 1,000 population.
† Per 1,000 live births.

incomplete registrations since the household registration system had not become fully established over the whole country before 1957. Officials of the Statistical Bureau asserted that the nation-wide registration was nearly complete at the time of Chandrasekhar's visit (December 1958),[26] but no other information on vital statistics for the country as a whole has been disclosed between 1958 and 1972.

C. The '1964 Population Survey'

It has been reported unofficially by observers that in the summer of 1964 a nation-wide population survey was conducted in China.[27] Very little information was obtained regarding the nature

[23] S. Chandrasekhar, *op. cit.* in footnote 11, p. 52.
[24] *Ibid.*, p. 53; Roland Pressat, 'La population de la Chine et son économie', *Population* (Paris), **13**, 4 (October–December 1958), p. 570.
[25] Roland Pressat, *ibid.*, pp. 572–573 and S. Chandrasekhar, *op. cit.* in footnote 11, pp. 52–57.
[26] S. Chandrasekhar, *op. cit.* in footnote 11, p. 52.
[27] Tsia Ping-wen, 'Chung-kuo ta-lu jen-kou-wen-ti chih yen-hsi' (A Study of the population problems on the Chinese mainland), *Studies in Chinese Communism* (Taipei), **11**, 9 (September 1964), pp. 7–9; Lin Chen, 'A

and scale of the survey, and some writers have claimed that it was a census of population. Unlike the 1953 Census, however, there were no public announcements of any kind of such an undertaking from the Chinese Government and no results were released. Some writers reported that the Chinese Communist Party Central Committee and the State Council had jointly issued 'The Directive on the Conduct of a Nation-wide Census of Population and Household' to party and administration units of all levels in every province, autonomous region, and municipality,[28] although no details of such a directive have been ascertained. There were also people who claimed to have participated in the census.[29] Yet others suggested that the survey was a kind of local population check, perhaps similar to that conducted in the cities in the early 1950s.[30] One cannot assess the scale of that investigation, nor whether similar surveys had taken place in other years. The late Premier Chou En-lai was quoted to have said in 1972 that it has been almost six years since household surveys had been conducted.[31] Since there was no information regarding a 1966 survey it is not clear whether he was also referring to the reported 1964 survey. The lack of confirmation about any such surveys from the Chinese government has left many questions about this survey unanswered.

D. *The 1967–68 Population Figures*

No population data have been published by the State Statistical Bureau since 1960. It was not until the establishment of the revolutionary committees in all provinces, autonomous regions and municipalities in 1967–68 that population totals for these administrative units were cited in the committee's communiques and reports and announced either in newspapers or over radio broadcasts (Table 3). Persons interested in the population of China began to collect and piece these bits of information together to derive a population total.[32]

Not all the population data collected in this manner give the same total for the whole country; they range from 705 to 713 million.[33] The new figures represent an increase of population between 9.0 and 10.3 per cent over the population total for the end of 1957 given by the State Statistical Bureau, depending upon which new total is used.

Since these figures have no reference dates, some writers suggested that they were the results of the 1964 survey while others thought that they related to 1967–68, the period just before the establishment of the revolutionary committees in most provinces. The annual rate of increase of the population from the end of 1957 would then be either 1.32 to 1.50 per cent, using mid-1964

Study of the Chinese mainland population *Issues and Studies* (Taipei), 5, 2 (November 1968), pp. 19–20; Huang Yu-chuan, 'Ta-lu jen-kou-te hsin-shu-tzu' (Latest figures on population of Mainland China), *Tsu-kuo* (China Monthly) (Hong Kong, November 1968), p. 13.

[28] Tsia Ping-wen, *ibid.*

[29] Hsueh Feng, 'Chung-kung-te 1964 nien jen-kou-pu-cha'(The 1964 population census of Communist China), *Tsu-kuo* (Hong Kong), November 1968), pp. 17–18.

[30] John S. Aird, 'Population growth and distribution in Mainland China., *An Economic Profile of Mainland China*, Vol. 2 (Studies prepared for the Joint Economic Committee, Congress of the United States) (Washington, D.C.: U.S. Government Printing Office, February 1967), p. 351.

[31] From an interview of Premier Chou En-lai by British writer Felix Greene. The content of the interview appeared in *The Sunday Times* (London, 30 April 1972).

[32] There are known to have been six different compilations of these figures. Five of them have been collected in Kenji Nakano's *The Population of Mainland China and Its Recent Trends* (Tokyo: The Mainichi Population Problems Research Council, November 1971), Tables 1 and 2.

[33] These figures are for the mainland of China only. Kenji Nakano gives 705.12 million in *The Populatior of Mainland China and Its Recent Trends* (Tokyo, The Mainichi Population Problems Research Council, November 1971), Table 1; Tsai Ping-wan gives 710.9 million in 'Chung-kuo ta-lu jen-kou-wen-ti chih yen-hsi' (A study of the population problems of the Chinese mainland), *Studies on Chinese Communism* (Taipei), No. 28 (April 1969): Lin Chen gives 711.8 million in 'A study of the Chinese mainland population', *Issues and Studies* (Taipei), 5, 2 (November 1968), Table 6; Juang Yu-chuan gives 712.32 million in 'Ta-lu jen-kou-te hsin-shu-tze' (New population figures of the mainland), *China Monthly* (Hong Kong, November 1968), p. 15: and Robert M. Field gives 713.4 million in 'A note on the population of Communist China' (*China Quarterly* (London), No. 38 (April–June 1969), p. 162.

Table 3. *Population of China by provinces, autonomous regions and municipalities, from various sources*

Province or equivalent	1953 Census (1)	SSB-1957 year-end (2)	World atlas (3)	Radio–newspapers 1967–68 (4)	People's Daily 1976 (5)
Total	590,194,715	656,630	697,970	725,620	877,600§
Peking	2,768,831	4,010	7,570	7,000	8,000
Shanghai	6,204,417	6,900	10,820	10,000	10,000§
Tientsin	2,693,831	– *	4,280	4,000	7,000
Anhwei	30,343,637	33,560	31,240	35,000	45,000
Chekiang	22,865,747	25,280	28,320	31,000	35,000
Fukien	13,142,721	14,650	16,760	17,000	20,000§
Heilungkiang	11,897,309	14,860	21,390	22,000	32,000
Honan	44,214,594	48,670	50,320	50,000	60,000
Hopei	41,145,466	44,720*	41,410	43,000	49,000
Hunan	33,226,954	36,220	37,180	38,000	40,000§
Hupeh	27,789,693	30,790	33,710	32,000	40,000
Inner Mongolia	6,100,104	9,200	6,240	13,000	8,000§
Jehol†	5,160,822	–	–	–	–
Kansu	12,928,102	12,800	12,650	13,000	18,000
Kiangsi	16,772,865	18,610	21,070	22,000	28,000§
Kiangsu	41,252,192	45,230	44,500	47,000	55,000
Kirin	11,290,073	12,550	17,890	17,000	23,000
Kwangsi Chuang	19,560,822	19,390	20,840	24,000	31,000
Kwangtung	34,770,059	37,960	42,800	40,000	53,000
Kweichow	15,037,310	16,890	17,140	17,000	24,000
Liaoning	18,545,147	24,090	29,500	28,000	33,000
Ningsia Hui	–	1,810	2,160	2,000	3,000§
Shansi	14,314,485	15,960	12,350	18,000	23,000
Shangtung	48,876,548	54,030	55,520	57,000	68,000
Shensi	15,881,281	18,130	20,770	21,000	26,000
Sikang‡	3,381,064	–	–	–	–
Sinkiang Uighur	4,873,608	5,640	7,270	8,000	10,000§
Szechwan‡	65,685,063	72,160	67,960	70,000	80,000§
Taiwan	17,591,298	10,100	12,040	13,300	16,000
Tibet	1,273,969	1,270	1,250	1,320	1,600
Tsinghai	1,676,534	2,050	2,140	2,000	3,000§
Yunnan	17,472,737	19,100	20,510	23,000	28,000

Sources: (1) '(The 1953 census communique)', *Jen-min Jih-pao* (Peking, 1 November 1954); (2) China, State Statistical Bureau, *Ten Great Years* (Peking: The Foreign Press, 1960), p. 4; (3) Ti-tu-chu-pan-she, *Shih-chieh-ti-tu-tse* (The World Atlas) (Peking: February 1972); (4) Nakano, Kenji, *The Population of Mainland China and Its Recent Trends,* (Tokyo: The Mainichi Population Problems Research Council, November 1971), Table 1; (5) *Jen-min Jih-pao* (Peking, April–November), various issues; 'Provincial Population Figures' *Current Scene* (Hong Kong), Vol. 14, No. 11 (1976), and 'Some facts about Tibet' *China Reconstructs* (Peking) 25, 3 (March 1976), p. 11.
* Tientsin is included in Hopeh Province.
† Jehol Province was abolished in 1955 and its area incorporated into Hopei, Lianoning, and Inner Mongolia.
‡ Sikang Province was abolished in 1955 and its area merged into Szechwan Province.
§ Figures given are lower than the actual populations.

as the reference date or between 0.91 and 1.03 per cent if the totals referred to mid-1967. These rates, either for 1957–64 or for 1957–67, are very low in comparison with the rate of about 2.4 per cent in 1953–57. Since these figures were not announced in the form of population statistics, they should not be treated at their face value and extreme care must be exercised when they are interpreted.

E. *Regional Population Figures given in the Atlases*

The regional population totals given in the *World Atlas* and the *Atlas of the People's Republic of China by Provinces* published by the Cartographical Institute of China respectively in 1972 and 1974 are another set of population figures.[34] The population for the whole country, derived by adding up the totals for all provinces, autonomous regions, and municipalities comes to 697.9 million. Again, there are no reference dates for these figures. On the other hand, the total population in 1970 is listed in the atlases as 'over 700 million'.

Comparing these figures with some regional population figures published earlier (Table 3), the following observations may be made. First, in the 30 provinces, autonomous regions, and municipalities, the population figures given in the atlases are greater than those of the 1957 year-end populations except in six provinces; all of these six provinces are believed to have been subject to boundary changes. Therefore, the atlas figures relate to the population some years after 1957. Secondly, they are very close to the provincial figures reported by radio broadcasts and local newspapers in China in 1967-68; with 20 provinces having populations less than those given by the radio–newspaper figures. In fact, if the atlas figures are rounded to the nearest million, like the radio–newspaper figures, it will be seen that for ten provinces the population totals are the same as given in the radio–newspaper figures and in another 14 provinces the populations were smaller. This observation suggests that the atlas figures may relate to some years before the establishment of the provincial revolutionary committees, i.e. before 1967-68. Thirdly, the total population of Taiwan Province listed in the atlas was the mid-1964 population total of that province.[35] Considering further the reported 1964 national population survey, it appears that some of the atlas figures relate to 1964, but the total of 697,870,000 does not. This is due to the average growth rate for 1957-64 implied by the atlas total being too low for the following reasons.

The growth rate of the population according to the official statistics was 2.4 per cent for 1953-57. Premier Chou said in 1964 that the rate was 2.5 per cent.[36] The rate was reported to have fallen below two per cent[37] in 1966 and in 1972 to around two per cent.[38] But the growth rate calculated from the 1957 population total and the '1964' atlas total gives only 0.9 per cent for this period, the same as the rate implied in the lowest radio–newspaper figures. Even if the growth rate had declined from 2.5 per cent in 1953-54 to 2.1 per cent in 1956-57 as the official population statistics have shown, a drop to below one per cent in 1957-64 and a rise again to 2.2 per cent in 1964-76[39] is a most unlikely trend. Even the great changes in Chinese society during 1958-64 such as the Great Leap Forward movement and the establishment of people's communes at the end of the 1950s, the natural catastrophes of 1959-1962, the economic recession in the early 1960s and the large-scale family planning campaigns since 1962 are unlikely to have depressed the growth rate of 1957-64 to such a low level. Therefore, either these regional figures do not apply to the same reference date or the figures for some provinces were underreported even if they related to 1964.

[34] Ti-tu-chu-pan-she (The Cartography Institute), *Shi-chieh-ti-tu-tse* (World Atlas) (Peking: February 1972); *Chung-hua-jen-min-kung-ho-kuo-fen-sen-ti-tu* (The Atlas of the People's Republic of China by Provinces) (Peking: October 1974). Regional population figures contained in these two atlases are identical.

[35] The atlas gives the population of Taiwan Province as 12,040,000 persons which is almost the same as the mid-1964 population of 12,070,103 given in United Nations, Department of Economic and Social Affairs, *Demographic Yearbook, 1970* (New York, 1971), p. 270.

[36] An interview of Premier Chou En-lai with Edgar Snow. See the *New York Times* (New York, 3 February 1964).

[37] Edgar Snow, 'Population care and control' in *Population and Family Planning in the People's Republic of China* (Washington, D.C.: The Victor-Bostrom Fund Committee and the Population Crisis Committee, Spring 1971), p. 8.

[38] An interview of Premier Chou En-lai with the British writer Felix Greene. See *The Sunday Times* (London, 30 April 1972).

[39] A population total of 900 million for 1 January 1976 was used in this calculation.

F. *Latest Available Population Information*

In September 1973, the national death rate for 1972 was made known in an article entitled 'China pays attention to environmental hygiene' released by the Hsinhua News Agency of China. The article stated that 'responding to Chairman Mao's call for a change in customs and habits and trans-formation of the country, people throughout China launched environmental hygiene campaigns.... The people's health has markedly improved and the death rate dropped from 18 per 1,000 in early post-liberation days to 7.6 per 1,000 in 1972'.[40] This information, needless to say, is very valuable to the study of the population of China. Since the average annual rate of growth of the population has been two per cent over the past two decades,[41] one can now say with confidence that the birth rate of China could not be higher than 27 in 1972. In the same month (September 1973), a Chinese source was reported as stating that the death rate was about 7 and birth rate about 25 in 1972.[42]

At the 1974 World Population Conference, the Chinese delegate stated that the population of China was 'nearly 800 million'.[43] Most recently, the government used the figure of 800 million in statements referring to the size of China's population.

Since April 1976, regional population totals rounded to the nearest million or ten million have been disclosed in the messages sent from the majority of the provinces, autonomous regions, and municipalities to the central government on such occasions as the death of Chairman Mao Tse-tung and the assumption of the premiership of the State Council as well as the chairmanship of the Chinese Communist Party by Hua Kuo-feng.[44] By adding up these rounded figures, a total of about 880 million was derived. The reader should be cautioned, however, that these regional figures are, as in the case of the radio–newspaper figures, not population statistics, and have no reference period; they merely give a rough idea of the current size of the population. However, a careful examination of them yields some important information.

Because these figures began to appear in April and some of the same figures reappeared between September and November of the same year, they should be the population totals of early 1976, 1975 or earlier. Indeed, the same figures for Hunan and Kiangsi provinces were known in 1975. As in the case of the atlas figures, the new data may be population totals at different dates. Therefore, a comparison of this set of figures with some of the earlier regional figures is difficult. By adding up these regional population totals, a national total of 877,600,000 is derived (Table 3).

In view of the fact that the population totals given for at least nine provinces are smaller than their actual sizes,[45] it may be said that the national total population was at least 880 million at the beginning of 1976. But if this total were underestimated by 2.5 or 5.0 per cent, the total population of China would be 900 or 920 million on that date. If it was 880 million, then the rate of growth implied for 1953-76 was 1.78 per cent and for 1957-76, 1.63 per cent. But if it was either 900 million or 920 million, the rates become respectively 1.88 or 1.97 per cent for 1953-76 and 1.75 or 1.87 per cent for 1957-76. Since the Chinese government asserted that the growth rate for the past a quarter of a century averaged around two per cent,[46] the higher figures may represent the present total size of the Chinese population.

After reviewing the available information on China's population, it could be said that the

[40] 'China pays attention to environmental hygiene' *News from Hsinhua News Agency, China* (London, 24 September 1973), pp. 14–15.

[41] 'New China's production rises faster than population', *News from Hsinhua News Agency, China* (London, 23 September 1973), p. 18.

[42] See R. T. Ravenholt's letter to the editor of *People* (London), 3, 4 (1976), p. 51.

[43] 'United Nations World Population Conference, China's views on major issues of world population', *Peking Review* (Peking), No. 35 (30 August 1974), pp. 6–9.

[44] See various issues of the *People's Daily* from April through October 1976.

[45] The population of Szechwan Province given was 'more than 80 million' and the figure of 80 million was used to obtain the present total. The populations of Tsinghai, Sinkiang Uighur, Ningsia Hui, Inner Mongolia, Fuchien, Shanghai, Hunan and Kiangsi were also appearing in the newspaper in a similar manner.

[46] 'New China's production rises faster than population', *loc. cit.* in footnote 41.

rather limited data do not permit any comprehensive study of China's demography. There were practically no population statistics before 1953 and a demographic discontinuity around that year. Continuous warfare and natural catastrophes had visited the entire Chinese sub-continent, and the loss of human life was immeasurable. The true levels of fertility and mortality and their changes can only be guessed. There are known to have been large population movements within the country, but even the approximate volume and composition of these movements cannot be traced. Fragmental population surveys were conducted from time to time in different parts of the country, but the small samples could hardly represent the demographic condition of a region, much less of the whole country. Occasionally, estimated population figures for each province were published by the Chinese central government, yet the methods of estimation were unknown and the reliability of these estimates was very limited. Thus, the 1953 Census is the sole basis for any studies of the population of modern China. Any attempt to try to link the census with earlier fragmental population data in order to explain the growth of population can be very misleading and unpersuasive.

II. PREVIOUS ESTIMATES OF THE POPULATION

A. Estimates of Total Population

Until the present, the 1953 census results, although not universally accepted, have been considered to be the only basis for any study of the population of China. The Census total was perhaps not exact; in the census of any large nation, even a slight percentage error can produce an absolute error of several million in the total population.[47]

There are numerous other estimates of the population of China derived either from elaborate models or by simple extrapolation with assumed growth rates. A few of those estimates prepared in the 1970s are summarized below. It should be noted that most of the estimates mentioned below have not included the population of Taiwan Province, unless otherwise indicated.

The United Nations has previously used the 1953 census results as the basis for alternative estimates for 1950–2000. In 1973, a revised projection, with 1970 as the base year, gave a total of 839 million, including Taiwan Province for mid-1975, 908 million for mid-1980 and 1,148 million for mid-2000 and a rate of growth of 1.65 per cent for 1970–75 and 1.56 for 1975–80 according to the medium variant.[48] The high and low variants of the revised projections give the total population as 844 and 829 million respectively for mid-1975.[49]

Paul Paillat and Alfred Sauvy of the Institut national d'études démographiques, Paris, adjusted the official 1957 year-end population total and projected it by assuming a growth rate of two per cent for 1958–61, 1.75 per cent for 1962–67, and 1.5 per cent for 1968–73. The total population on 1 January 1970 would then be 820 million and on 1 January 1974, 869 million.[50] The revised estimates made by John S. Aird of the Foreign Demographic Analysis Division, Bureau of Economic Analysis, U.S. Department of Commerce in 1976 gave a mid-1976 total population of between 999 and 900 million and suggested that the rate of natural increase for that year was between 20.5 and 11.0 per 1,000.[51] Leo A. Orleans of the U.S. Library of Congress also revised his estimates in 1977 and gave the population total as 801 million for 1 January 1970 and 896 million for 1 January 1977 and a growth rate of 1.6 per cent for this period.[52] L. I. Molodtsova of the

[47] United Nations, Department of Economic and Social Affairs, *The Population of Asia and the Far East, 1950–1980* (New York, 1959), p. 76.

[48] *Idem, World Population Prospects as Assessed in 1973* (New York, 1977), Annex 1.

[49] *Ibid.*

[50] Paul Paillat and Alfred Sauvy, 'La population de la Chine, évolution et perspectives', *Population* (Paris), **29**, 3 (1974), pp. 535–552. These figures are taken from their Hypothesis 6.

[51] See the letter of John S. Aird to the editor of *People* (London), **4**, 2 (1977), p. 49.

[52] Leo A. Orleans, *China's Birth Rate, Death Rate, and Population Growth: Another Perspective*, Report prepared for the Committee on International Relations, U.S. House of Representatives by the Congressional Research Service, Library of Congress (Washington, D.C.: U.S. Government Printing Office, September 1977), p. 31.

Institute of Oriental Studies, USSR Academy of Sciences suggested a total of 829 million for 1974 on the basis of the *World Atlas* figures which she concluded were the results of the second census taken in 1964 and an assumed growth rate of 1.9 per cent for 1964-74.[53] Another estimate made by Evgeny Konovalov of the Sector of Population Problems at the Institute of the Far East, USSR Academy of Sciences gave 780 million (including Taiwan province) for 1970. However, it is not clear how this estimate was derived.[54]

B. *Estimates of Fertility and Mortality*

Most of the available information on fertility and mortality is for the years before 1957. The only official data on birth and death rates are those reported by Pai Chien-hua, the 1953 Census Director, who gave a birth rate of 37 and a death rate of 17 for 1953, based on the results of a sample survey,[55] those obtained from the State Statistical Bureau by Pressat and Chandrasekhar and the death rate of 7.6 for 1972 (Table 2). Other than the above, there are estimates derived from data collected in local investigations during 1951-54 which indicate a birth rate of 41.6 and a death rate of 21.0.[56] If these rates are weighted by the population of these localities, the crude birth rate becomes 37.2 and the death rate 19.8 for the whole country.[57] While the death rate so estimated is higher than the rate of 17.0 obtained at the 1953 sample survey, the weighted average birth rate is very close to the figures of 37.0 in the same survey.

Other than the official figures, there are a few independent estimates of the birth and death rates for recent years. In the last revision of population projections for China prepared by the United Nations Population Division,[58] a set of assumptions on the trends of fertility and mortality was derived based on the 1953 census age distribution and the trends of vital rates during the 1950s. It was envisaged that the gross reproduction rate was 2.0 in 1970, would decline to 1.8 in 1970-75, and to 1.6 in 1975-80, according to the medium variant of the projections. Life expectancies at birth of 59.9 years for males and 63.3 years for females in 1970-75 and 61.8 years for males and 65.5 years for females in 1975-80 were assumed. The implied birth and death rates were respectively 26.9 and 10.3 for 1970-75 and 25.2 and 9.5 for 1975-80.

Orleans rejected the birth rate of 37 and the death rate of 17 obtained from the 1953 survey results because 'sample surveys conducted in the 1930s and 1940s reported the higher rates that would be expected in an overwhelmingly rural society without artifical controls of the people's fertility'[59] and substituted a birth rate of 43 and a death rate of 29 for that year. His latest estimates of birth and death rates are 32 and 16 respectively for 1970 and 25 and 10 for 1977.[60] The latest estimate that Aird has made gives China a birth rate between 18.0 and 32.4 and a death rate between 7.0 and 11.9 for 1976.[61] Paillat and Sauvy suggested that in 1974 the birth rate could be as low as 23-24 and death rate 7-9.[62]

R. T. Ravenholt, Director of the Office of Population, U.S. Agency for International Development, reported on the basis of his personal communications with Chinese officials that birth and

---

[53] L. I. Molodtsova, 'O chislennosti naseleniya KNR', *Narody Asii i Afriki* (Moscow); No. 4 (1975), pp. 81-91.

[54] Evgeny Konovalow, 'Social and Economic Aspects of China's Population Problem' in *Social Science To-day*, Editorial Office, USSR Academy of Sciences, *Population Problems*. Issue Two, Moscow, No. 1 (26) (1974), pp. 92-104, and 'Sotsialno-ekonomicheskiye aspekty problemy narodonaseleniya KNR' in M. I. Sladkovsky (ed.), *Sovremennii Kitai*, Moscow, Nanka, 1972, p. 76.

[55] Pai Chien-hua, *op. cit.* in footnote 5.

[56] Chen Ta, *op. cit.* in footnote 6, Table 4.

[57] United Nations, Department of Economic and Social Affairs, *The Population of Asia and the Far East, 1950-1980*, New York, 1959, p. 77.

[58] *Idem, World Population Prospects as Assessed in 1973* (New York, 1977), Chapter V.

[59] Leo A. Orleans, *loc. cit.* in footnote 16.

[60] Leo A. Orleans, *op. cit.* in footnote 52.

[61] John Aird's letter to the editor of *People* (London), *op. cit.* in footnote 51.

[62] Paul Paillat and Alfred Sauvy, *loc. cit.* in footnote 50.

death rates were respectively 25 and 7 in 1972 and 17 and 6–8 respectively in 1974 and then estimated a low birth rate of 14 and a death rate of 6 for 1975.[63] Since the birth rate of some major cities of China in 1971–72 was 17 (see following paragraphs), it appears that this reported birth rate of 17 in 1974 may have referred to the urban birth rate or the birth rates of some cities rather than to the country as a whole. It should be noted that as Chairman Mao said in 1971, in the countryside of China, the traditional attitudes of wanting at least one boy in the family still exerts strong influence upon the fertility behaviour of women, which would prevent drastic decline in the level of fertility.[64]

The reported infant mortality rates for rural and urban areas were respectively 138.5 (per 1,000 live births) and 47.0 in 1954, and 109.7 and 42.0 in 1955. The urban rates declined to 35 in 1956 and to 32 in 1957.[65] If the 1954 and 1955 rates are weighted by the proportions of rural and urban population of these years, the infant mortality rates for the total population become 126.1 in 1954 and 100.5 in 1955.[66] An infant mortality rate at the 1955 level would correspond to an expectation of life at birth of about 56 years (both sexes) according to the United Nations model life tables and to about 53 years according to the 'West' model of the Princeton regional model life tables. The Chinese Government was reported to have indicated that the expectation of life at birth was 54 years in 1958.[67]

While detailed vital statistics for the whole country are not available at present, birth and death rates for some major municipalities and people's communes have been made available and reported by persons who visited China recently.[68] According to available reports, for example, the birth rate of Peking in 1971 was 18.8 and the death rate 6.4; the birth rate in the urban sector of the city was 12.0 and in the rural sector, 20–21. In Shanghai, the birth rate was 12.0 and the death rate 5.2 in 1971, 9.7 and 4.1 in 1972; the birth rate of the urban sector was only 6.9 and 6.4 and of the rural sector, 18.0 and 15.5 in 1971 and 1972 respectively.[69] In Kwangchow, the birth rate was 17.1 in 1971 and 19.0 in 1972 and the death rate was 5 in 1971–72; the birth rate of the urban sector of Kwangchow was 11.0 in 1971 and 10.5 in 1972.[70] If these rates are compared to the 1957 birth rate of 42.0 in Peking and of 45.7 in Shanghai and the 1963 birth rate of 35.5 in Kwangchow[71] it is clear that a tremendous change has taken place in the fertility of the Chinese population. Apparently, the improvement in public health and the campaign for a family planning programme have been extremely important in reducing the birth and death rates of these cities.

On the other hand, it was reported in the Chinese press that in the Inner Mongolia Autonomous Region, the death rate has dropped from a high level of 44.2 per 1,000 in 1930–40 to only 6.5 in 1974 while the population growth rate has increased from a negative value of − 6.9 to 22 per 1,000 during the same period implying also a reduction in the birth rate from 37.3 to around

---

[63] R. T. Ravenholt, *op. cit.* in footnote 42.

[64] Edgar Snow, 'A conversation with Mao Tse-tung', *Life* (New York, 30 April 1971), p. 47.

[65] S. Chandrasekhar, *op. cit.*, in footnote 11, Table 13.

[66] The weights are the proportions of urban and rural populations of the corresponding years.

[67] S. Chandrasekhar, *op. cit.* in footnote 11, p. 57.

[68] For example, Anibal Faundes and Tapani Luukkainen, 'Health and family planning services in the Chinese People's Republic', *Studies in Family Planning* 3, 7 (Supplement): (July 1972); Tameyoshi Katagiri, *A Report on the Family Planning Programme in the People's Republic of China*; (Tokyo International Planned Parenthood Federation, Western Pacific Region, May 1972); and Pi-chao Chen, 'Lessons from the Chinese experience: China's planned birth programme and its transferability', *Studies in Family Planning* (New York), 6, 10 (October 1975), Table 1.

[69] The 1971 rates are given in Faundes and Luukainen's article, *ibid.*, and the 1972 rates are given in Chen's article, *ibid.* However, the change in 1971–72 may not necessarily mean a real change in vital rates since the sources of information are not the same. This condition also applies to the rates for other cities given in this section.

[70] The 1971 rates were reported by the author and the 1972 rates were given in Chen, *ibid.*

[71] Reported by the author.

28.[72] One also learns that in 1973-74 the growth rate was reduced to 1.2 per cent in Kiangsu Province, had risen to three per cent in Sinkiang Uighur,[73] and to around two per cent in Tibet[74] but declined to below one per cent in many rural counties of China.[75] All these changes are attributable to the successful implementation of the family planning programme. However, there is little information on the extent of changes in fertility and mortality levels in other parts of Chinese society.

C. Estimates of Age and Sex Structure of the Population

In the 1953 census communique the population is given in six irregular age groups, viz., 0-9, 10-17, 18-49, 50-79, 80-99 and 100 and over. Slightly more detailed census age data, classified by five-year age groups for both sexes, were made available in Chen Ta's paper presented to the International Statistical Institute, and an age-sex pyramid of the census population was given in Tien Feng-tiau's paper discussing the population of China. In addition, sex ratios for various age groups were given in Tai Shih-kuang's paper presented to the Indian Statistical Institute. These are all shown in Table 4.

The age and sex data given in the above studies are said to have been taken from unpublished census material and are all consistent with one another. However, none of them has been entirely accepted by scholars outside China either because it was felt that these age distributions were too smooth and can almost be identified with a stable model population,[76] or because they showed 'some anomalies not easily explainable by the probable demographic history of China during the years in which the 1953 population structure was generated'.[77] Such considerations lead many students of the Chinese population to use hypothetical age and sex structures to study the future growth of the Chinese population. For instance, the U.S. Bureau of the Census in its projection of the population of the Chinese mainland has discarded the age distribution derived from the 1953 Census and substituted for it a model population 'reflecting the assumed demographic experience of the previous three centuries'.[78]

The 1953 census distribution for ages five and over also closely resembles the 'West' model stable distribution of the Princeton family characterized by a gross reproduction rate of 2.1 and with mortality level 9.[79] In the 1973 revision of population projections prepared by the United Nations, the projections for China used the census distribution as part of the basic source material after it had been adjusted by the above stable model. In the adjustment, the census distribution for ages five and over was replaced by the selected model and, as a result, the irregular age pattern of the sex ratios was smoothed. However, no adjustments were made for ages under five. The census sex ratio of 107.7 was retained. The total population for mid-1953 was 590,195,000.[80] This adjusted distribution (Table 5) will be used in this paper as the base distribution for the present population projections.

[72] 'Nei-mon-gu chao-yun jen-ting-sing-wang' (Prosperous growth of the population in the Inner Mongolian Grassland) Jen-min Jih-pao (People's Daily) (Peking, 25 June 1974), p. 3.

[73] 'China on the population question', China Reconstructs (Peking), 23, 11 (November 1974), pp. 12-13.

[74] 'Tibet–from serfdom to socialism', China Reconstructs (Peking), 25, 3 (March 1976), p. 8 and 'Some facts about Tibet', ibid., p. 11.

[75] Such declines in growth rates were reported in various issues of the People's Daily, for example, in the issues of 1, 16, 19 February 1976, 7 February, 29 October, 25 November 1975, etc.

[76] United Nations, Department of Economic and Social Affairs, The Population of Asia and the Far East, 1950-1980 (New York, 1959), p. 79.

[77] U.S. Bureau of the Census, Estimates and Projections of the Population of Mainland China: 1953–1986, by John S. Aird, International Population Reports, Series P-91, No. 17 (Washington, D.C.: U.S. Government Printing Office, 1968, p. 14.

[78] Ibid.

[79] e_0^o is 37.3 years for males and 40.0 years for females. See A. J. Coale and P. Demeny, Regional Model Life Tables and Stable Populations (Princeton: Princeton University Press, 1966).

[80] This is the population total excluding overseas Chinese and students abroad.

Table 4. *Age and sex structure of the Chinese population from the 1953 Census given by various sources*

I. *Age (per cent)*

Census communique*		Chen Ta†		Tien Feng-tiao‡			
					Total	Males	Females
All ages	100.0	All ages	100.0	All ages	100.0	100.0	100.0
0–4	15.6	0	3.3	0–4	15.6	15.5	15.7
5–9	11.0	1–4	12.3	5–9	10.9	11.2	10.7
10–17	14.5	5–14	20.3	10–14	9.4	9.8	9.0
18–49	45.4	15–24	17.3	15–19	9.1	9.3	8.9
50–79	13.2	25–34	14.6	20–24	8.3	8.3	8.2
80–99	0.32	35–44	12.0	25–29	7.7	8.0	7.5
100–155	0.00	45–54	9.3	30–34	6.9	7.1	6.7
		55–64	6.5	35–39	6.4	6.4	6.4
		65–74	3.4	40–44	5.6	5.5	5.6
		75+	1.0	45–49	5.0	5.0	5.1
				50–54	4.3	4.2	4.3
				55–59	3.6	3.4	3.7
				60–64	2.9	2.7	3.1
				65–69	2.0	1.8	2.3
				70–74	1.4	1.1	1.6
				75–79	0.6	0.5	0.8
				80+	0.3	0.2	0.4

II. *Sex Ratios (Males per 100 Females)*

Census Communique*		Tai Shih-kuang§	
All ages	107.6	All ages	107.7
		0	104.9
		1–2	106.2
		3–6	110.0
		7–13	115.8
		14–17	113.7
		18–35	111.5
		36–55	106.8
		56+	86.7

Sources: * ('The 1953 Census Communique'), *Jen-min Jih-pao*, 1 November 1954, p. 1 and Pai Chien-hua, ('Six hundred million people–a great strength for socialist construction of our country'), *Jen-min Jih-pao*, 1 November 1954, p. 3.

† Chen Ta: 'New China's population census of 1953 and its relations to national reconstruction and demographic research', *Bulletin de l'Institut International de Statistique* (Stockholm), **36**, 2 (1957), Table 2.

‡ Tien Feng-tiau, 'Wo-kuo chi-hua-sheng-yu ho jen-kou tseng-chih wen-ti' (The planned birth and population increase in our country), *Jen-min Pao-chien* (People's Health) (Peking), **1**, 5 (May 1959), p. 463. The age data given in Tien's paper is an age pyramid. The percentages given in this table are those estimated by John S. Aird on the basis of the age pyramid. See U.S. Bureau of the Census, *The Size, Composition and Growth of the Population of Mainland China*, International Population Statistics Reports, Series P-90, No. 15, Table 13.

§ Tai Shih-kuang, *1953 Population Census of China* (Calcutta: Indian Statistical Institute, December 1956), p. 21 (mimeographed).

Table 5. *Adjusted Population by Age and Sex, China, 1953*

	Males		Females		Sex ratios (males per 100 females)
Ages	Population (in thousands)	Per cent	Population (in thousands)	Per cent	
All ages	306,037	100.0	284,158	100.0	107.7
0–4	47,436	15.5	44,613	15.7	106.3
5–9	32.134	10.5	28,700	10.1	112.0
10–14	30.604	10.0	27,279	9.6	112.2
15–19	28,155	9.2	25,290	8.9	111.3
20–24	26,013	8.5	23,301	8.2	111.6
25–29	23,871	7.8	21,312	7.5	112.0
30–34	21,729	7.1	19,323	6.8	112.5
35–39	19,280	6.3	17,618	6.2	109.4
40–44	17,138	5.6	15,913	5.6	107.7
45–49	15,302	5.0	14,492	5.1	105.6
50–54	12.854	4.2	12,503	4.4	102.8
55–59	10,405	3.4	10,514	3.7	99.0
60–64	8,263	2.7	8,525	3.0	96.9
65–69	6,121	2.0	6,535	2.3	93.7
70–74	3,978	1.3	4,262	1.5	93.3
75–79	1.836	0.6	2,557	0.9	71.8
80+	918	0.3	1,421	0.5	64.6

III. ESTIMATES OF POPULATION FOR 1953-78.

An attempt has been made to obtain a preliminary revision of the estimates of population for 1953-78. The mid-1953 population was first projected to mid-1958. Given the adjusted 1953 sex-age distribution and the population totals and vital rates from 1952-57, a total fertility rate of 5.2 (gross reproduction rate = 2.54) and an expectation of life at birth of 55.5 years (both sexes) were selected as fertility and mortality measures for 1953-58 (Variant I). The projected mid-1958 population is 658,408,000 and the implied birth rate is 35.3 and the implied death rate 13.5 for 1953-58. These figures are very close to the 1957 year-end population of 656,630,000 and the average crude birth rate of 35 and crude death rate of 13 for 1952-57 provided by the State Statistical Bureau (See Tables 1 and 2).

However, the question may be raised whether levels of 35 for birth rates and 13 for death rates are too low for China in 1953-58. In responding to the initial recovery of the national economy and the rise in the standard of living of the people as well as the improvement of public health first in urban and later in rural areas, the birth rate would be expected first to rise or at least to remain unchanged until factors leading to a decline of birth rates develop. The large differences between the birth rates 38 in 1954, 32 in 1956, and 34 in 1957, seem to suggest that they have been underestimated especially in the latter years in view of the fact that a nationwide registration system was not established until the late 1950s. Underestimation of deaths may also have led to the large differences among the death rates of 1952 to 1957.

Suppose that the fertility in 1953-58 was underestimated by between 8 and 15 per cent and, therefore, the total fertility rate was either 5.6 (gross reproduction rate = 2.73) or 6.0 (gross reproduction rate = 2.93) instead of the estimated 5.2; then a combination of 5.6 births with a life expectancy at birth of 52.0 years (Variant II) yields a total population of 659,963,000 for mid-1958 and a combination of 6.0 births with a life expectancy at birth of 47.5 years (Variant III) yields a total of 658,007,000 for the same date. Both population figures are close to the 1957 year-end population total. The average birth and death rates for 1953-58 are respectively 38.1 and 15.8 for Variant II and 40.9 and 19.2 for Variant III.

The choice of the above two combinations is, of course, arbitrary. It only suggests a plausible range of variation of the vital levels. Other combinations, using a total fertility rate between 5.6 and 6.0 and a life expectancy at birth between 47.5 and 52.0 or other vital levels can also yield a mid-1958 population close to the 1957 year-end figure. But to assume that the fertility rate is higher than 6.0 and the expectation of life lower than 47.5 years would not be reasonable because underestimation of fertility by 15 per cent is already very high and the death rate of 19.2 per 1,000 derived from Variant III would mean that the official rate was underestimated by close to 50 per cent. This seems unlikely, unless the whole validity of the official vital rates is questioned. On the other hand, assuming total fertility to be lower than 5.6 but higher than 5.2 and life expectancy higher than 52.0 but lower than 55.5 would produce birth and death rates which differ very little from the official figures.

Projection assumptions prepared for the period after 1958 have taken into consideration the levels of fertility and mortality of the 1950s, as well as the development of social and economic conditions and of the population policy of China since 1958. In the 1950s, measures were taken to promote national health and family planning, but most efforts were concentrated in urban areas. Though the national economy initially recovered in the 1950s, it suffered a setback in the early 1960s because of the severance of external economic relations and through natural calamities. The level of fertility may have declined slightly, but mortality has improved. It was not until the economy recovered again, and particularly since 1965 when great efforts were made to develop a nation-wide public health network, that the health programmes, including the family planning programme, were expanded. Both fertility and mortality have been further reduced. The scale and intensity of the programmes reached an unprecedented level in the 1970s.

It was, therefore, assumed that fertility was at the level of either 5.2, 5.6, or 6.0 births in 1953–58. However, the present level is not known. It is possible that total fertility is now between 3.0 and 3.5. A total fertility rate of 4.0 might be too high but a rate below 3.0 is too optimistic, since, as will be shown later, the birth rates generated from these levels fall outside the reasonable range of birth rates estimated from the recent demographic information. The projections thus assumed that fertility in 1973–78 was at the level of either 3.0 or 3.5 births down from either 5.2, 5.6, or 6.0 births in 1953–58.

Life expectancy was assumed to be at the level of either 47.5, 52.0, or 55.5 years in 1953–58 and to have improved rapidly in the next two decades. Since the death rate in 1972 was 7.6 per 1,000, which corresponds to a life expectancy at birth of approximately 67.5 years, it was assumed

Table 6. *Fertility and mortality assumptions*

	Variant I		Variant II		Variant III	
	(1)	(2)	(1)	(2)	(1)	(2)
I–Fertility (Total fertility rate per woman)						
1953–58	5.2	5.2	5.6	5.6	6.0	6.0
1958–63	5.1	5.0	5.4	5.3	5.8	5.6
1963–68	4.7	4.5	4.9	4.7	5.2	5.0
1968–73	4.1	3.8	4.2	3.9	4.4	4.1
1973–78	3.5	3.0	3.5	3.0	3.5	3.0
II–Mortality (expectation of life at birth, both sexes)						
1953–58	55.5	55.5	52.0	52.0	47.5	47.5
1958–63	59.0	57.5	56.5	55.0	53.5	51.5
1963–68	62.5	59.5	60.5	57.5	59.0	55.5
1968–73	65.5	61.0	64.0	60.0	64.0	59.5
1973–78	67.5	62.5	67.5	62.5	67.5	62.5

Variant I –

Initial levels: TFR = 5.2, $\mathring{e}_0$ = 55.5 years.
Terminal levels: Projection 1: TFR = 3.5, $\mathring{e}_0$ = 67.5 years.
                 Projection 2: TFR = 3.5, $\mathring{e}_0$ = 62.5 years.
                 Projection 3: TFR = 3.0, $\mathring{e}_0$ = 67.5 years.
                 Projection 4: TFR = 3.0, $\mathring{e}_0$ = 62.5 years.

(POP – population in thousands, r – average annual rate of growth in percentage, CBR – crude birth rate per 1,000 population, CDR – crude death rate per 1,000 population.)

Year	Projection 1		Projection 2		Projection 3		Projection 4	
	POP	r	POP	r	POP	r	POP	r
1953	590,195	–	590,195	–	590,195	–	590,195	–
1958	658,408	2.21	658,408	2.21	658,408	2.21	658,408	2.21
1963	734,200	2.20	731,422	2.13	732,116	2.14	729,359	2.07
1968	812,295	2.04	803,892	1.91	805,642	1.93	797,371	1.80
1973	890,774	1.86	873,844	1.68	876,219	1.69	859,723	1.52
1978	964,495	1.60	938,028	1.43	935,629	1.32	910,242	1.15
	CBR	CDR	CBR	CDR	CBR	CDR	CBR	CDR
1953–58	35.3	13.5	35.3	13.5	35.3	13.5	35.3	13.5
1958–63	33.3	11.5	33.3	12.3	32.6	11.4	32.7	12.2
1963–68	29.9	9.7	30.0	11.1	28.8	9.6	28.8	11.0
1968–73	26.8	8.4	27.0	10.3	25.1	8.3	25.3	10.2
1973–78	23.5	7.6	23.8	9.6	20.8	7.7	21.0	9.6

that 67.5 years has been reached in 1973–78. Another variant using 62.5 years for 1973–78 was also prepared in order to allow for possible underestimation of the 1972 death rate. Absence of international migration was assumed. The volume of external migration has been negligible for the past quarter-century.

Three variants of assumptions were prepared on the basis of the three initial levels of fertility and mortality. Variant I has an initial total fertility rate (TFR) of 5.2 and an expectation of life at birth (e_0) of 55.5 years. These fertility and mortality levels are the same as the reported official levels. Variant II has an initial TFR of 5.6 and an e_0 of 52.0 years. Variant III has an initial TFR of 6.0 and an e_0 of 47.5 years. Other combinations of these initial values of fertility and mortality will yield a mid-1958 total population too far away from the 1957 year-end population, and they are not therefore used in the present projection. Since there are also two terminal fertility and two terminal mortality conditions, each of the variants has four alternatives. The assumptions are given in Table 6 and the results of the projections are summarized in the following paragraphs.

Variant I (Projections 1 to 4)

The population for mid-1978 could lie between 910,242,000 and 964,495,000 persons. The average rate of growth of 2.2 per cent in 1953–58 has declined steadily to between 1.1 and 1.6 in 1973–78. The crude birth rate has been reduced from 35.3 in 1953–58 to 25–27 in 1968–73 and to 21–24 in 1973–78 as a result of fast declines of both fertility and mortality. The crude death rate has declined from 13.5 in 1953–58 to about 8–10 in 1968–73 and further to about 7–9 in 1973–78.

Variant II–

Initial levels: TFR = 5.6, $\overset{o}{e}_0$ = 52.0 years.
Terminal levels: Projection 5: TFR = 3.5, $\overset{o}{e}_0$ = 67.5 years.
                 Projection 6: TFR = 3.5, $\overset{o}{e}_0$ = 62.5 years.
                 Projection 7: TFR = 3.0, $\overset{o}{e}_0$ = 67.5 years.
                 Projection 8: TFR = 3.0, $\overset{o}{e}_0$ = 62.5 years.

(POP–population in thousands, r–average annual rate of growth in percentage, CBR–crude birth rate per 1,000 population, CDR–crude death rate per 1,000 population.)

Year	Projection 5		Projection 6		Projection 7		Projection 8	
	POP	r	POP	r	POP	r	POP	r
1953	590,195	–	590,195	–	590,195	–	590,195	–
1958	659,963	2.26	659,963	2.26	659,963	2.26	659,963	2.26
1963	737,514	2.25	734,526	2.16	735,463	2.19	732,499	2.11
1968	816,341	2.05	807,423	1.91	809,855	1.95	801,074	1.81
1973	894,308	1.84	877,607	1.68	880,018	1.68	863,732	1.52
1978	968,160	1.60	941,905	1.42	939,607	1.32	914,511	1.15
	CBR	CDR	CBR	CDR	CBR	CDR	CBR	CDR
1953–58	38.2	15.8	38.2	15.8	38.2	15.8	38.1	15.8
1958–63	35.1	12.9	35.1	13.7	34.5	12.8	34.5	13.7
1963–68	30.8	10.5	30.9	12.0	29.7	10.5	29.8	11.9
1968–73	27.0	8.8	27.2	10.6	25.4	8.8	25.6	10.5
1973–78	23.3	7.4	23.6	9.4	20.6	7.5	20.8	9.4

Variant II (Projections 5 to 8)

The population for mid-1978 could be between 914,411,000 and 968,160,000 persons. The average rate of growth of 2.2 per cent in 1953-58 has declined steadily to 1.1 or 1.6 per cent in 1973-78. The crude birth rate was reduced from 38.2 per 1,000 in 1953-58 to 26-27 in 1968-73 and to 21-24 in 1973-78 as a result of a fast decline of both fertility and mortality. The crude death rate has declined from 15.8 per 1,000 in 1953-58 to 9-10 in 1968-73 and further to about 7-9 in 1973-78.

Variant III (Projections 9 to 12)

The population for 1 January 1978 could lie between 917,243,000 and 976,315,000 persons. The average rate of growth of 2.2 per cent in 1953-58 has increased slightly during the next five years according to Projection 9 and has changed very little according to Projections 10 and 11. By 1973-78, the rate has declined to 1.1 or 1.6 per cent. The crude birth rate was reduced from 40.9 per 1,000 in 1953-58 to 26-28 in 1968-73 and to 20-23 in 1973-78 as a result of a fast decline in both fertility and mortality. The crude death rate has declined from 19.2 per 1,000 in 1953-58 to about 9-11 in 1968-73 and further to about 7-9 in 1973-78.

The results generated by the three variants do not differ from one another to any great extent in the terminal population totals and vital rates but do differ in the process of change. The assumptions of a terminal total fertility of 3.5 births will result in a crude birth rate of 23-24 per 1,000 and a rate of three births will give a crude birth rate of 20-21.[81] Expectation of life at birth

[81] If a total fertility of four births is assumed, the birth rate would be around 26-27 per 1,000. This level is perhaps too high for 1977 if the birth rate was 25 and the death rate 7.6 for 1972 as reported. On the other hand, if a total fertility of less than 3.0 births is assumed, the birth rate would be lower than 20. This level is too low since the growth rate would be only around one per cent or less.

Variant III –

Initial levels;   TFR = 6.0, $\hat{e}_0$ = 47.5 years.
Terminal levels: Projection 9:   TFR = 3.5, $\hat{e}_0$ = 67.5 years.
                   Projection 10: TFR = 3.5, $\hat{e}_0$ = 62.5 years.
                   Projection 11: TFR = 3.0, $\hat{e}_0$ = 67.5 years.
                   Projection 12: TFR = 3.0, $\hat{e}_0$ = 62.5 years.

(POP–population in thousands, r–average annual rate of growth in percentage, CBR–crude birth rate per 1,000 population, CDR–crude death rate per 1,000 population.)

Year	Projection 9 POP	r	Projection 10 POP	r	Projection 11 POP	r	Projection 12 POP	r
1953	590,195	–	590,195	–	590,195	–	590,195	–
1958	658,007	2.20	658,007	2.20	658,007	2.20	658,007	2.20
1963	737,453	2.31	733,095	2.18	733,500	2.20	729,207	2.08
1968	820,164	2.15	808,521	1.98	811,893	2.05	800,468	1.88
1973	902,638	1.93	882,017	1.76	886,718	1.78	866,638	1.60
1978	976,315	1.58	946,119	1.41	946,224	1.31	917,243	1.14
	CBR	CDR	CBR	CDR	CBR	CDR	CBR	CDR
1953–58	40.9	19.2	40.9	19.2	40.9	19.2	40.9	19.2
1958–63	37.5	14.7	37.6	16.0	36.3	14.6	36.4	15.8
1963–68	32.4	11.2	32.6	13.0	31.5	11.2	31.6	13.0
1968–73	27.8	8.7	28.1	10.7	26.3	8.6	26.5	10.6
1973–78	22.9	7.2	23.2	9.2	20.3	7.3	20.5	9.2

of 62.5 and 67.5 years will generate a crude death rate of about 9 per 1,000 and 7–8 per 1,000 respectively.

In view of the fact that the target growth rate proposed in the fourth five-year plan for 1975 is one per cent for urban areas and 1.5 per cent for rural areas or about 1.4 per cent for the country as a whole, the projected growth rates implied in projections 4, 8, and 12 which are all around 1.1 per cent in 1973–78 appear to be too low. This means that the assumptions with a terminal fertility of three births and a terminal mortality of 62.5 years, yielding a crude birth rate of around 21 and a death rate of 9 and over are too low.

The set of vital rates derived from Variant I on the basis of a possible underestimated fertility and mortality is believed to be the minimum possible in China at present. On the other hand, the set of vital rates derived from Variant III on the basis of a possible overestimated fertility and mortality is believed to be the possible maximum. These two sets of rates thus provide a plausible range of the development of the vital rates over the past 25 years. The set of vital rates generated from Variant II falls between those from Variants I and III and seems to be the most reasonable and could be used as the medium for all projections.

If the medium alternatives of each variant (Projections 2, 3, 6, 7, 10, 11) are taken, they show that the population of China at the middle of 1978 lay between 935 and 946 million, and that between 1973 and 1978 it was growing at a rate of 1.3–1.4 per cent with a birth rate of 21–24 and a death rate of 7–9.

CONCLUSION

The 1953 population census of China has, for the first time in many decades, reduced the uncertainty about the size and some characteristics of the Chinese population. On the basis of this census, the growth of population in the 1950s can be understood. But the absence of data since 1960 has once again made the demography of this country a subject of questioning and debate.

The various works and their disagreements on the present population situation of China reflect not only the different assessments of each study regarding the past trends of growth but also their different understanding and attitudes towards the development of present Chinese society. But one point shared by most writers is that China's current vital rates are low or moderately low. China, it is believed, is now in a later state of demographic transition resulting from the successful implementation of a policy of population planning. Because of her size and, in particular, the recent trends of growth, it is recognized that the growth of the population of China will determine the overall trend of growth of the world during the next several decades.