

**'Agricultural' and 'Non-agricultural'
Population Statistics
of the People's Republic of China:
Definitions, Findings and Comparisons**

Chan Kam Wing and Tsui Kai Yuen

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Department of Geography and Geology
University of Hong Kong
Hong Kong

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The authors

Chan Kam Wing is a Lecturer in the Department of Geography and Geology, University of Hong Kong.

Tsui Kai Yuen is a Lecturer in the Department of Economics, Chinese University of Hong Kong.

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ABSTRACT

This paper deals with a significant aspect of China's changing sectoral structure of employment and population. Various series of agricultural and non-agricultural population statistics used in China and their intricacies are reviewed. On the basis of a functional, rather than administrative, definition, China's agricultural employment and population in 1982 are estimated to be only 69 per cent and 74 per cent of the national totals respectively. These figures are lower than those derived from the existing widely-quoted sources. Some temporal and cross-country comparisons are also made. Preliminary findings indicate that China has higher labour and population inputs in agriculture when compared to market economies at similar stages of development. Being typical of socialist economies, the policy of substituting capital for labour in industry, and stringent restrictions on labour and population movement between the agricultural and urban-industrial sectors, have contributed to this phenomenon. Finally, the Peasant and Non-peasant Population series, which are important planning parameters in the Chinese economy, are also reconstructed. The new additions to the existing data will be valuable for future research on China's employment and consumption.

INTRODUCTION

In his recent analysis of Chinese data, Keidel (1984, 13) pointed out that understanding China's economy and population requires knowledge, among other things, of the Chinese division of its population and institutions into state and non-state categories, misleadingly called "non-agricultural" and "agricultural". Despite the importance of this subject in the study of China's economy and society, many gaps remain in our understanding of the manner in which 'agricultural' and 'non-agricultural' populations are classified. These definitional problems, trivial as they seem to be at first glance, have affected in varying degrees the quality of research in which these agricultural statistics are involved, whether they refer to the agricultural or the non-agricultural population (and employment).¹ It is not difficult to see, for example, that misinterpretations of agricultural population statistics will easily lead to incorrect per-capita indicators for the agricultural sector as these are measures frequently employed in analyzing China's economic development. To avoid these pitfalls, a satisfactory understanding is necessary of the whole array of Chinese statistics pertaining to the definition and measurement of the agricultural population. These range from the *nongye renkou* (Agricultural Population), *nongmin renkou* (Peasant Population), and *xiangcun renkou* (Rural Population) to *gongshe renkou* (Commune Population). This is especially so in view of the insights gained from approaching the problems of Chinese economy from a dualistic standpoint by dividing

the economy and population into the agricultural and non-agricultural sectors (see, for example, Nolan and White, 1984; Perkins and Yusuf, 1984).

To illustrate the existing confusion, the percentages of China's 'agricultural' population in 1979-1980 reported or estimated by various agencies and researchers range from 60 per cent to 87 per cent (FAO, 1983, 66; Mu, 1984). Similarly, a closely related indicator, the 'agricultural' labour force in 1982, is reported by such authoritative sources as the Food and Agriculture Organization (FAO, 1983) and the Chinese census authorities (State Council and SSB, 1985) to be 275 million and 384 million respectively. These discrepancies naturally may lead to divergent opinions on China's population and employment structures, especially when these figures are compared with the past and with those of other countries.² Inevitably, the problem also affects the accuracy of analysis in which these indicators are involved.

The proliferation of statistics and information in recent years has made it possible to untangle the muddle and to present a relatively accurate picture. The primary objective of this paper is to clarify and explain the various existing definitions of agricultural and non-agricultural population statistics series and to make observations therefrom. In the following sections, a systematic survey of the various series and their definitions between 1952 and 1984 is presented in as much detail as can be gathered from the literature. An

attempt is then made to arrive at estimates that would approximate more the actual size of the agricultural population and labour force. The newly derived figures render comparison with those of other countries more meaningful. Based on temporal and between-country comparisons of the economic and population structures, some preliminary observations on the Chinese economy are made. Finally, an important statistical series for Peasant and Non-peasant Populations, newly re-constructed from *Zhongguo tongji nianjian 1985* (SSB, 1985a), is also presented. In short, this paper seeks to fill the existing gap in the database which is deemed necessary and fundamental to research on China.

DEFINITIONS OF STATISTICAL SERIES

The dichotomy 'rural-urban' is often used loosely and interchangeably with 'agricultural-industrial' in the literature because these two sets of concepts overlap in many ways. A better understanding of the Chinese situation, however, hinges on a more careful, precise distinction of these concepts. The analysis begins with a brief review of the urban and rural populations.

The 'urban' and 'rural' populations

Urban and rural populations refer to the populations classified by residence - whether in urban areas or outside them. In the case of China, the definition 'urban', in itself a complex and problematic subject, has been dealt with thoroughly elsewhere.

The following is a summary based on earlier research (Chan and Xu, 1985; Chan 1987; Ma and Cui, 1987).

Current official usage of 'urban' and 'rural' populations refers to the '*shizhen zongrenkou*' (Total Population of Cities and Towns) and the '*xiangcun zongrenkou*' (Total Rural Population). As explained in Table I, the former category includes some so-called 'peasant' population (i.e., A in Table I) classified under the present *hukou* (household registration) system, though these people may not necessarily be engaged in farming. What defines the urban or rural population is primarily their regular place of residence - whether inside or outside the designated urban areas. The Total Population of Cities and Towns, and the Total Rural Population year-end series are reported in Table II (Cols. 2 and 3). According to Chan (1987), the published figures of the Total Population of Cities and Towns for the years 1949-1982 approximate the *de facto* urban population and therefore can generally be used as a representative measure of China's urban population totals for that period. But changes in urban designations since 1983, resulting in significant overbounding in many urban areas, have rendered the statistics problematic and unusable for comparative purposes.

It is also common in China to define urban population just by singling out the 'non-peasant' segment of the population residing in urban areas (i.e., C in Table I) as '*chengzhen renkou*' (literally, 'Population of Cities and Towns'), and this has constituted an important source of

Table I Composition and Relationships of Urban, Rural, Agricultural and Non-agricultural Populations

By Residence	By Household Registration Status	
	Agricultural (822.5 mill., 81.0%)	Non-Agricultural (192.9 mill., 9.0%)
	A (63 mill., 6.2%)	C (148.2 mill., 14.6%)
DESIGNATED URBAN AREAS (211.2 mill., 20.8%)	I. "temporary" and contract workers, with/without dependents; II. "peasant-worker"; III. "peasants" in urban petty trades; IV. agriculturalists; V. dependents of all above.	I. staff and workers, and their dependents (including retirees, etc.) II. workers in individual enterprises and their dependents.
RURAL AREAS (804.2 mill., 79.2%)	I. agriculturalists except on state farms; II. labourers in various enterprises run by township and villages in rural areas; III. dependents of (I) and (II); IV. settled youths of urban origins.	I. workers in state-run agro-enterprises, and their dependents; II. state cadres, scientific personnel in rural areas, and their dependents.
	B (759.5 mill., 74.8%)	D (44.7 mill., 4.4%)

Note: figures in parenthesis represent the size and percentage (of national population totals) of the respective group in 1982.

Population Statistics
 1. Shizhen zongrenkou (Total* Population of Cities and Towns) = A + C
 2. Xiangcun zongrenkou (Total* Rural Population) = B + D
 3. Feinongye chengzhen renkou (Non-agricultural Population of Cities and Towns) = C
 4. Xiangcun renkou (Rural Population) = A + B + D
 5. Nongmin renkou (Agricultural Population) = A + B
 6. Feinongmin renkou (Non-Agricultural Population) = C + D

* Note that the word 'total' here is a direct translation of the Chinese word 'zong'. It does not necessarily mean a more inclusive concept in the context of rural population (compare "Total Rural Population" and "Rural Population").

Sources: Chan (1984); Chan and Xu (1985).

Table II China's Various Sectoral Population Series, 1962-84 (millions)

Year	National Totals	Total Rural Population (Xiangcun zongrenkou)	Total Pop. of Cities & Towns (Shizhen zongrenkou)	Peasant Population (Nongmin)
1952	574.82	503.19	71.63	480.25
1953	587.96	509.70	78.26	491.86
1954	602.66	520.17	82.49	503.56
1955	614.66	531.80	82.85	510.67
1956	628.28	536.43	91.85	516.91
1957	646.53	547.04	99.49	525.77
1958	659.94	552.73	107.21	525.32
1959	672.07	548.36	123.71	522.10
1960	662.07	531.34	130.73	510.82
1961	658.59	531.32	127.07	522.16
1962	652.95	536.36	116.59	533.32
1963	691.72	575.26	116.46	568.35
1964	704.99	595.93	130.45	577.38
1965	725.38	612.29	133.13	609.34
1966	745.42	628.20	135.48	627.42
1967	763.68	646.96	138.38	645.37
1968	785.34	646.96	141.17	663.78
1969	806.71	665.54	144.24	663.78
1970	829.92	705.18	149.35	705.64
1971	852.29	722.42	149.35	721.63
1972	871.77	738.66	153.45	740.09
1973	892.11	752.64	155.95	754.51
1974	908.59	763.90	160.30	766.50
1975	924.20	773.76	163.41	777.58
1976	937.17	783.05	166.69	787.07
1977	949.74	790.14	172.45	794.71
1978	962.59	790.14	184.95	800.26
1979	975.42	790.47	191.40	805.11
1980	987.05	795.65	201.71	812.10
1981	1000.72	799.01	211.54	822.59
1982	1015.41	803.87	241.26	828.14
1983	1024.95	803.69	330.06	n.a.
1984	1034.75	704.69		

Table II (cont'd)

Year End	Non-Peasant Population (Feinongmin renkou)	Agricultural Population (Nongye renkou)	Non-Agr. Population (Feinongye renkou)	Commune Population (Gongshe renkou)
1952	94.56	491.91	82.91	
1953	96.10	500.67	87.29	
1954	99.10	510.37	92.29	
1955	103.98	521.30	93.35	n.a.
1956	111.37	528.26	100.02	
1957	120.77	540.35	106.18	
1958	134.62	537.84	122.10	
1959	149.97	536.40	135.67	560.17
1960	151.26	524.76	137.31	554.43
1961	136.43	534.44	124.15	
1962	119.63	560.24	92.71	n.a.
1963	123.37	575.88	115.84	568.33
1964	127.61	588.22	116.77	575.72
1965	134.28	604.16	121.22	591.22
1966	136.08	622.02	123.40	606.48
1967	136.26	637.31	126.37	
1968	139.97	659.80	125.54	
1969	142.93	682.68	124.03	n.a.
1970 ¹	144.83	703.32	126.60	699.84
1971	146.65	718.79	133.50	716.11
1972	150.14	735.45	136.32	731.81
1973	152.02	752.10	140.01	747.98
1974	153.98	767.80	140.79	763.89
1975	157.29	781.42	142.78	777.12
1976	159.59	792.00	143.17	787.45
1977	162.67	802.80	146.94	796.88
1978	167.88	810.29	152.30	803.20
1979	175.16	813.56	161.86	807.39
1980	181.94	819.04	168.01	810.96
1981	188.61	826.59	174.13	818.81
1982	192.82	836.31	179.10	827.99
1983	196.80	841.18	183.77	835.36
1984	n.a.	837.90	196.85	843.01

Note: Some of the figures may not add up to the national totals due to rounding.

Sources:

Column 1, 2 and 3: SSB (1985a, 185).

Column 4: Derived from the mid-year series in Appendix 1 (col. 4) according to the following formula:

$$\text{Nongmin}(t) = \text{TP}(t) \times (\text{PP}(t-1))/2$$

where TP(t): the nation's population totals at year-end t;
and PP(t): the proportion of the mid-year Nongmin as the mid-year national totals at year t i.e. MP/MTP in Appendix 1.

5: The Feinongmin figures are derived residually.

6: The Nongye renkou is from Ministry of Commerce (1984, 487)

7: The Feinongye renkou series is derived residually.

8: The Gongshe renkou is from SSB (1983a, 147); SSB (1984a, 131) and SSB (1985a, 237).

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confusion. This usage considers all other populations (i.e., A + B + D in Table I) as *xiangcun renkou* (Rural Population). As Chan and Xu (1985) point out, in the Chinese literature published prior to 1983 the *shizhen zongrenkou* series of the pre-1964 period was mixed with the *chengzhen renkou* series of the post-1964 series and appeared in many sources as a single series, thus providing another fertile source of confusion. Unaware of the precise change, many Western researchers have been misled (e.g. Kirkby, 1985).

The 'agricultural' and 'non-agricultural' populations

The definition of agricultural population is internationally accepted as all persons depending for their livelihood on agriculture, that is, all persons actively engaged in agriculture (the agricultural labour force) and their non-working dependents (FAO, 1983). Agriculture generally includes crop cultivation, forestry, hunting and fishing. In China the terms 'agricultural labour force' and 'agricultural employment' can be treated as identical since open unemployment appears to be almost a purely urban phenomenon, especially in the pre-reform era.

Three closely-related series measuring different categories of 'agricultural' populations, based more on administrative arrangements than occupational characteristics, are in use in China. The *nongmin/feinongmin* or *feinongye jumin* (Peasant³/Non-peasant Populations) series, defined by the *hukou* criterion, forms the basic building block (Tables I

and II). Although this series has not been released by the statistical authorities, the importance of classifying population by *hukou* is obvious in mainland China. In contrast to many other countries, where household registration is simply a record of (legal) residence, in China household registration status in fact defines one's standard of living. Entitlement to rations, state-sector employment, and accessibility to state-subsidized social services are all determined by household registration status. To differentiate the accessibility to resources, the Chinese populace has actually been divided into two large socio-economic groups (or strata) based on *hukou* classification.⁴ Thus it is only natural to find that the Peasant and Non-peasant Population statistics are also important parameters for economic planning as is evident in the frequent references to these two categories of population in many State Statistical Bureau's tabulations and other publications, especially when consumption and employment are concerned (see, for example, SSB, 1985a, Sections 7 and 13; Yin, 1983, Chapter 2). Many of those who register with marriage match-making services in urban China often explicitly express preference for their prospective spouses to have non-agricultural status for easily understandable reasons. In essence, the *hukou* classification primarily reflects the two rather separate, but fundamental, social and economic institutions - the state and the non-state sectors - that make up - or divide - the Chinese economy.

The *hukou* system was restored in the early 1950s by

the new Communist government originally to serve a multiplicity of purposes including the separation of agriculturalists from non-agriculturalists, residence registration and distributing food rations. It is very likely that households designated as peasants under the *hukou* criterion in those days were true agriculturalists, people who tilled the soil and raised animals together with their dependents but still excluding administrative and technical personnel in the countryside. However, the *hukou* system has over the years functioned more and more as a distribution mechanism, serving primarily to determine one's entitlement to rations, employment and social services, rather than as a statistical scheme of recording residences and occupations. Typically, regardless of their occupations or places of residence, persons registered as non-peasants, are guaranteed certain monthly supplies of *shangpinliang* (commodity grain) and other goods from the state; those registered under the peasant category generally do not qualify for these privileges. A simple test of a person's household registration status, as most Chinese in the mainland know well, is thus whether he or she holds the entitlement to commodity grain (Chen *et al*, 1983, 128).

Because of the substantial differences in living standards and opportunities, there are always great incentives for peasants to change their registration status to non-peasants. With increase in the state's financial burden as a result of these conversions, they are tightly controlled by the government. The immense difficulties in converting household

registration status from 'peasant' to 'non-peasant' have resulted in a great number of 'peasants' continuing to hold their outdated peasant household registration, even though they have succeeded in shifting to non-agricultural jobs (A and Bii in Table I). The size of this 'peasant' labour holding non-agricultural jobs, over half of which are in township (commune) and village-run industries, is estimated at 42 and 57 million, or 12 and 16 per cent of total commune employment in 1983 and 1984 respectively (Table III, Col.2). It is therefore evident that these household labels may not actually reflect the nature of a person's occupation though the Peasant Population and Non-peasant Population statistics continue to be adopted conveniently, but often incorrectly, as measures for reporting agricultural and non-agricultural populations in many situations.⁵ Although the exact sizes of the Peasant and Non-peasant Population discussed above have never been made known, their numbers can actually be reconstructed by working through the consumption data presented in SSB (1985a). The details of the statistical manipulations will be explained later, but the results are presented in Table II for illustration and comparison.

Agricultural population (*nongye renkou*)

The second agricultural population series is the *nongye renkou* (Agricultural Population⁶). As shown in Table II, the size of *nongye renkou* is consistently slightly larger than the *nongmin*, the reason probably being that the former also includes

Table III China's Agricultural Employment and Population, Selected Years (millions)

Year End	Commune/Township Sector			State Agro-enterprises						
	EMPLOYMENT	POPULATION	EMPLOYMENT	POPULATION	POPULATION	POPULATION				
	Agric.	Non-agr.	Total	Agric.	Total	State Farms	Total	State Farms	Total	
	1	2	3	4	5	6	7	8	9	
1952										
1978	274.88	31.50	306.38	720.72	803.30	5.14	7.11	15.58		
1980	287.79	30.57	318.36	733.08	810.96	4.92	6.70	13.93		
1981	296.46	30.26	326.72	742.97	818.81	6.71	6.71	14.49		
1982	300.62	38.04	338.67	734.98	827.99	4.94	6.67	11.52	13.72	
1983	305.01	41.89	346.90	734.44	835.30	5.02	6.67	11.59	13.03	
1984	302.97	56.70	359.68	710.08	842.98		6.56	12.81		
	Agricultural Sector									
Year End	EMPLOYMENT		POPULATION		Contri- bution to NMP (%)	Output: Worker Ratio (Nation=100)				
	Size	% of Nation	Size	% of Nation			10	11	12	13
1952	173.17	83.5	491.91	85.6	57.4	68.7				
1978	281.99	70.8	736.30	76.5	32.7	46.2				
1980	294.49	70.3	747.01	75.7	35.8	50.9				
1981	303.17	70.0	757.46	75.7						
1982	307.29	68.7	748.71	73.7						
1983	311.68	67.8	747.47	72.9						
1984	309.53	65.0	722.90	69.9	37.6	57.8				

- 1 refers to employment in crop cultivation, forestry, animal husbandry, fishing and sideline production, but excludes rural industries (i.e. commune and brigade/township and village-run industries). SSB (1985b, 224).
- 2 refers to all commune employment not included in col.1. Major categories of non-agricultural employment are rural industries, construction, services, "contracted out" and "other" employment. These figures are tabulated based on the employment categories in SSB (1985b, 224). The 1978 figure is probably slightly over-estimated.
- 4 = $5 \times 1/3$.
- 5,6 ZGNMYJ, various years
- 8
- 9 = Agricultural Population - Peasant Population. (From Table II). The 1984 figure is estimated from the employment figure. Refer also to the text.
- 10 = $1 + 7$. The 1952 figure refers to *nongye* (agricultural labourers) in SSB (1985a, 213). See also World Bank (1983, 395)
- 11 as a percentage of nation's total employment (*shehui* (agricultural labourers) 213)
- 12 = $4 + 9$. The 1957 figure is the unadjusted *nongye renkou*.
- 14 The net output value of brigade/village-run industries is excluded in counting the net material product (NMP) of agriculture. The 1952 figure is from World Bank (1983). The 1984 figure is from SSB (1985b, 11). Others are estimates based on a gross value/net value ratio derived for brigade/village-run industries from the 1984 data.
- 15 = $14/11$.

employees and their dependents in state-run (*guoying*) agro-enterprises, mainly state farms (*nongchang*), forestry farms (*linchang*) and fishing grounds (*yuchang*). Workers in state enterprises are considered as *zīgong* (staff and workers). Together with their dependents, they are classified under the household registration system as non-peasants (in D in Table I). Their total number accounts for about 1.5 to 3 per cent of the Agricultural Population totals for most years over the past three decades. For 1980, 1982 and 1983, where data about the size of the population engaged in state farms are available, the figures are consistent with the estimates for the state agro-enterprises population based on the above interpretation.

The *nongye renkou* series is the usual set of statistics used officially to represent the agricultural population in China. It has most frequently been employed in Chinese writings as China's actual agricultural population series, one that is assumed to be comparable with those of other countries. For example, without pointing out that *nongye renkou* figures often include a large number of 'peasants' engaged in various types of non-agricultural activities, analysts of China's former Ministry of Agriculture compared China's *nongye renkou* directly with those of other countries and observed that by comparison with the declining trends in other countries, China's share of the agricultural population in the national totals had actually slightly increased between 1950 and 1978 (MAPAO, 1982, 84-85). *Nongye renkou* was probably an accurate indicator of China's true agricultural population

in the pre-1957 period because rural industrial employment was then minuscule and also because it was generally much easier for peasants to change their household registration status in the event of job or residence changes. It was only after the massive expansion of rural industries from the 1960s onwards, plus the stringent policy of restricting household registration conversions since the early 1960s, that the *nongye renkou* has become problematic as an indicator of the true size of China's agricultural population.

Commune population (*gongshe renkou*)

To complete the story, there is still another series known as the *gongshe renkou*, the Commune Population, known as Township (*xiang*) Population currently. Reflecting the history of the commune, the earliest of this series dates back to 1958. Explanations of the definition of the Commune Population given in one statistics book suggest that it is exactly the same as the Peasant Population definition above (Chen 1980, 19-21). The numbers of the Commune Population and Peasant Population series reported come very close for all the years starting from 1963, but are not exactly the same. The deviations between the two series could well be accounted for by the error caused by the averaging in the derivation of the year-end Peasant Population series from its mid-year counterpart. The discrepancies could also be in part attributed to the two registers kept by different government ministries for different purposes.⁷ But the data gaps in the early 1960s and

1967-70 may suggest that the collection of the Commune Population data was halted or seriously disrupted in these periods. The series' larger deviations from the two other agricultural population series in 1958 and 1959 are most likely associated with the difficulties and problems in keeping an accurate track of the population numbers in the countryside during the upheavals of the Great Leap Forward.

It should be briefly reiterated that employment in commune and brigade (township and village)-run enterprises is counted as part of agricultural employment in the State Statistical Bureau (SSB) regular statistics and is included in the three agricultural population totals above. The industries covered by these enterprises are mostly non-agricultural, ranging from manufacturing, transportation and construction to services (see SSB, 1985b, 224; SSB, 1983a, 206; World Bank, 1983). To obtain the actual size of China's agricultural population based on a functional definition, this portion of pseudo-agricultural workers and their dependents should be subtracted from the three agricultural population totals examined above. To illustrate these statistics at the regional level, Table IV and Figure 1 present three of the above four sets of figures for 1980 based on provincial units. Except for the three independent municipalities (Beijing, Tianjin and Shanghai), all provincial units were predominantly 'rural' and 'agricultural' based on these population measures in 1980. Among these units, the northeastern provinces had the highest 'non-agricultural' and urban percentages; they are all over 30

Table IV China's Populations by Provincial Unit and Category, 1980
Millions

Provincial Commune Units	Total Pop.	Rural Pop.	Urban Pop.	Agric. Pop.	Non-agric. Pop.	Commune Pop.	Non- Pop.
Beijing	8.86	3.14	5.72	3.76	5.10	3.74	5.12
Tianjian	7.51	2.39	5.12	3.57	3.94	3.55	3.97
Heilbei	51.58	44.97	6.71	45.53	6.15	45.38	6.30
Shanxi	24.76	19.73	5.03	20.35	4.41	20.36	4.40
Nei Mongol	18.77	13.42	5.35	13.81	4.96	13.20	5.57
Liaoning	34.87	20.68	14.19	22.49	12.38	22.03	12.84
Jilin	22.10	13.56	8.54	14.83	7.27	14.78	7.32
Heilongjiang	32.04	19.71	12.33	20.28	11.76	18.70	13.34
Shanghai	11.46	4.79	6.67	4.44	7.02	4.29	7.17
Jiangsu	59.38	50.36	9.02	50.89	8.49	50.52	8.86
Zhejiang	38.27	32.58	5.69	33.49	4.78	33.27	5.00
Anhui	48.93	42.30	6.63	43.35	5.58	43.17	5.76
Fujian	25.18	20.20	4.98	21.58	3.60	21.39	3.79
Jiangxi	32.70	26.56	6.14	27.63	5.07	27.20	5.50
Shandong	72.96	62.66	10.30	66.03	6.93	65.56	7.40
Henan	72.85	63.90	8.95	66.07	6.78	66.08	6.78
Hubei	46.84	38.98	7.86	39.35	7.49	38.56	8.28
Hunan	52.81	46.10	6.71	46.53	6.28	46.36	6.45
Guangdong	57.80	47.11	10.69	47.86	9.94	48.18	9.62
Guangxi	35.38	31.50	3.88	31.42	3.96	31.27	4.11
Sichuan	98.20	84.84	13.36	86.22	11.98	86.49	11.71
Guizhou	27.77	22.34	5.43	24.58	3.19	24.45	3.32
Yunnan	31.74	27.78	3.96	28.28	3.46	27.98	3.76
Xizang	1.85	1.61	0.24	1.57	0.28	1.54	0.31
Shaanxi	28.31	23.09	5.52	23.89	4.42	23.95	4.36
Gansu	19.18	16.28	2.90	16.51	2.67	16.31	2.87
Qinghai	3.77	3.02	0.75	3.07	0.97	2.72	1.05
Ningxia	3.74	2.94	0.80	3.07	0.67	2.90	0.84
Xinjiang	12.83	9.10	3.73	9.10	3.73	7.04	5.79
Other	4.50	0.00	4.50	0.00	4.50	0.00	4.50
National	987.05	795.64	191.40	819.04	168.01	810.96	176.09

Note: "Other" mostly refers to servicemen.
Source: ZGNYJ 1981; Academy of Social Sciences of China, 1986; and Zhongguo daike nianjian 1981.

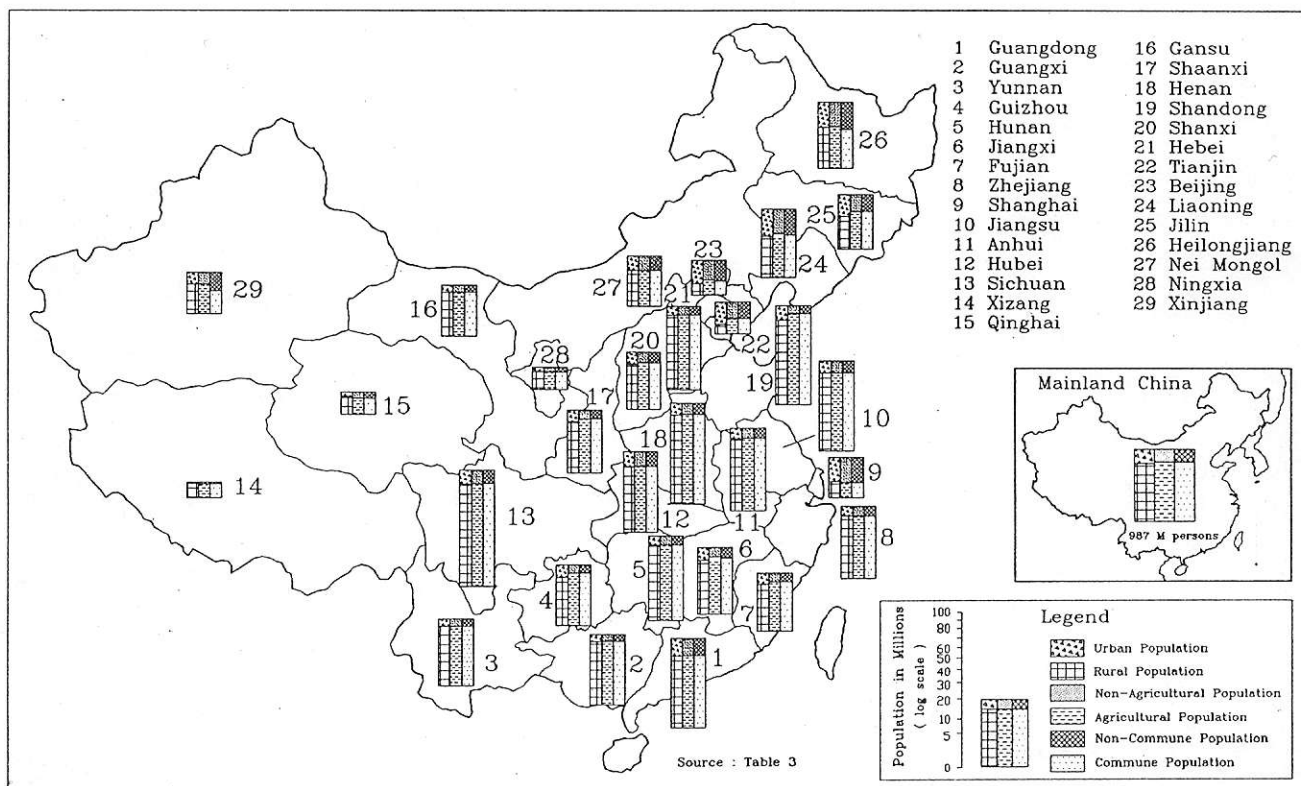


Figure 1. China's "Agricultural" Population, 1980

per cent, compared to the national averages for the three data sets of about 20 per cent. In general, the Agricultural Population and Commune Population are larger than the Rural Population. The sizes of Agricultural Population and Commune Population come very close in most cases. Only in areas such as Xinjiang and Heilongjiang where substantial employment in state agro-enterprises is found do these figures show significant, but explainable, deviations.

CHINA'S ACTUAL PERCENTAGES OF AGRICULTURAL EMPLOYMENT AND POPULATION

The proportions of employment and population in agriculture and those in non-agricultural sectors are the two sides of the same coin. These statistics are often used as indicators of the level of industrialization of an economy. Adjusted according to the foregoing interpretation, Table III presents estimates of the actual size of agricultural employment and population - defined to exclude all non-farm employment and population - in China for 1978-84 based on a detailed step-by-step derivation. Complete earlier time-series estimates of these still cannot be prepared because of the lack of information required on the annual employment and population sizes of rural enterprises and state-run agro-enterprises.

In Table III, the actual agricultural employment (or labour force) in 1984 (year-end) is estimated at 310 million,

which is the sum of commune employment *exclusively* in agriculture and that in state agro-enterprises (Col.1, 7 and 10), representing 65 per cent of the nation's total employment. The 1980 figure (70.3 per cent) comes very close to a previous World Bank estimate using the same principle of excluding non-agricultural employment from the official agricultural employment statistics (World Bank, 1983, 75). Similarly, the actual agricultural population is calculated at 723 million in 1984, or 69.9 per cent of the nation's total population (Cols.12 and 13, Table III).

The estimates here are naturally lower than the official regular agricultural employment and population figures, which include the rural industrial component as mentioned earlier. By contrast, the 1982 agricultural employment (*nongye laodongzhi*) and population (*nongye renkou*) shares implied by the official statistics are 71.6 per cent and 82.4 per cent respectively. (SSB, 1985a, 213; MAPAO, 1982, 487), significantly higher than the present estimates of 68.7 per cent and 73.7 per cent. It should also be noted that the widely quoted figure of 73.1 per cent for China's agricultural employment in the Census report of 1982 defined in the same way as regular official employment statistics once again overstates China's agricultural employment share (State Council and SSB, 1985). Interestingly, the figures published regularly by the FAO (1983, 66) give much lower shares: the agricultural labour force and population shares are estimated at only 60 per cent for 1980-82. As information on how the

FAO arrives at their figures is not available, we have not been able to explain the huge discrepancy. But it is strongly suspected that the FAO figures have substantially understated China's true agricultural labour force and agricultural population shares.

From these estimates it can be inferred that the Chinese labour composition is still very much an agrarian one, typical of low-income countries. A further international comparison based on comparable definitions in Table V shows that in 1980, despite a lower share of GDP from agriculture in China than in India and other low-income, mostly market economies, China's agricultural population percentage was actually higher than those of other countries. This point is more clearly illustrated by China's generally higher ratios between population and production output shares of agriculture in 1980 than other developing economies (Cols. 6 and 7). A similar result can be obtained by comparing China's agriculture output and employment shares with those of other low-income countries except, perhaps, India.

China's proportionally higher population and labour shares in agriculture imply that there is a larger gap in sectoral productivity ratio between the agricultural and non-agricultural, mainly industrial, sectors (World Bank 1983). China's deviation from other low-income market economies in this respect appear to be consistent with what has been observed in other socialist economies. According to Ofer (1976), these deviations are mainly attributed to the policies

Table V Percentage of Agricultural Labour Force and Population, 1980: International Comparison

Production Country	As Percentage of Nation's Total			Rural Contribution to GDP by Agr. (1979)	Population-Ratios		
	Agricultural Employment	Population	Rural Pop.		1	2	3
China	70	76	81	34	2.07	2.23	2.38
India	67-71	63	77	35-38	1.76-1.66	2.03-2.03	2.20
Low-income nations excl. China	73	71	71	45	1.62	1.58	1.58

Notes and sources

Rural Population: refers to *xiangcun zongrenkou*. SSB (1985a, 185)

Others: China - Table IV and World Bank, (1983, 73) China's GDP figure has been adjusted for differences in accounting conventions and relative price differentials.

India - Figures are presented here for comparison only. Divergent figures have been used in different studies for 1979-81. See World Bank (1982, Table 3); Mills and Becker (1986) and World Bank, (1985, Table 3.7 and 3.8) Other countries - FAO (1983); World Bank (1982, Tables 3 and 19).

of input substitution and urbanization economizing in socialist economies. Soviet-type economies adopting the Stalinist industrialization strategy generally allocate disproportionate capital investments to industry and less to agriculture and to other consumption-oriented sectors in order to maximize the growth of industrial output. This often results in a more capital-intensive industrial sector and a more labour-intensive agricultural sector. Moreover, to squeeze the most for industrial expansion, the rising costs of urbanization accompanying industrialization are also held down by controlling the population size in the urban-industrial sector through stringent restrictions on urban in-migration because such urbanization is regarded as non-productive. As a result, despite rapid industrial growth, the population and labour shares of the urban and the non-agricultural sectors in Soviet-type economies are significantly smaller relative to those in market economies at comparable stages of economic development. Stated differently, agriculture in socialist economies tends to have larger labour and population shares relative to market economies at similar stages.

Although it may be argued that similar input-substitution policies have also been practised in varying forms and degrees in some developing market economies pursuing an urban-biased growth strategy based on capital-intensive industries (Lipton, 1977), these economies are in general less equipped -lacking many of the power and policy instruments available to socialist central planners - and less effective in

implementing such a strategy. Even if the input-substitution policy may be effectively carried out in some market-oriented economies such as India,⁸ without the tool of direct administrative control of population mobility as in socialist economies, population shares in agriculture and in rural areas are typically lower than in socialist economies at a comparable stage.

It is now recognized that the economic growth strategy adopted by China prior to 1978 deviated little, if at all, from the Stalinist unbalanced approach. As a result, it is not surprising to see that post-1949 China's long-term shifts of the population and labour also appear to have followed what has happened in other Soviet-type economies. Complete time-series data are still hard to come by, but an approximation of these figures for 1952 is attempted (Table III), though data limitations probably render the 1952 estimates less reliable. A comparison of 1952 and 1978 shows that the share of agriculture in the net material product (NMP) fell drastically from 57 per cent to only 33 per cent during this period following rapid drive towards industrialization. The decline in the proportions of agricultural employment and population during the same period, however, was only modest, from 84 to 71 per cent in labour share and from 86 to 77 in population share (Ma 1983, Chapter 2). As a result, the growth of productivity (output per worker) in agriculture, if any, was much behind that in the non-agricultural sector in this period partly because of chronic under-investment in agriculture.⁹

Indeed, labour productivity in agriculture dropped significantly from 69 per cent of the average for the whole economy (as measured by the NMP) in 1952 to only 46 per cent in 1978 (Col.15, Table III).

Though to a minor degree obscured by the post-1978 policies which were more favourable to agriculture than previously, the observed structural differences of China's economy in 1980 relative to comparable market economies are still reflective of past policies favouring capital investment in industry and leaving agriculture to rely on a more labour-intensive approach. If earlier data were available, it would be expected that greater structural differences in the economy in, say, the late Maoist era might be observed. These differences will have been narrowed by the mid-1980s after the post-Mao policy, which gave more emphasis to raising agricultural labour productivity, has been in place for quite some time. Comparable international figures for the mid-1980s are yet to be released, but the declining trend in the ratio between output share and employment share in China's agriculture between 1952 and 1978 has been reversed in the post-1978 period (Col.15, Table III), a movement consistent with the prediction given here. Indeed, partly aided by institutional changes, agriculture has increased its share in the NMP, despite decreases in the employment and population shares; labour productivity in agriculture has climbed to 58 per cent of the average for the economy as a whole.

DERIVATION OF PEASANT AND NON-PEASANT POPULATION SERIES

Although the Peasant and Non-peasant Population series are two implicit series in the SSB (1985a), they are, as has been pointed out in the previous section, among the most basic parameters for Chinese economic and social planning because the distinction between peasants and non-peasants in China is not merely academic but real - in that it determines who gets what. These two important series can be recovered from China's annual net material product and consumption data in the SSB (1985a) by solving the following two simultaneous equations for MNP (mid-year Non-peasant Population) and MP (mid-year Peasant Population):

$$\text{ANPC} \times \text{MNP} + \text{APC} \times \text{MP} = \text{TC} \quad (1)$$

$$\text{MNP} + \text{MP} = \text{MTP} \quad (2)$$

where

ANPC = average non-peasants' consumption (in *yuan*),

APC = average peasants' consumption (in *yuan*),

TC = total private consumption (in 100,000,000 *yuan*),

MNP = mid-year Non-peasant Population (in 10,000),

MP = mid-year Peasant Population (in 10,000),

MTP = mid-year total population (in 10,000).

Given that ANPC, APC, TC and MTP are known,

$$\text{MNP} = (\text{TC} \times 10000 - \text{MTP} \times \text{APC}) / (\text{ANPC} - \text{APC}) \quad (3)$$

and

$$\text{MP} = \text{MTP} - \text{MNP}, \quad (4)$$

MTP is approximated from year-end population figures (TP) by the following formula except for 1953, 1963 and 1982 where more accurate census figures are available:

$$MTP(t) = (TP(t) + TP(t-1)) / 2 \quad (5)$$

where t is the year. The results and all other series are reported in Table VI.

An inspection of the two closely related series - the mid-year Agricultural Population (MA) and the mid-year Peasant Population (MP) - reveals that the ratio between the MP and the MA consistently falls within a narrow range of 0.964 and 0.991 as expected, for all the years except two years, 1962 and 1963 (Appendix 1, Col.3). The chaos caused by famine in and massive return migration to the countryside in the early 1960s probably affected the collection and the accuracy of the population data of these years, as may be suggested by the data gap in the Commune Population series in this period (Table II).

In the investigation of the data problem, consistency has been checked by attempting estimates based on known vital rates and migration data. The MP(1961) is assumed to be accurate, and analysis proceeds to the MP(1962) and MP(1963) by applying the annual natural increase rates for countries set out in the SSB (1985a) and the net rural-urban migration series estimated by Chan (1988) (Appendix 2). Although the coverage of these statistics is not strictly the same, in general the results indicate that the crude MP(1962) and MP(1963) in Appendix 1 (Col.1) deviate from the

Table VI Derivation of the Peasant and Non-Peasant Population Series: 1952-84

	1	2	3	4	5	6	7
	TP	MNP	TC	AFC	ANPC	MNP	MP
1951	56300.	-	-	-	-	-	-
1952	57482.	56891.0	434.	62.	148.	9451.0	47440.C
1953	58796.	58060.0	508.	70.	181.	9588.0	48472.C
1954	60266.	59531.0	527.	69.	183.	9759.6	49771.4
1955	61465.	60865.5	575.	76.	188.	10037.7	50827.8
1956	62898.	62146.5	613.	78.	197.	10777.9	51368.6
1957	64653.	63740.5	683.	79.	205.	11543.7	52196.8
1958	65994.	65323.5	683.	83.	195.	12572.8	52750.7
1959	67207.	66600.5	641.	65.	210.	14351.5	52249.0
1960	66207.	66707.0	683.	68.	217.	15395.5	51311.5
1961	65859.	66033.0	755.	82.	225.	14932.1	51100.5
1962	65295.	65577.0	781.	88.	226.	14777.0	50800.C
1963	69172.	67233.0	793.	90.	222.	14234.7	52998.0
1964	70499.	69835.5	841.	95.	234.	12774.3	57061.4
1965	89172.	71518.5	895.	100.	237.	11125.2	58393.3
1966	74542.	73540.0	969.	106.	244.	13730.1	59809.5
1967	76368.	75455.0	1026.	111.	251.	13460.7	61994.3
1968	78534.	77451.0	1020.	106.	250.	13820.8	63630.0
1969	80671.	79602.5	1068.	108.	255.	14169.6	65432.6
1970	82992.	81831.5	1145.	114.	261.	14430.0	67401.4
1971	85229.	84110.5	1195.	116.	267.	14524.4	69586.1
1972	87177.	86203.0	1263.	116.	274.	14777.8	71425.1
1973	89211.	88194.0	1364.	123.	306.	15257.6	72936.6
1974	90859.	90035.0	1396.	123.	314.	15108.3	74926.0
1975	92430.	91639.5	1450.	124.	324.	15683.5	75955.5
1976	93717.	93068.5	1502.	125.	340.	15750.9	77317.6
1977	94974.	94345.5	1553.	124.	351.	16165.2	78160.0
1978	96259.	95616.5	1673.	132.	383.	16569.0	79247.4
1979	97542.	96900.5	1910.	152.	406.	17209.1	79691.1
1980	98705.	98123.5	2223.	173.	468.	17812.3	80311.1
1981	100072.	99388.5	2473.	194.	487.	18596.0	80792.0
1982	101541.	100817.0	2668.	212.	500.	19120.8	81696.0
1983	102495.	102018.0	2939.	233.	523.	19378.6	82639.0

Notes and Sources:
 Notations and units are explained in the text. Columns 1-5 are from SSB (1985a, 38, 185 and 552); Columns 6 and 7 are computed by use of equations (3) and (4) in the text; Census Population figures are used for MNP (1953), MTP (1963), and MTP (1982).

expected sizes in Appendix 2 (Col.1) by a large margin. Another cross-examination through computing Peasants' and Non-peasants' per capita grain consumption levels also verifies this point.¹⁰ To rectify the anomaly, therefore, the MP(1962) and MP(1963) must be adjusted: this is done by applying a more plausible MP:MA ratio, interpolated from the between years (Appendix 1, Col.5). The adjusted MP(1962) and MP(1963) also come close to the estimates built directly on demographic rates in Appendix 2, and the resultant per capita grain consumption levels of Peasants and Non-peasants based on these adjusted numbers also fall within reasonable limits.¹¹ The adjusted MP series is reported in Appendix 1 (Col.4).

CONCLUDING REMARKS

In this paper a systematic review of the various series of China's agricultural and non-agricultural populations and their statistical intricacies has been undertaken. It has been pointed out that the official agricultural population (i.e., *nongye renkou*) and employment figures cannot be taken at face value. Instead, for comparative purposes, adjustments are necessary to bring them in line with figures published in the past and with those of other countries. According to the estimate given here, China's actual agricultural employment and population in 1982 are 69 per cent and 74 per cent of the national totals, respectively. These are lower than the official figures, which are 73 per cent and 82 per cent respectively.

Contrary to some previous observations cited before, there has been a downward trend in the shares of agricultural employment and population in the post-1949 era, though the pace has not been as fast as one would expect from the rapid decline in the output share of agriculture. Preliminary findings also suggest that China has higher labour and population shares in agriculture when compared to market economies at similar stages of development, a finding consistent with observations in other socialist economies pursuing the conventional Soviet growth strategy. The general input-substitution policy and the stringent control of labour and population transfers between the agricultural and urban-industrial sectors in these socialist economies are probably the main factors for these structural differences.

Equally important, to many prospective users of statistics, this detailed survey of the different versions of agricultural population statistics will hopefully lay to rest most of the existing confusion in this area and supply the users with the research tool to the expanding wealth of information on this subject. In view of the current policy concern over the increasing agricultural surplus population in China, the present survey, though pertaining to the period up to 1984, will also help establish more accurately the past patterns, upon which future trends may be more confidently projected and more appropriate intervention strategies derived.

An important set of Peasant and Non-peasant Population series is also reconstructed and presented. This set

is potentially valuable to current research on China, particularly when it is used in conjunction with many other SSB's statistics, because the peasant/non-peasant division of the population is a mere reflection of China's two basic socio-economic institutions - the state and the commune (or the township). It is along this dualism that the post-1949 Chinese economy is organized and run; that the population is differentiated; and, last but not the least, that many of the SSB's statistics are collected and published.

NOTES

1. Examples of inaccurate usage of China's agricultural population statistics can be in Mu Fu (1984), who treated 'rural' population as identical to agricultural population. Tang and Stone (1980, 43-47) derived their agricultural labour force figures by applying a uniform coefficient to the 'rural' labour force based on 'rural' population. Chow (1984, 94) took 'commune population' as agricultural population.
2. Comparisons with other countries are common in almost every study of China's population and employment structure, e.g. Sun (1984), and Taylor (1985).
3. For convenience and consistency with the usage in the literature, the term 'peasant' (though it may carry derogatory connotations) is used here only to represent its Chinese counterpart '*nongmin*' for want of a better alternative. For an interesting comment on this, refer to *Beijing Review*, vol.29, no.2 (January 13, 1986):34.
4. For a discussion of the social aspect of the household registration system, see White (1977).
5. Only in areas where there are no state agro-enterprises will the Peasant Population be identical to the Agricultural Population.
6. 'Agricultural Population' (capitalized 'A' and 'P') is used in the text to denote '*nongye renkou*', which is distinguished from the general term 'agricultural population'.
7. The Commune Population statistics are compiled by the Ministry of Agriculture, Animal Husbandry and Fishery (formerly, Ministry of Agriculture). It appears that they are used most often in reporting the size of agricultural labour and population in association with agricultural production. The Peasant Population statistics, on the other hand, are kept by the Ministry of Public Security, and the Ministry of Commerce (formerly, Ministry of Foods) for the purposes of distributing rations. It is also reported that prior to the 1982 Census, there was in general a 2-3 per cent

discrepancy between the number recorded in local population registers and the actual number of people who lived there. See also Lavelly (1982), and Goldstein and Goldstein (1985, 11).

8. It has been observed that agriculture's share of labour force in India is also lower than what would be predicted from its GDP share. See Mills and Becker (1986, Chapters 1 and 3). Stone (1986) also noted that the Soviet Union, China and India have similar strategies based on 'closed-economy growth models focusing on the capital-goods sectors' and have similar employment implications.

9. This is a preliminary observation. The subject is obviously more complex than could be adequately treated here. See also Perkins and Yusuf (1984, Chapters 1 and 2).

10. Briefly, when the unadjusted Peasant Population data are used to derive per capita grain consumption estimates in 1962 and 1963, the results turn out to be that the Peasants' per capita grain consumption (about 170 kg p.a. measured in trade grain) is much higher than the Non-peasants' (only 142-153 kg). This was very unlikely in the early 1960s when famine hit the countryside harder and is also at odds with the general grain consumption trends of the 1960s observed. See Chan and Tsui (in preparation).

11. Based on the adjusted MP(1962) and MP(1963), the per capita grain consumption level is estimated at 170-180 kg. p.a. for Non-peasants and 161-163 kg. for Peasants (Chan and Tsui, in preparation).

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Appendix 1 Adjustments for Peasant Population in 1962 and 1963
(Mid-year, number in millions)

Year, t	CRUDE		ADJUSTED	
	Agricultural Population MA	Peasant Population MP	Peasant Population MP	MP:MA Ratio
1952	491.91	474.40	474.40	0.9644
1953	496.29	486.00	486.00	0.9793
1954	505.52	497.71	497.71	0.9846
1955	515.84	508.28	508.28	0.9853
1956	524.78	515.69	515.39	0.9889
1957	534.31	521.97	521.97	0.9769
1958	539.10	527.51	527.51	0.9785
1959	537.12	522.49	522.49	0.9728
1960	530.55	513.12	513.12	0.9671
1961	529.57	511.01	511.01	0.9650
1962	547.34	508.00	532.36	0.9726*
1963	568.06	529.99	552.51	0.9726*
1964	582.05	570.61	570.61	0.9803
1965	596.19	583.93	583.93	0.9794
1966	613.09	598.10	598.10	0.9756
1967	629.67	619.94	619.94	0.9846
1968	648.56	636.30	636.30	0.9811
1969	671.24	654.33	654.33	0.9748
1970	693.00	674.02	674.02	0.9726
1971	711.06	695.68	695.68	0.9786
1972	727.12	714.25	714.25	0.9823
1973	743.78	729.36	729.36	0.9806
1974	759.95	749.27	749.27	0.9859
1975	774.61	759.56	759.56	0.9806
1976	786.71	773.18	773.18	0.9828
1977	797.40	781.80	781.80	0.9804
1978	806.55	792.47	792.47	0.9825
1979	811.93	796.91	796.91	0.9815
1980	816.30	803.11	803.11	0.9838
1981	822.82	807.92	837.92	0.9819
1982	831.45	816.78	816.78	0.9824
1983	838.75	830.50	830.50	0.9902

Sources:
 Column 1: $MA(t) = [AP(t-1) + AP(t)]/2$ where $AP(t) =$ Agricultural Population at year end t (from Table II);
 2: from Table VI, Column 7;
 3: (3) = (2)/(1);
 4: for 1962 and 1963, (4)=(1)x(5); for others, (4)=(2);
 5: * refers to the average of 1961 and 1964; others are from (3).

Appendix 2 Estimates of Peasant Population, 1962 and 1963
 Based on Demographic Rates
 (population size in millions)

Year	Peasant Pop. (mid-year)	Natural Increase Rate	Size	Net Rural In-migration	Peasant Pop. (end year)
t	MP	r	NI	RI	P
1					
1961	511.01 (given)	0.0241	0.62**	2.39**	514.02*
1962	528.07*	0.0270	14.25	13.79	542.09*
1963	553.34*	0.0327	18.09	4.40	564.58*

Notes and sources:
 * these are estimates prepared for testing data consistency in Appendix 1.
 ** refers to the second half of 1961.
 Column 1: Except for 1961 which is given by Appendix 1, $MP(t) = [P(t-1) + P(t)]/2$;
 2: Refers to natural increase rates for counties, from SSB (1984a, 83);
 3: $NI(t) = MP(t) \times r(t)$;
 4: from Chan (1988, Table 1);
 5: $P(1961) = 511.01 + 62 + 239$;
 others: $P(t) = P(t-1) + NI(t) + RI(t)$.