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LIGHT INDUSTRY IN COMMUNIST CHINA

CIA/RR 76
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CENTRAL INTELLIGENCE AGENCY

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(ORR Project 38.909)

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FOREWORD

This report describes the conditions and prospects of light industry in Communist China. It deals with an important sector of an economy in which the process of industrialization is being telescoped into a few years. Among the topics discussed are the change in ownership and control in light industry, the growth in production, and the development of productive capacity in new industrial centers.

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LIGHT INDUSTRY IN COMMUNIST CHINA*

Summary

Before World War II, production of light industry -- textiles, foodstuffs, paper and pulp, rubber products, pharmaceuticals, and the like -- constituted 80 percent of the value added in factory production in China. Under the Chinese Communist regime, the absolute level of production by light industry has been rising markedly; but the development of heavy industry has overshadowed every other economic objective, and as of early 1956 the proportion of production of light industry to total industrial production, in terms of value added, had fallen to 45 percent. Production of light industry proper is augmented by about 75 percent by production from individual handicraft enterprises and from peasants, each of these groups contributing approximately equal proportions. This nonfactory production is declining in relative importance as smaller productive units are gradually being combined with larger units or are being eliminated by denial of raw materials.

Since the establishment of the Chinese Communist government in 1949, private owners and managers in light industry have been reduced systematically, first to a position of subservience, then to a position of impotence. By the beginning of 1956 the formal conversion of private enterprises to joint public-private enterprises had been almost completed. Within the joint enterprises the reduction of the remaining powers of the former owners and managers will proceed systematically. The socialization of light industry generally has been carried on without interruption to production through the use of formal legal devices and "voluntary" methods.

In 1950, 1951, and 1952, production of Chinese Communist light industry was brought back to the prewar level by the restoration and modernization of the existing capital plant. Because the level of production in 1949 was less than two-thirds of the prewar level, high percentage gains were possible -- 28 percent in 1950, 25 percent in 1951, and 35 percent in 1952.

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* The estimates and conclusions contained in this report represent the best judgment of ORR as of 1 June 1956.

In 1953 and 1954, the first 2 years of the Chinese Communist First Five Year Plan (1953-57), production of light industry was raised appreciably through the construction of new plants and the imposition of ever-increasing quotas for production. The percentage increases in 1953 and 1954 were 14 and 16 percent, respectively. A small decrease of 3 percent was experienced in 1955 because the disastrous floods of 1954 had reduced supplies of the agricultural raw materials used by light industry. During 1955, however, expansion of productive capacity continued at a high level. In April 1956 the government ministers in charge of light industry announced that production of all the important products of light industry in 1956 would either reach or surpass the level originally planned for 1957. Their optimism is explained by the excellent crops of 1955 and the continued successful expansion of the capital plant.

If the goals planned for light industry in Communist China in 1957 are to be reached, there must be an annual increase of 12 percent in production in 1956 and in 1957. The capital plant and labor available are adequate for the achievement of the Plan goals. The main problem is the availability of raw materials -- weather conditions can greatly affect crop yields, and agricultural production may be lowered during the present intensive campaign for collectivization of farms in China.

The rates of increase of production given above apply only to the production of light industry proper: that is, to the production from modern and handicraft factories. Production from individual and peasant handicraft operations is declining or is at best increasing less rapidly than production of light industry proper. The rates of increase in light industry therefore overstate the over-all increases in production of the products of light industry. Fragmentary information indicates that the over-all rates of increase are about two-thirds of the rates given above for light industry proper.

Shanghai has been, and still is, by far the most important center of light industry in Communist China, accounting for from 40 to 70 percent of the production of most light industry products. Light industry in China was originally developed by Western capital and was largely confined to the treaty ports of the east coast. The fixed policy of the Communist government is the location of new light industry plants in the interior, nearer the source of raw materials and nearer the consumer. The productive capacity that existed in Shanghai in 1949 has been restored, but practically no new capacity is being located there. Some plants have been moved from Shanghai to the interior, but their number is small compared with the total number of plants in Shanghai.

The deterioration in the quality of production of light industry is a serious problem in Communist China. The efforts to obtain the greatest possible yield from raw materials, the constant striving to increase production per worker, and the absence of effective consumer policing of quality have all contributed to a lowering of quality. Examples of low-grade products are shoddy textiles, blemished paper, impure foods, and poorly constructed rubber products. In fact, a list of low-grade products cited by government officials and by people recently come from China would include all the products of light industry. The problem of the quality of export goods is unusually serious because China must meet the standards of foreign competitors if it is to obtain the foreign exchange it prizes so highly.

The increase in production of light industry is designed to further the industrialization of Communist China, not to raise levels of living. The government has established a rationing system that leaves only a bare minimum of goods in the hands of consumers. The requirements of foreign trade have an announced priority over domestic needs. China is exporting increasing amounts of the products of light industry in order to obtain additional machinery and industrial raw materials from abroad. Only 10 percent of its imports are consumer goods, compared with 50 percent before 1949.

The use of products of light industry to obtain producer goods from abroad is only one reason for the failure of Chinese Communist living standards to rise significantly in spite of the large increase in production by light industry. Other reasons are the relative decline in production from the nonfactory sector of the economy, the annual increase in population of 1.5 percent, and the deterioration in the quality of products.

I. Survey.

A. Economic Importance of Light Industry.

Modern industry in China began in the last decade of the 19th century, when cotton spinning mills were first established in Shanghai. 1/* In 1913 there was a total of 245 factories in China;

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in 1920, 673; and in 1930, 1,975. 2/ Light industry was the dominant form of Chinese industry until World War II and accounted for 80 percent of the value added in factory production in 1933. 3/ In addition to cotton mills, light industry establishments included silk mills, woolen mills, flour mills, sugar refineries, vegetable oil refineries, tobacco factories, paper mills, rubber factories, and match factories.*

The textile industry was the largest sector of industry in China and accounted for 40 percent of the value added by factory production in 1933. 4/ Almost all of the modern industrial enterprises were concentrated in Shanghai, Tsingtao, Tientsin, Hankow, Dairen, and Mukden. Shanghai was the largest of these industrial centers, having more than 40 percent of all Chinese factories, including most of the large ones. 5/ Industrialization was confined to these few large cities in the eastern coastal area because political concessions and access to international sea routes made business investment attractive there. In these cities, industrialization caused marked changes in a pattern of economic life that had remained undisturbed for centuries. Among these changes were the appearance of modern forms of business organization and modern financial procedures and the development of a proletariat. There were 1 million industrial workers in the early 1930's, 6/ and a more complete count in 1937 showed 2 million industrial workers. 7/ Most of the land in China and the majority of people, however, remained unaffected by the new economic forces.

From the early 1930's to the Communist victory in 1949, the Chinese economy suffered from a series of civil and international wars which caused widespread destruction and the disorganization of industry and commerce. Among the important developments of these years, aside from actual physical destruction, were the disruption of the traditional international economic relations of China, the partial industrialization of Manchuria by the Japanese, and the attempts of the Nationalist government to remove industrial equipment from the coastal cities to the interior.

The dominance of light industry in the prewar Chinese economy was to be expected in a nation in which the industrial revolution had begun late and had failed to reshape the basic structure of economic

* By the early 1930's, heavy industry had developed on a small scale in such fields as chemicals, machine building, shipbuilding, metalware, and electrical equipment.

life. Another explanation for the dominance of light industry is that the agricultural raw materials needed for light industry were generally available in China, whereas the mineral raw materials needed for heavy industry would not be available until industrialization was firmly established in the economy. Finally, as long as industry remained on a small scale and was dominated by foreign firms, there would be only a small market for the products of heavy industry.

The cotton textile industry, which was the first to develop in China, has remained the most important sector of light industry. In addition to cotton textiles and other branches of the textile industry, light industry in China includes the food-processing, paper, rubber, pharmaceutical, match, soap, pottery, medical equipment, and fountain pen industries. Other sectors of light industry, which are not discussed in this report, include the printing, enamelware, woodworking, leather, fur, and cosmetics industries. The various branches of the textile industry of Communist China are under the Ministry of the Textile Industry, and the other sectors of light industry are under the Ministry of Light Industry.* The dependence of light industry upon agricultural raw materials, in contrast to the dependence of heavy industry upon mineral raw materials, has been mentioned. Light industry is characterized also by the use of simple rather than complex methods of production, by the use of light rather than heavy capital equipment, by the employment of large numbers of female workers, and by the production of consumer rather than capital goods. These characteristics of light industry help to explain why a large part of its production has been, and still is, produced outside the modern factory system -- that is, in small establishments or on farms, by methods based on ancient crafts and skills, employing primitive types of tools and machinery.

* A small amount of food processing is under the Ministry of Food. The pottery industry is under the Ministry of Local Industry, which also has jurisdiction over numerous small plants producing a wide variety of products that ordinarily would fall under the Ministry of the Textile Industry or the Ministry of Light Industry. Since the completion of this report the government of Communist China has announced (on 12 May 1956) a reorganization of economic ministries, including some which control light industry. A new Ministry of Food Industry has been established to control the food-processing industries, jurisdiction over which was previously shared by the Ministry of Light Industry (now reduced in size), the Ministry of Local Industry (now abolished), and, to a lesser extent, the Ministry of Food.

Of the total economic activity of Communist China in 1956, about 15 percent is in industry. For the purposes of economic planning and economic reporting, industry (including light industry) is divided into (1) modern industry, that is, industry using the power-driven machinery of the industrial revolution, and (2) factory handicraft industry, which is composed of factories and workshops in which operations are carried out by hand, with or without the assistance of simple machinery and equipment or motive power. This breakdown of industry does not include individual handicraft enterprises, in which the owner or his immediate family, assisted by no more than three hired workers or apprentices, constitutes the labor force. Nor does this breakdown of industry include peasant handicraft production, by which the peasant supplements his income in the off-season. Table 1* shows the gross value** of production from five important agricultural and industrial sectors of the economy of Communist China but does not cover services, transportation, government, or trade.

If the gross value of production is taken as the measure, 55 percent of Chinese Communist industrial production is accounted for by consumer goods (see Table 2***). If value is taken as the measure, however, the figure would be no higher than 45 percent. Although this latter figure for consumer goods may be used as an estimate of the place of light industry in the total industrial production of Communist China, some producer goods, such as industrial papers, are produced by light industry, and some consumer goods, such as electric fans, are produced by heavy industry.

In the food-processing industry of Communist China, where the value added in the processing stage is only a small part of the sales price, the gross value figure overstates the importance of the industry to the economy. High taxes on luxury products of light industry, such as cigarettes and wine, would lead to overstating the importance of light industry. On the other hand, the prices of some heavy industry products are high compared with prices in Western countries and in the USSR, 8/ and this factor would tend

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* Table 1 follows on p. 7.

** Gross value in Table 1 is given in Chinese Communist yuan. The conversion factor for yuan used throughout this report is: 2.367 yuan equal US $1.

*** Table 2 follows on p. 8.

Table 1

Gross Value of Agricultural and Industrial Production in Communist China a/
1949, 1952-54, and 1957 (Plan)

Sector of the Economy	Value b/ (100 Million Yuan)					Percent of Total Agricultural and Industrial Production				
	1949	1952	1953	1954	1957 (Plan)	1949	1952	1953	1954	1957 (Plan)
Modern industry	79.1	220.5	288.1	339.9	450.0	17.0	26.7	30.4	32.8	36.0
Factory handicraft industry	28.7	49.6	67.7	75.3	85.6	6.2	6.0	7.2	7.3	6.9
Individual handicraft enterprises c/	32.2	70.7	86.3	96.1	85.8	6.9	8.5	9.1	9.3	6.9
Handicraft production cooperatives	0.15	2.5	4.9	8.5	31.9	0.03	0.3	0.5	0.8	2.5
Agriculture and subsidiary production	326.0	483.9	499.1	515.6	596.6	69.9	58.5	52.8	49.8	47.7
Total	466.1	827.2	946.1	1,035.4	1,249.9	100.0	100.0	100.0	100.0	100.0

a. For methodology, see Appendix A, p. 79, below. Because of rounding, figures may not add to totals.
b. All figures are expressed in 1952 prices and include commodity taxes.
c. Not including enterprises in handicraft production cooperatives.

Table 2

Gross Value of Production of Producer and Consumer Goods in Communist China a/
1949, 1952-54, and 1957 (Plan)

Item	Gross Value b/ (100 Million Yuan)					Percent of Total Production				
	1949	1952	1953	1954	1957 (Plan)	1949	1952	1953	1954	1957 (Plan)
Production of consumer goods by modern industry c/	48.1	113.2	141.4	164.1	207.0					
Production of consumer goods by factory handicraft industry	28.7	49.6	67.7	75.3	85.6					
Total production of consumer goods by industry	76.8	162.8	209.1	239.3	292.6	71.2	60.3	58.8	57.7	54.6
Total production of producer goods by industry c/	31.0	107.3	146.7	175.8	243.0	28.8	39.7	41.2	42.3	45.4
Total industrial production	107.8	270.1	355.8	415.1	535.6	100.0	100.0	100.0	100.0	100.0

a. For methodology, see Appendix A, p. 79, below. Because of rounding, figures may not add to totals.
b. All figures are expressed in 1952 prices and include commodity taxes.
c. In dividing industrial production of consumer goods between modern industry and factory handicraft industry, it is assumed that all industrial production of producer goods comes from modern industry.

to overstate the importance of heavy industry, assuming that the price relationships in an industrialized China should, and ultimately will, approximate those in other industrialized nations.

The various products of light industry in Communist China contributed to value added in 1952 as follows: textiles, 42 percent; processed foods and tobacco, 25 percent; paper and printing, 10 percent; paints, dyes, pharmaceutical products, and other chemical products included in light industry, 7 percent; rubber products, 5 percent; and all other products, including matches, ceramics, leather products, and woodworking products, 11 percent. Production of individual handicraft enterprises and handicraft production cooperatives amounts to almost one-half of the total production of light industry (see Table 1* and Table 2**). One-fifth to one-third of production of individual handicraft enterprises and handicraft production cooperatives is made up of simple producer goods such as farm tools and construction materials, with the proportion of producer goods probably rising. Thus production of consumer goods by individual handicraft enterprises and handicraft production cooperatives is equal in amount to 35 to 40 percent of production of consumer goods by light industry. Food processing is relatively a much more important part of the economic activity of individual handicraft enterprises and handicraft production cooperatives than of light industry proper. The more the state controls the economy, the more likely that enterprises now classed as individual handicraft enterprises will be included in factory handicraft industry because of a consolidation and/or renovation of productive facilities.

A further complication in any assessment of production of consumer goods in Communist China is the importance of peasant handicraft production. Because 80 percent or more of the households in China are still farm households, any large change in the amount of peasant handicraft production would mean important changes in the availability of consumer goods. Production of consumer goods from this source likewise is equal in amount to 35 to 40 percent of production of consumer goods by light industry, and this figure does not include any home processing of basic food crops on farms.

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* P. 7, above.
** P. 8, above.

The place of light industry in Communist China has been described in relation to that of heavy industry and in relation to that of the other sectors of the economy in which important quantities of consumer goods are produced -- that is, individual handicraft enterprises, handicraft production cooperatives, and peasant handicrafts. This report considers only light industry proper, but the importance of light industry must be gauged in part by the changes in its relationships with the other sectors of the Chinese economy that produce consumer goods.

B. Changes Since 1949.

The most important change in light industry in Communist China since 1949 has been the complete change in ownership and control. Originally, Chinese industrialization was financed largely by Western capital -- mostly UK, US, and French, with increasing Japanese and Chinese participation in the later stages. Foreign control was ended in 1949, when the Communists seized power. Since 1949, not only have many new state-owned factories been constructed, but also there has been a steady transformation of private enterprises in light industry to either public or public-private enterprises. The major stages of transformation are as follows: (1) an increase in the percentage of governmental orders in the total business of an enterprise; (2) the monopolization by the government of sources of raw materials and of outlets for the final product and a subsequent narrowing of manufacturing margins; (3) an increase in indebtedness to the government and "voluntary" application to the government for public participation in the enterprise; (4) a formal conversion to public-private status; (5) a continuing increase in governmental control over decisions regarding such matters as investment, wage rates, and production quotas; and (6) an ultimate transformation to a public enterprise. The observance of formal legal procedures and the employment of "voluntary" means save face and limit disruption of production.

In 1955, under pressure from Mao, the transformation of private enterprises in light industry to public-private enterprises was almost completed. By the start of 1956, less than 1 percent of the cotton spindles and power looms in Communist China were still privately controlled, and only 10 percent of the woolen textile industry remained to be converted. 9/ In Shanghai, all private textile mills, flour and rice mills, paper mills, and tobacco factories were under joint public-private operation. 10/

The second change in light industry in Communist China since 1949 has been the restoration and expansion of production. By 1951-52, production in the various sectors of light industry had been restored to the levels which had been reached before the long period of foreign and civil wars in the 1930's and 1940's (see Table 3*). During 1953, 1954, and 1955, the first 3 years of the First Five Year Plan, important additions were made to the capital plant of light industry, and the pace of work in light industry was greatly increased. As a result, by 1955, production of light industry had risen to levels which were 11 to 64 percent above those of 1952, depending upon the individual product (see Table 3).

In July 1955 the Minister of Light Industry said that production of consumer goods by Chinese Communist industry would increase 12.4 percent annually during the First Five Year Plan, 11/ or 79.7 percent during the entire period. Because production of consumer goods by industry is generally the same as production of light industry, the minister's statement may be compared with the following plans announced for individual light industry products: cotton yarn, to increase 38 percent in the 5-year period; cotton cloth, 47 percent; silk fabrics, 78 percent; sugar, 176 percent; flour, 56 percent; cigarettes, 77 percent; rubber shoes, 76 percent; matches, 39 percent; and machine-made paper, 76 percent. The weighted average of these planned figures is 61 percent (see Table 3, including methodology), or an annual increase of 10 percent for the First Five Year Plan. The difference between the minister's announcement of a 12.4-percent average annual increase and the calculated increase of 10 percent lies in the difference in increases for 1954 over 1952, which the Chinese Communists give as 47 percent (see Table 2**) and which is calculated in Table 3 as 32 percent. The rates of increase for 1957 over 1954 of 22 percent are the same in Table 2 and Table 3. These planned increases for 1954-57 seem to be within the capacity of Chinese light industry in spite of such setbacks as the serious shortages of agricultural raw materials caused by the floods of 1954. As shown below, however, the increases are not net increases.

In early 1956, leaders of both the Ministry of the Textile Industry and the Ministry of Light Industry announced that production of all the important products of light industry in 1956 would either reach or surpass the level originally planned for 1957. Many construction projects originally planned for completion in 1957 will be finished

* Table 3 follows on p. 12.
** P. 8, above.

Table 3

Indexes of Production of Light Industry in Communist China a/
Pre-1949, 1949-55, and 1957 (Plan)

1952 = 100

Year	Cotton Yarn	Cotton Fabrics	Silk Fabrics	Woolen Fabrics	Flour	Cigarettes	Sugar	Machine-Made Paper	Rubber Products	Matches	Total Light Industry	Percentage Increase Over Previous Year
Pre-1949 b/	(1930)	(1936)	(1936)	(1936)	(1935)	(1947)	(1937)	(1943)		c/		
	68	61	295	270	67	89	45	44	N.A.	55	78	
1949	49	33	20	81	43	60	43	29	55	74	46	
1950	66	50	61	65	40	71	52	37	52	64	59	28
1951	73	64	76	65	46	77	65	64	89	79	74	25
1952	100	100	100	100	100	100	100	100	100	100	100	35
1953	113	114	114	127	100	134	120	115	100	88	114	14
1954	127	129	121	135	110	141	139	149	131	114	132	16
1955	111	111	135	162	127	132	164	163	147	122	128	-3
1957 (Plan)	138	146	178	203	156	177	276	176	174	139	161	12 d/

a. For methodology, see Appendix A, p. 79, below.
b. Prewar is taken as the highest pre-1949 level, except for production of silk fabric, which reached its highest levels in the 1920's.
c. 1930-35 average.
d. The average rate of increase needed for 1956 and 1957 if the First Five Year Plan is to be fulfilled.

in 1956, according to these announcements. 12/ In addition, work will be started on new projects that had not been scheduled at all under the First Five Year Plan. In part, these announcements represent the prefulfillment claims typical of all countries of the Sino-Soviet Bloc, but the excellent crops of 1955 and the continuing rapid expansion of their capital plant give the Chinese Communists good reason for optimism concerning production in 1956.

The third change in light industry in Communist China since 1949 has been the continuing increase in the importance of the urban, market-oriented sector of light industry as compared with the rural, nonmarket-oriented sector. Government plans for light industry emphasize the construction of large plants equipped with modern machinery and the expansion of existing large plants. Some small, unmechanized enterprises are being combined into larger units, and their old equipment is being renovated or replaced. Other small enterprises are being permitted to continue in the old manner, encouraged by government decrees to increase production, but discouraged by the channeling of raw materials to the modern sector of light industry. Individual handicraft and domestic enterprises outside of light industry proper are feeling the effects of these government policies. It is claimed, for example, that production of cotton fabrics made in whole or in part from machine-made yarn will increase by 47 percent during the period of the First Five Year Plan, whereas production of cloth made solely from handicraft yarn will decline by 43 percent in the same period. 13/ Production of machine-made paper is also to increase by 76 percent during the period, whereas production of handmade paper will increase by only 42 percent. 14/ As a third example, production of sugar processed in factories is planned to increase by 176 percent, but handicraft sugar will increase by only 105 percent. 15/

The growing importance of the market-oriented sector of the economy is a normal result of industrialization, whether in a communistic or in a capitalistic society, but for the Chinese Communists the increased control over the daily livelihood of an increasingly larger number of people is a desirable political result. One result of the growth in the importance of the market-oriented sector is that government claims of increased production, because they cover only that part of production which is growing the fastest, overstate the rate of growth. The extent of overstatement for each industry depends upon the importance of the nonfactory sector in the total production of that industry and upon the degree to which the nonfactory sector has declined in importance. In 1955 when the Minister of Light Industry

foresaw an annual increase in production of consumer goods of 12.4 percent during the period of the First Five Year Plan, 16/ he was referring only to the production of modern industry and factory handicraft industry (the components of light industry proper). If allowance is made for the relative decline in production from sources other than light industry, the annual increase in production of consumer goods during the period of the Plan would be considerably less, perhaps two-thirds of the rate for light industry, judging from the fragmentary information in announcements concerning the Plan.* If the annual rate of increase in production calculated in Table 3** for light industry is a correct estimate for production of consumer goods, then the annual rate of increase for production of consumer goods from all sources would be about 7 percent. This figure is the rate of increase in production, not in the consumption by the Chinese people.

The fourth change in light industry in Communist China since 1949 has been a continuing shift to the west in the location of plants. Before 1949, Shanghai was the most important center for almost every type of production in light industry, having, for example, 45 percent of Chinese cotton spindles and 70 percent of the wool spindles, 17/ as well as the bulk of the productive capacity for silk, matches, and cigarettes. 18/ In spite of the Chinese Communist policy of locating new productive capacity in the interior, Shanghai still retains its historic position as the most important center of light industry, accounting for from 40 to 70 percent of the production of most of the products of light industry, and will remain the chief sector for at least the next 20 years. Almost all new construction in light industry, however, is in the new industrial centers of the interior, such as Chengchow, Sian, Peiping, Chungking, Shih-chia-chuang, and Wu-han. This policy of developing industry away from the coast is justified by the government as bringing productive capacity nearer to the consumers and to the raw materials and as lessening the vulnerability of industry to military attack. Some plants, notably those making textiles, have been moved from Shanghai to the interior, but the number of plants moved is small relative to the total number of plants in Shanghai.

The fifth change in light industry in Communist China since 1949 has been a general decline in quality of product. Instances are cited in the Chinese Communist press, as well as by people

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* For methodology, see Appendix A, p. 79, below.

** P. 12, below.

recently come from China, of shoddy textiles, impure processed foods, substandard medicines, blemished paper; poorly constructed rubber products, and the like. 19/ The list includes all the products of light industry. The same factors which affect other Sino-Soviet Bloc economies also affect quality adversely in Chinese light industry. These factors include the constant drives to meet ever-increasing quotas for production and the absence of an effective way for the consumer to police the products of light industry. A special factor lowering quality in Chinese Communist light industry is the unusually strenuous efforts made to reduce the quantity of raw materials used per unit of production.

One of the theoretical economic problems discussed by Chinese Communist leaders is whether the rate of growth of production must decline after the initial stages of industrialization. In light industry the rates of growth were 28 percent in 1950, 25 percent in 1951, and 35 percent in 1952 (see Table 3*). The restoration of production in idle factories and the extension of government control to an increasingly large part of the economy are in part responsible for the size of these figures. In contrast, during the first 2 years of the First Five Year Plan (1953 and 1954), the rates of growth were smaller -- 14 percent in 1953 and 16 percent in 1954 -- and in 1955 there was a decline of 3 percent (see Table 3). The decrease in production by light industry in 1955 was a result of the great floods of 1954 that reduced the supply of the agricultural raw materials used by light industry. For the last 2 years of the Plan, an annual increase of 12 percent will be required to reach the goals planned (see Table 3). The difficulties inherent in rapidly expanding production in agriculture, which is the source of most of the raw materials of light industry, constitute an important barrier to continued sizable increases in production by light industry.

C. Foreign Trade.

Chinese Communist foreign trade is designed to support its program of industrialization. The export of products of light industry is one way to earn foreign exchange for the purchase of machinery

* P. 12, above.

and industrial raw materials. On the other hand, Communist China is reluctant to import the products of light industry and raw materials for light industry. If raw materials for light industry, such as Egyptian cotton, must be imported, the government makes special efforts to make China self-sufficient and emphasizes the reduction of waste of these materials in production. Other raw materials that are imported for Chinese light industry are rubber, cured tobacco, jute, and wool tops.

Only about 10 percent of Chinese Communist imports in 1954 were consumer goods, whereas before 1949 the proportion was more than 50 percent. 20/ The consumer goods currently imported are mostly textiles, paper, medicines, sugar, and educational materials. Usually they are special types of products which are not readily available from domestic industry, such as rayon yarn, industrial papers, new drugs, and technical books.

Products of light industry are more important in the exports of Communist China than in its imports. Especially important are the products of the food-processing industry, such as tea and vegetable oils. Raw silk and silk fabrics are traditional Chinese exports which remain well known in world markets and are more important in foreign than in domestic trade. Other products of light industry which are exported are cotton fabrics, cotton knit goods, cigarettes, newsprint and other paper products, canned goods, porcelain products, and fountain pens. Although the products of agriculture and light industry dominate Chinese export trade, their relative importance will slowly decline as China becomes able to export machinery, chemicals, and other products of heavy industry. The problem of the deterioration of quality in the products of light industry is unusually serious in the case of export goods because China must meet the standards of foreign competitors if it is to obtain the foreign exchange it prizes so highly.

Eighty percent of Chinese Communist foreign trade was with countries of the Sino-Soviet Bloc in 1954, 21/ more than 50 percent of total trade with the USSR alone. Products of light industry that were important exports of China to the USSR in 1955-56 are raw silk and silk fabrics, jute, woolen textiles, cotton textiles, newsprint, vegetable oils, and tea.

D. Research.

The research program for light industry in Communist China for 1956-57 was drawn up at a meeting convened by the Ministry of Light Industry in December 1955. 22/ In the drug industry, experimental production

is planned for a large number of antibiotics, sulfa drugs, and other new medicines, and also for many of the ancient Chinese herb medicines. The medical equipment industry will experiment with electrical surgical knives, equipment needed for surgery using new refrigeration methods, and new bottles for penicillin. The paper industry will continue its experiments with new types of industrial paper and with the type of paper pulp necessary for the production of rayon. In the rubber industry the growing needs of Chinese industries require experimentation with new types and sizes of truck, tractor, and automobile tires and with rubber parts of airplanes, drilling and prospecting equipment, medical equipment, and motor vehicles. The food-processing industry is continuously experimenting with the canning and preserving of a wider variety of meat, fish, fruits, vegetables, and spices. The great new development in the relatively old and well-established textile industry will be the start of production of rayon yarn in the first rayon plant to be built by the Chinese Communists in Heilungkiang Province.

The research program for light industry includes plans for both the development of new products and the discovery of raw material substitutes and the improvement of quality. Furthermore, light industry will participate in the nationwide program of improving industrial machinery and will cooperate with those institutes engaged in systematic basic research. All these research activities will emphasize the contrast between the modern and the primitive sectors of the light industry of Communist China.

E. Consumer Welfare.

The products of light industry are of major importance to any study of consumer welfare in Communist China. It is from light industry that the consumer gets yarn and cloth, processed foods, cigarettes, footwear, medicines, soap, matches, and many other household goods.

The restoration of production of light industry to prewar levels by 1952 and the large increases in production during the first 3 years of the First Five Year Plan should have led to continued marked improvement in consumer welfare. This result has not followed, because the use of additional production for investment rather than for consumption is a guiding principle in all economic planning in Communist China. The people of a city or province, for example, are publicly

criticized for "wastefulness" if their monthly intake of food increases. Ordinarily, when there has been an increase in consumption of food in an area, it would have been expected that the government would take credit for the improvement in living conditions.

The use of production of light industry to acquire foreign exchange is given specific priority over domestic needs. 23/ Communist China exports increasing quantities of agricultural and light industry products in order to import increasing quantities of machinery and industrial raw materials. Other factors that must be considered in judging the effects of increases in production of light industry on consumer well-being are the annual increase of 1.5 percent in the population, the decreasing importance of production that remains outside the market (and thus partly outside the statistics), and the continuing deterioration in the quality of products.

Although the development of industrial capacity in Communist China takes precedence over increases in the grossly inadequate supply of consumer goods, it might be assumed that some improvement in consumer welfare would arise through the more even distribution of goods among the people. In contrast to the chaotic poverty before 1949, the rigorous system of state procurement and rationing would seem to guarantee at least a small amount of rice, flour, vegetable oils, and cloth to each citizen. Continuous tightening of the rationing system, however, suggests that, instead of being directed toward distributing goods evenly, the system is designed to control and reduce the use of resources for nonessential* purposes. Seemingly, the limit on what can be extracted from the consumer will be reached soon, especially in the case of food, because further reductions in rations will lessen productive efficiency. The goal is to leave a minimum of resources in consumer hands, and the system of controls throughout the entire Chinese Communist society is being rapidly extended to achieve this goal.

The development of the productive capacity of Communist China would permit rapid increases in consumer welfare in the near future. Yet the further industrialization proceeds, the greater are the demands of the leaders for putting more resources into increasing capacity and

* The term nonessential is used here in the Chinese Communist sense to refer to anything that does not directly further the program of industrialization and/or the program of militarization.

for economizing on nonessential, or consumption, uses of resources. The period of the First Five Year Plan was barely half finished when reports of goals for new construction during the Second Five Year Plan started to appear. The Chinese people are being forced to make sacrifices ostensibly for the benefit of future generations, and the end of their period of hardships is not in sight.

II. Textile Industry.

A. General.

1. Expansion Under the First Five Year Plan.

The textile industry is the most important sector of light industry in Communist China. It accounts for more than 40 percent of the value added by production in light industry and employs 720,000 people out of a total of 2 million to 3 million people employed in light industry. The program established by the Chinese Communists for the textile industry provides for the expansion of production, the construction of additional mills in new production centers, the more intensive use of existing mills, and the transformation of privately owned mills to joint public-private mills. The program is summarized in the First Five Year Plan, as follows 24/ (the summary is in general a fair, if overenthusiastic, description of what actually occurred in 1953, 1954, and 1955):

> Existing equipment will first be utilized to the utmost and all necessary adjustments made for its best use. Privately operated textile mills employing machinery for production will gradually be converted to public-private jointly operated enterprises to bring all these mills into the orbit of the state plan. To meet the requirements of the rising standard of living of the people and the gradual increase in cotton production, new mills will be constructed in those areas where it is advantageous to do so, and the foundations of the cotton textile industry in the interior will be expanded. The silk, wool, and hemp textile industries will be restored or developed on the basis of restoring or developing the production of silk, wool, and hemp; a synthetic fiber industry will also be established to lay the foundation for future expansion of the textile industry in all fields.

A total of 53 above-norm* construction projects are scheduled for the textile industry of Communist China under the Plan. Twenty-nine of these projects will be under the jurisdiction of the Ministry of the Textile Industry, 9 will be under local governmental units, and 15 will be under the joint public-private enterprises that control their own investment funds. 25/ All but 6 of the 29 projects controlled by the Ministry of the Textile Industry are in the cotton branch of the industry, the dominant branch. One of the exceptions is the first rayon plant to be built by the Chinese Communists. This plant, to be located in Heilungkiang Province, evidently at Mutanchiang, will have an annual capacity of 10,000 metric tons** of rayon fiber. 26/

Shortages of raw materials, especially of raw cotton, and the persistent decline in quality of product are the two greatest problems facing the textile industry.

2. Foreign Trade.

Raw silk, silk yarn, and silk fabrics have long been exported by China. Their importance to the export trade of Communist China is far greater than their importance in domestic production. The relative importance of silk and other textile products in Chinese Communist foreign trade can be seen in the following list showing the value of Chinese exports to countries outside the Sino-Soviet Bloc in 1954 27/:

* An above-norm construction project is one in which the cost exceeds a certain set level, regardless of whether the project is new construction, reconstruction, or rehabilitation. An above-norm construction project in the textile industry is one in which the cost exceeds 5 million yuan. The limit for the sugar, tobacco, rubber, paper, and pharmaceutical industries is 4 million yuan. The purpose of the distinction between above-norm and below-norm projects is to identify those projects which require special administrative supervision and special accounting controls.

** Tonnages are given in metric tons throughout this report.

Textile Product	Value (US $)
Raw silk	9,196,000
Silk yarn and fabrics	6,171,000
Cotton yarn and fabrics	5,140,000
Woolen yarn and fabrics	172,000
Hemp, jute, and ramie products	377,000
Textiles not specifically identified	9,685,000*
Total	30,741,000

One-half of the exports of Communist China went to Hong Kong, which in turn re-exports to countries outside the Sino-Soviet Bloc. China also exports important quantities of textiles to Australia, West Germany, India (mainly raw silk), Indonesia, Japan (mainly raw silk), Malaya, Pakistan, Switzerland, the Union of South Africa, and the UK.

Communist China exports the same types of textile products to the USSR and the European Satellites. Raw silk, silk fabrics, woolen textiles, jute products, cotton textiles, and carpets are specifically mentioned in Chinese Communist news releases as going to the USSR. Raw silk and silk fabrics are the most widely publicized group of textile exports going to the European Satellites. No specific figures are available for Chinese trade in textile products with the countries of the Sino-Soviet Bloc.

At the same time that Communist China is exporting textile products, it is also importing textile products, but its imports are much smaller in dollar value and are dominated by imports of rayon yarns from Japan and Italy. The following is a list of Chinese Communist imports of textile products from countries outside the Sino-Soviet Bloc in 1954 28/:

* This figure includes exports of US $4,256,000 of household linen to Hong Kong, most of which may have been cotton textiles. (All dollar values are given in US dollars throughout this report.)

Textile Product	Value (US $)
Silk and synthetic fabrics	186,000
Rayon yarn	4,694,000
Cotton yarn and fabrics	1,538,000
Woolen yarn, fabrics, and sewn articles	281,000
Hemp, jute, and ramie products (including gunny bags)	1,315,000
Textiles not specifically identified	306,000
Total	8,320,000

According to the US Department of Commerce, Chinese Communist exports of textile products to countries outside the Sino-Soviet Bloc in 1954 amounted to $30,741,000, compared with imports of $8,320,000. Approximately 87 percent of all Chinese imports in 1954 were capital goods, 29/ and 93.5 percent of Chinese imports from the Bloc were capital goods. 30/ The ratio of exports to imports in Chinese trade in textile products with the Bloc, therefore, is probably much greater than the ratio of exports to imports in Chinese trade in textile products with non-Bloc countries.

3. Reliance on Foreign Countries for Textile Machinery.

Before 1949, China had to import its textile machinery. From 1951 to 1954, 1 million spindles and 31,500 power looms were produced in Communist China, the increase of production of machinery having received high priority from the government. 31/ By May 1955 the government was asserting that China not only could meet domestic demand for textile machinery but also could export textile machinery. The ability to export is confirmed by other information. First, in August 1954, China officially opened a new modern textile machinery plant, the Chingwei Plant in Shansi Province, which can produce 200,000 spindles annually on a 1-shift basis. Second, the rate of expansion in the dominant cotton branch of the textile industry has been decreasing markedly in the last years of the First Five Year Plan, which means that the amount of equipment needed domestically is decreasing. Finally, between July and the latter part of November 1954, China exported 58,000 spindles to India and Burma 32/; and in April 1955, China agreed to export to Burma complete spinning and weaving mills.

The Peiping No. 1 Cotton Mill, which went into operation in September 1954, is the only new cotton textile mill for which the reliance on foreign machinery has been given wide publicity. This mill is equipped with 50,000 spindles made by the Texima Textile Machinery Plant of Chemnitz, East Germany. 33/ The looms were made in Communist China.

In spite of the official pronouncement of self-sufficiency in textile machinery, Communist China is still interested in importing textile machinery and spare parts from Japan. Contracts with Japan were made in the amount of 30 million to 40 million yen* between 1 March and 25 March 1955. 34/ Because China is relatively new in the field of textile machinery, it still depends for some types of precision machinery upon Japan and European countries. Much of the old machinery is of Japanese or UK manufacture, and it is sensible for China to rely on these countries for replacement parts. In 1954, Chinese Communist foreign trade with countries outside the Sino-Soviet Bloc involved textile machinery valued as follows 35/:

$698,000, imported from Hong Kong**
$274,000, imported from Japan
$357,000, imported from Switzerland
$175,000, imported from the UK
$ 28,000, exported to Hong Kong
$ 1,000, exported to Malaya

As regards the linen textile industry, the First Five Year Plan calls for 1 new flax textile mill and 2 flax raw material mills. All 3 mills, which are equipped with Soviet machinery, are now in operation.

Communist China is building a rayon plant in Heilungkiang Province under the First Five Year Plan. This plant may be the new modern textile plant which was announced in 1955 as under construction in Mutanchiang and which will produce the types of fabric used in rubber tires and conveyor belts. 36/ The equipment in this plant reportedly will be Chinese Communist made. 37/ If this Mutanchiang plant is the new rayon plant, this fact is a further indication of decreasing Chinese reliance on foreign countries for even specialized textile machinery.

* 360 yen equal US $1.
** The original source of most of this machinery probably was the UK.

B. Cotton Textiles.

1. Importance.

Cotton textiles are the most important branch of the textile industry of Communist China. In 1955, cotton fabrics made up 98.6 percent, by length, of total production of cotton, silk, woolen, and linen fabrics. Comparisons in terms of physical production overstate the importance of cotton fabrics, but, even if it is assumed that other fabrics have on the average 4 times the value per unit of cotton fabrics, cotton fabrics would still represent over 90 percent of the value of all fabrics. Most of the attention of the Chinese Communist press and radio is centered on achievements in the cotton branch of the textile industry. An incidental indication of the dominance of cotton textiles is the fact that the uniforms of the Chinese army are made almost exclusively of cotton. 38/

2. Changes Under Communist Control.

Three major developments have characterized the cotton textile industry of China under Communist control. First, according to the First Five Year Plan, the capacity and production of the industry are to be expanded greatly. The number of spindles in place in modern mills is to increase from 5,660,000 at the end of 1952 to 7,310,000 at the end of 1957, a gain of 29.2 percent (see Table 4*). During the period of the First Five Year Plan, 1,160 million yuan will be spent on construction in the textile industry, or 4.4 percent of the total expenditures for basic industrial construction of 26,620 million yuan. To judge from official news releases, which describe progress on individual construction projects, the expansion of capacity is proceeding according to plan. Production of machine-made yarn will increase by 38 percent during the 5 years, and production of fabrics made in whole or in part from machine-made yarn will increase by 46 percent in the same period (see Table 4*). Reports of the Chinese Communist press in April 1956 revealed that production of cotton yarn had decreased by 13 percent in 1955 as compared with 1954 and that production of cotton fabrics had decreased by 14 percent because of the poor cotton crop of 1954. These same reports predicted an increase in production of 30 percent for both yarn and fabrics in 1956. 39/

* P. 30, below.

The second major development is the growth of great new cotton textile centers in the interior of Communist China, away from the old centers near the east coast. (Of the old centers, Shanghai alone has had one-half of all the spindles in China.) The new centers will be closer both to the supply of raw materials and to the consumer. Of the new capacity that is being added during the period of the First Five Year Plan, two-thirds is to be located in the following four cities: Peiping and Shih-chia-chuang in Hopeh Province, Chengchow in Honan Province, and Sian in Shensi Province. The numbers of spindles to be added to capacity in these 4 cities are as follows: Peiping, 230,000; Shih-chia-chuang, 250,000; Chengchow, 280,000; and Sian (including Hsien-yang), 400,000. Although East China will retain almost the same number of spindles that it had before 1949, the percentage of spindles in East China will decline from 72.3 percent of the total in 1949 to 50.2 percent at the end of the First Five Year Plan (see Table 5* and Table 6**)..

The third major development is the tightening of government control over both production and consumption of cotton textiles in Communist China. In 1952, 38.2 percent of the 5,660,000 cotton spindles in China were owned by private industry, but by 1957 there will be no private cotton mills. It has been announced officially that in 1957 about 51.4 percent of the production of cotton yarn will be from public mills and 48.6 percent from joint public-private mills. 40/ By the beginning of 1956 the transformation was almost complete; less than 1 percent of the spindles and power looms remained privately owned. 41/ In September 1954 the government started the centralized procurement of raw cotton, the centralized distribution of raw cotton among the mills (whether public, public-private, private, or cooperative mills), and the centralized distribution of finished fabrics through an elaborate rationing system. 42/ This thorough system of control did not come into existence all at once but was the culmination of ever-increasing government supervision of industry from the producer of raw materials to the final consumer. Even before the Communists came to power, the Nationalist government had formed the state-owned China Textile Industries Incorporated from 68 Japanese-owned mills that were seized at the end of World War II.

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* P. 31, below.
** P. 33, below.

3. Value Added.

In the textile industry* state taxes are high in relation to the taxes in heavy industry and are one of the main devices for restricting consumption. Consumers are forced to pay prices which are greatly above costs, which means that their expenditures in real terms are kept low in spite of increases in production per man-hour. Workers are forced to produce more with little increase in wages.** A large part of the difference between the price of products of the textile industry and the price of its inputs is not value added by its economic activity but may be viewed rather as the financial counterpart of some of the real resources reserved for the heavy industry program. The wholesale value of the 2,330 million linear meters of cotton fabrics produced in modern mills in 1955 was 1,820 million yuan, 43/ and the wholesale value of the cotton yarn not used in textiles in the modern mills was 1,600 million yuan. 44/ The value added in 1955 in the cotton textile industry was roughly 1 billion yuan, distributed as follows: 430 million yuan in wages; 160 million yuan in depreciation; and 480 million yuan in interests, rents, and profits. The wage figure was derived by assuming that 90 percent of the 720,000 workers in the textile industry 45/ worked in the cotton textile branch at an average wage of 55 yuan per month. Capital plant is equal in value to 4,840 million yuan on the basis of the cost of new investment under the First Five Year Plan. The depreciation figure in value added was obtained by assuming an average life of 30 years for plant and equipment. The figure for interest, rents, and profits was arbitrarily assumed to be 10 percent of the value of capital plant.

4. Supply of Raw Cotton.

The major factor determining the amount of production of the Chinese Communist cotton textile industry is the supply of raw cotton. Incentives given the farmers to increase cotton acreage and production did not offset the losses caused by the floods of 1954, and because of the lack of raw materials the production of cotton yarn

* The statements made in this section apply to all light industry of Communist China as well as to the textile industry.

** In many instances when a private enterprise is transferred to public-private status, the workers are enjoined to accept a substantial reduction in wages in the interest of national reconstruction.

in 1955 was reduced about 13 percent compared with that in 1954. 46/ In 1955, however, the cotton crop was excellent, being 360,000 tons above the total in 1954 of 1,040 million tons, according to government claims. 47/ As for the other factors of production, urban labor is cheap and plentiful, and the amount of capital equipment has expanded rapidly. The original plans for the expansion of the cotton textile industry under the First Five Year Plan were cut by 800,000 spindles early in 1955, 48/ partly because of the general economy drive, but probably also because the original expansion plans seemed too ambitious in view of the shortage of raw materials.

5. Problem of Quality.

A second problem of the textile industry of Communist China is that of the quality of its product. The Minister of the Textile Industry in July 1955 admitted that the products of the textile industry had been of low quality, mentioning instances of "impure cotton yarn and cotton balls, spotty cloth surface, running colors, great shrinkage, dull colors of printed cloth, and monotonous designs." 49/ Reports of individuals who have left China after many years of residence confirm the serious deterioration in the quality of textiles during the past few years. On the other hand, the government is trying to improve quality, and there are many announcements to the effect that various mills have raised their percentage of first-class cloth.

Finally, in spite of the great efforts made to increase the capacity and production of the cotton textile industry, the level of production remains low, less than 9 linear meters of fabric per person in 1954, compared with about 26 linear meters per person in the USSR and about 60 linear meters per person in the US.

Data on the production of the cotton textile industry of Communist China, the location of its industrial capacity, and the major construction projects under the First Five Year Plan are shown in Tables 4, 5, 6, 7, and 8.* These tables are based on industry data for the years through 1949 and on official government statistics for the years after 1949. The government announcements about the growth of total capacity are consistent with the official announcements of the construction and renovation of individual mills. In a

* Tables 4, 5, 6, 7, and 8 follow on pp. 30, 31, 33, 34, and 35, respectively, below.

few instances, mills may not be completed on the dates specified because of the magnitude of the program, the continuous reassessment and revision of plans, and the lack of priority for investment in a consumer industry that is already big enough to use all the available raw materials. In early 1956, however, government spokesmen stated that the construction program in the textile industry will be almost completed by the end of 1956, a year before the end of the Five Year Plan.

6. Inputs.

Because cotton textiles account for about 90 percent of the value of all textiles produced in Communist China, the labor input in the cotton textile industry has been estimated as 90 percent of the 720,000 textile workers, or 650,000 workers. More than 60 percent of these workers are female. The average wage of textile workers is 55 yuan per month.

The capital input in the cotton textile industry is in terms of 50,000-spindle mills, each costing 33 million yuan, and 100,000-spindle mills, each costing 66 million yuan. 50/ These costs include the construction of complementary weaving capacity and the erection of cafeterias, billets, and other subsidiary buildings. In 1955, pressure was being exerted on the Ministry of the Textile Industry to reduce costs of construction. These costs can be reduced by relaxation of specifications for construction; by elimination and reduction of many welfare services, such as a reduction of sleeping space per worker in the billets; and by some genuine economies in operating techniques. In April 1956 the Minister of the Textile Industry said that a 100,000-spindle mill could be built at that time for the same expenditure that was required to build a 50,000-spindle mill 2 years earlier. 51/

The number of spindles and power looms to be added each year is shown in Table 4.* As for the depreciation of the present capital plant, spindles are used to the limit of their usefulness. Even if an average life of 30 years for plant and equipment is assumed to be normal, it is still impossible to estimate the quantity of equipment being removed from service each year. One factor to be considered is the availability of new equipment from the Chinese Communist textile machinery industry. Until 1956, all old prewar equipment had to be kept in use

* P. 30, below.

because the rate of expansion in the cotton textile industry strained the capacity of the domestic textile machinery industry. The reverse is true today, and the prospects of replacing a large proportion of the old equipment are good. In 1956, 250,000 spindles will be added to capacity in the cotton textile industry, and roughly 200,000 spindles will be available from domestic production for export and replacement.

Concerning the input of raw cotton in the cotton textile industry, Chinese Communist spokesmen have admitted that production of cotton yarn in 1955 was 600,000 bales less than in the previous year because of the 1954 floods. In 1955, production of cotton fabrics made in whole or in part from machine-made yarn was 4,242 million linear meters. If 400 million linear meters of fabrics made from handicraft yarn are added to 4,242 million linear meters, the yarn requirement for fabrics in 1955 would be 690,000 tons. The yarn requirement for cotton knit goods was about 100,000 tons, 52/ or a total requirement for yarn of 790,000 tons. To make 790,000 tons of yarn requires 849,000 tons of ginned cotton, assuming a 7-percent loss in processing. Additional cotton is needed for cotton padding, an important item in the making of winter clothing in Communist China. The Chinese Communist estimate of 1.04 million tons (ginned basis) as their cotton crop in 1954 is consistent, therefore, with the input requirements of the cotton textile industry.

Another important input in the cotton textile industry is electric power. In the first years of Communist control of China, shortages of electric power sometimes curtailed the workweek in the textile industry. No such shortages have been reported recently in the Chinese Communist press. Only one item has been found on consumption of electric power, a report that the Ta-ch'eng Textile and Dye Company located at Ch'ang-chou in Kiangsu Province had reduced the amount of electricity needed to spin a bale of cotton yarn from 260 to 180 kilowatt-hours in 1954. 53/*

* Continued on p. 36.

Table 4

Estimated Number of Spindles and Power Looms in Place and Output of Yarn and Fabrics by the Cotton Textile Industry in China a/
1930-38, 1946-55, and 1956-57 (Plan)

Year	Spindles in Place at End of Year (Thousand Units)	Power Looms in Place at End of Year (Thousand Units)	Output of Yarn from Modern Mills (Thousand Metric Tons)	Output of Fabrics from Modern Mills (Million Linear Meters)
1930	3,905	29.6	445	647
1931	4,054	29.2	432	809
1932	4,493	42.6	414	805
1933	4,640	42.8	423	939
1934	4,777	47.1	415	999
1935	4,952	51.0	413	1,036
1936	5,102	52.4	400	1,115
1937	5,042	58.4	370	N.A.
1938	4,300	N.A.	394	942
1946	4,636	65.0	240	491
1947	N.A.	65.0	353	819
1948	5,117	69.0	335	821
1949	5,144	68.2	321	809 (1,251)
1950	5,228	69.2	430	1,246 (1,927)
1951	5,390	71.2	478	1,594 (2,465)
1952	5,660	75.7	656	1,820 (3,829)
1953	5,881	82.0	741	1,970 (4,365)
1954	6,410	97.1	835	2,330 (4,932)
1955	6,881	110.6	726	2,330 (4,242)
1956 (Plan)	7,131	117.7	944	2,914 (5,515)
1957 (Plan)	7,310	122.8	907	2,950 (5,583)

a. For methodology, see Appendix A, p. 79, below. Figures in parentheses represent factory production of fabrics plus fabrics made by handicraft enterprises entirely or partially from machine-made yarn.

Table 5

Estimated Number of Cotton Spindles in China, by Area a/
1937, 1949, 1952, 1954, and 1957 (Plan)

Thousand Units

Area	1937	1949	1952	1954	1957 (Plan)
Northeast	157	346	481	531	560
North					
Hopeh	310	416	500	705	1,085
Shansi	75	48	48	48	98
Total	385	464	548	753	1,183
East					
Shanghai	2,666	2,380	2,380	2,297	2,247
Kiangsu	603	768	768	793	793
Chekiang	58	58	58	58	58
Anhwei	18	20	20	20	70
Shantung	60	67	67	71	71
Tsingtao	538	427	427	427	427
Total	3,943	3,720	3,720	3,667	3,667
Central and South					
Hupeh	334	145	257	312	312
Honan	107	20	158	238	438
Hunan	50	35	35	91	91
Kiangsi	20	30	30	107	107
Kwangtung	20	36	36	36	36
Total	531	266	516	784	984

a. For methodology, see Appendix A, p. 79, below. Figures may not add to totals because of rounding.

Table 5

Estimated Number of Cotton Spindles in China, by Area
1937, 1949, 1952, 1954, and 1957 (Plan)
(Continued)

Thousand Units

Area	1937	1949	1952	1954	1957 (Plan)
Southwest					
Szechwan	0	218	218	218	243
Yunnan	0	28	53	53	53
Total	0	246	271	271	296
Northwest					
Shensi	25	101	109	389	589
Sinkiang	1	0	14	14	30
Total	26	101	123	403	619
Grand total	5,042	5,144	5,660	6,410	7,310

Table 6

Estimated Percentage Distribution of Cotton Spindles in China, by Area a/
1937, 1949, 1952, 1954, and 1957 (Plan)

Area	1937 (Percent)	1949 (Percent)	1952 (Percent)	1954 (Percent)	1957 (Plan) (Percent)
Northeast	3.1	6.7	8.5	8.3	7.7
North	7.6	9.0	9.7	11.7	16.2
East	78.2	72.3	65.7	57.2	50.2
Central and South	10.5	5.2	9.1	12.2	13.5
Southwest	0.0	4.8	4.8	4.2	4.0
Northwest	0.5	2.0	2.1	6.3	8.5
Total	100.0	100.0	100.0	100.0	100.0
Number of spindles (Thousand Units)	5,042	5,144	5,660	6,410	7,310

a. Derived from Table 5, p. 31, above. Totals may not add because of rounding.

Table 7

Major Cotton Textile Construction Projects Under the First Five Year Plan of Communist China a/
1953-57

Plant	City	Province	Region	Number of Spindles (Units)	Number of Power Looms (Units)	First Date of Operation
Liao-yuan Cotton Spinning and Weaving Mill	N.A.	Liao-yuan	Northeast	50,000 b/	1,000 b/	1954
Peiping No. 1 Cotton Mill	Peiping	Hopeh	North	50,000	1,200	September 1954
Peiping No. 2 Cotton Mill	Peiping	Hopeh	North	100,000	2,500	2d quarter, 1955
Peiping No. 3 Cotton Mill	Peiping	Hopeh	North	80,000	3,600	1956
Shih-chia-chuang No. 1 Cotton Mill	Shih-chia-chuang	Hopeh	North	50,000	1,500	April 1954
Shih-chia-chuang No. 2 Cotton Mill	Shih-chia-chuang	Hopeh	North	100,000	2,500	3d quarter, 1955
Shih-chia-chuang No. 3 Cotton Mill	Shih-chia-chuang	Hopeh	North	50,000	2,000	1957
Hua-hsin Cotton Mill	Shih-chia-chuang	Hopeh	North	50,000	2,000	1956 b/
Han-tan No. 1 Cotton Mill	Han-tan	Hopeh	North	50,000 b/	1,500 b/	April 1953
T'ai-yuan Textile Mill	T'ai-yuan	Shansi	North	50,000	2,000	1956
Anhwei No. 1 Textile Mill	Ho-fei	Anhwei	East	50,000	1,700	1957
Chengchow No. 1 Cotton Mill	Chengchow	Honan	Central and South	50,000	1,500	1954
Chengchow No. 2 Cotton Mill	Chengchow	Honan	Central and South	30,000	1,000 b/	June 1953
Chengchow No. 3 Cotton Mill	Chengchow	Honan	Central and South	100,000	2,500	March 1955
Chengchow No. 4 Cotton Mill	Chengchow	Honan	Central and South	100,000	2,500	1956 b/
Kiangsi Textile Mill	Nan-ch'ang	Kiangsi	Central and South	50,000	1,500	October 1954
Hsiang-t'an Cotton Mill	Hsiang-t'an	Hunan	Central and South	50,000	1,000	February 1954
Northwest No. 1 Cotton Mill	Hsien-yang c/	Shensi	Northwest	50,000	1,000	1953
Northwest No. 2 Cotton Mill	Hsien-yang c/	Shensi	Northwest	50,000	2,000	1953
Northwest No. 3 Cotton Mill	Sian	Shensi	Northwest	50,000	1,600	December 1954
Northwest No. 4 Cotton Mill	Sian	Shensi	Northwest	100,000	2,500	2d quarter, 1955
Northwest No. 5 Cotton Mill	Sian	Shensi	Northwest	100,000	4,600	1957

a. For methodology, see Appendix A, p. 79, below.
b. The entry is based on analogy with other mills under construction.
c. The city is located approximately 20 miles from Sian and is included in the present report with Sian in the discussion of the rise of Sian as a great new textile center.

Table 8

Estimated Distribution of Spindles Added by Major Cotton Textile Construction Projects Under the First Five Year Plan of Communist China a/
1953-57

Thousand Units

Area	1953	1954	1955	1956	1957	Total
Northeast	0	50	0	0	0	50
North	50	100	200	180	50	580
East	0	0	0	0	50	50
Central and South	30	150	100	100	0	380
Northwest	100	50	100	0	100	350
Total	180	350	400	280	200	1,410

a. Derived from Table 7, p. 34, above.

C. Silk Textiles.

Raw silk and silk fabrics are the two main products of the silk textile industry of Communist China. Raw silk is silk yarn made from combining the filaments of from 35 to 40 cocoons. The reels of raw silk are packed in 133-pound bales, which are the common units of measurement and sale. A large part of Chinese Communist production of raw silk is exported, 63 percent being exported in 1954. 54/ Most of the remaining 37 percent went into production of silk fabrics, which are the second main product of the textile industry and which also are important in Chinese foreign trade.

Since 1929, the relative importance of raw silk in the Chinese economy has declined. Output of raw silk decreased from 252,000 bales in 1927 to 95,000 bales in 1935 because of the worldwide depression, the inroads of Japanese silk, and the competition of synthetic fibers. 55/ During the period of foreign and civil wars in the 1930's and 1940's the industry suffered further losses. Foreign markets for silk were completely disarranged, a number of silk filatures (reeling plants) were badly damaged, and many mulberry trees were destroyed or left untended. 56/ After 1949, production of raw silk recovered slowly, and output in 1952 was, at the most, 71,600 bales. 57/

The Chinese Communists have a standing policy which prohibits the expansion of mulberry tree acreage and relies on more intensive and efficient use of existing acreage to increase production. 58/ As with other textile raw materials, the government urges workers in silk-reeling plants to use fewer cocoons per pound of yarn. Such measures lessen the quality of product because silk filaments are not uniformly strong throughout their length.

Production of silk cocoons in 1955 is said to have been still far from the highest level in the nation's history. Output of cultured cocoons under the First Five Year Plan is scheduled to increase to 93,400 tons in 1957, a gain of 50.1 percent over that in 1952; and output of wild cocoons is to increase to 61,750 tons in 1957, a gain of 1.1 percent over that in 1952. 59/ The increase of 25.8 percent in production of all cocoons is far below the increase of 78.5 percent in production planned for silk fabrics, which suggests that a larger part of the raw silk will be used domestically. In December 1954, government leaders of the silk textile industry decided at a conference that production of raw silk was to be restored to its highest prewar level by 1962. 60/

East China, notably the Yangtze delta, is the most important area producing raw silk, accounting for more than 50 percent of total production and about 80 percent of exports. 61/ The two other important producing areas are Kwangtung Province and Szechwan Province.

According to the First Five Year Plan, output of silk fabrics will be 69.2 million linear meters in 1957, an increase of 78.5 percent over the 38.8 million linear meters produced in 1952. 62/ At the end of 1955 the Ministry of the Textile Industry was completing a large silk mill in Nan-ch'ung in Szechwan Province. Working 2 shifts, this mill can produce 930,000 linear meters of silk fabrics and 150,000 pieces of silk tapestry annually. 63/ The only other silk mill listed in the First Five Year Plan is one that will be built in Northeast China by local industry.

Chinese Communist exports of raw silk and silk fabrics are important in acquiring foreign credits for heavy industrial expansion. In 1950 the USSR was the best customer of Communist China for raw silk and silk fabrics, taking 35 percent of Chinese production. 64/ Raw silk and silk fabrics continue to be mentioned in accounts of Sino-Soviet Bloc trade, and there is no reason to suspect any change in the position of the USSR as the leading customer of China. Silk fabrics are unrationed in China, not because of a plentiful supply, but because there is so little available domestically that rationing is not worthwhile. Because the government procures at least 70 percent of the cocoons and either processes or procures all the manufactured silk, 65/ export commitments can readily be satisfied without new controls. The austerity program for consumers still discourages the purchase of costly fabrics like silk although in 1955 the government relaxed its efforts to enforce simplicity in dress.

Shanghai has always been the great center for the production of silk fabrics. [redacted] 50X1

[redacted] China had about 19,200 power and 61,000 manual silk-weaving looms with an estimated total capacity of 95 million linear meters of fabric in 1948. 67/ Of these looms, 18,000 power looms and 40,000 manual looms with a capacity of 55 million linear meters were in East China. Ninety-one percent of the looms were concentrated in the East China cities of Shanghai, Wu-hsi, Suchow, and Hangchow. 68/ Because the only large new mill to be built under the First Five Year Plan, 50X1 50X1

the plant at Nan-ch'ung in Szechwan Province, will have about 2 percent of Chinese Communist weaving capacity, there will be only a small shift to the west in the location of the weaving branch of the industry. Inasmuch as there will be no extensive investment in new mulberry acreage, the location of the reeling part of the industry also will be stable.

Estimates of the output of silk fabrics in China in 1936, 1949-55, and 1957 (Plan), derived principally from official government announcements, are shown in Table 9. These estimates include output from both modern and factory handicraft industry. By 1957, output of silk fabrics still will not equal that in 1936.

Table 9

Estimated Output of Silk Fabrics in China a/
1936, 1949-55, and 1957 (Plan)

Million Linear Meters

Year	Output
1936	114.3
1949	7.9
1950	23.6
1951	29.5
1952	38.8
1953	44.1
1954	47.1
1955	52.3
1957 (Plan)	69.2

a. For methodology, see Appendix A, p. 79, below. Figures include the output of silk fabrics from modern and factory handicraft mills.

The silk textile industry ranks second to the cotton textile industry as an employer of textile workers, with a normal postwar labor force of 50,000. 69/ This figure includes silk-reeling and silk-weaving operators but does not include the raisers of silkworms. Most of the operators in the silk textile industry are female, and wages probably are the same as in the cotton textile industry -- that is, 55 yuan per month. The capital inputs are not known for either construction or depreciation. A rough estimate of the value of the capital plant, based on the number of workers and the value of production, would be 5 to 10 percent of the value of the capital plant for cotton textiles. Only two mills are being built during the period of the First Five Year Plan, but increases in production are being achieved by the operation of previously idle capacity. Heat, light, and electric power are other significant inputs in the industry, but no figures are available.

D. Woolen Textiles.

There are two branches of the woolen textile industry in Communist China. One branch, devoted principally to production of rugs and carpets for foreign markets, is centered around Tientsin, and the other, which produces woolen yarns, piece goods, clothing, and blankets, is located in the Shanghai area. 70/ Seventy percent of the 150,000 woolen spindles in China were located in the Shanghai area in 1955. 71/

Before June 1950 the Chinese Communists gave the restoration and expansion of the woolen textile industry a low priority, partly because woolen products were regarded as luxuries and partly because imports of raw wool and woolen yarns would require scarce foreign exchange. Domestic wool is largely of inferior quality, suitable only for making rugs. Consequently, foreign wools and foreign yarns have historically been relied on for the production of woolen fabrics.

In mid-1950 the Chinese Communist government reversed its policy and started to promote the recovery of the woolen textile industry, believing that with the addition of certain controls the industry could be operated without being a drain on foreign exchange. The new measures were as follows: "Domestic spinning wool was supplied to woolen mills in the country, instead of being exported, for the manufacture of military uniforms and blankets. Wool unfit for mill consumption was exported in exchange for foreign raw materials to supply the domestic woolen industry. Taxes on woolen semimanufactures and finished products were abolished and the import duty on wool and

wool tops was refunded on the exportation of the finished product." 72/ Intervention in the Korean War provoked foreign economic restrictions against Communist China so that the expansion of the industry has not proceeded as rapidly as planned. Imports of high-grade wool continue although efforts are being made to improve the breed of native sheep in order to reduce imports.

One of the few available absolute figures on production of woolen textiles in Communist China is the announcement in the First Five Year Plan that output of woolen fabrics in 1957 will be 7.5 million linear meters, or 103 percent above that in 1952. 73/ Estimates of the output of woolen yarn and fabrics in modern and factory handicraft mills in 1936, 1949-55, and 1957 (Plan) are shown in Table 10.

Table 10

Estimated Output of Woolen Yarn and Woolen Fabrics in China a/
1936, 1949-55, and 1957 (Plan)

Year	Woolen Yarn from Modern and Factory Mills and Handicraft Factories (Thousand Metric Tons)	Woolen Fabrics from Modern and Factory Handicraft Mills (Million Linear Meters)
1936	11.0	10.0
1949	3.3	3.0
1950	2.8	2.4
1951	3.5	2.4
1952	4.0	3.7
1953	4.7	4.7
1954	5.5	5.0
1955	6.6	6.0
1957 (Plan)	8.3	7.5

a. For methodology, see Appendix A, p. 79, below. This table includes individual handicraft and peasant handicraft production.

The small output of woolen fabrics of 6.6 million linear meters in 1955 means little in the daily lives of the 600 million people in Communist China. The ordinary citizen avoids woolen clothing, not only because it is high in cost but also because it is a dangerous indication of luxurious living. 74/ Much of the production of woolen fabrics is used in army blankets and uniforms although most army uniforms are still made of cotton. The expansion of production of woolen fabrics has been possible with little addition to the capital plant, because there was much unused capacity in the woolen textile industry in the first years after 1949. From the beginning of 1950 to the end of 1953, three woolen mills were built. 75/ In view of the program for greater economy in capital construction in China and the emphasis on greater production from existing facilities, probably few if any additional projects to produce woolen textiles are under way. There is no mention in the First Five Year Plan of new woolen mills, although new cotton and silk mills and flax and rayon plants are mentioned.

All private retail trade in woolen yarn in the important Shanghai area as well as all private manufacture of woolen textiles in Shanghai was brought under joint public-private operation by the end of 1955. Fifty-two of the mills in Shanghai are being consolidated into 19 integrated mills, each with its own spinning, weaving, and dyeing facilities. 76/ The increase of production in modern mills has been accomplished partly at the expense of local nonfactory production. In the past, herdsmen kept part of the clip for their own use or for local trade, but now they are to be educated to the necessity of selling the entire clip to the state purchasing commission so that the industrialization of Communist China can be accelerated. 77/ The following three points should be noted about the campaign to educate peasants and herdsmen: (1) government control over the livelihood of these independent rural people has been greatly strengthened, (2) increased production of woolen fabrics is not to satisfy consumer needs but to support the government's program for industrialization, and (3) official figures for production of woolen fabrics will overstate the growth in economic activity because no account will be made of the loss in local handicraft production (nor can a reliable estimate of net production be made, perhaps even by the Chinese Communists themselves).

Inputs in the woolen textile industry of Communist China are not so well known as those for the cotton textile industry. The figures for the labor force in 1950 probably are little changed in 1956. There are 25,000 workers in the woolen textile industry, of whom 13,000 are employed

in Shanghai and 6,000 in the Tientsin area. 78/ About 3,700 of the 6,600 tons of woolen yarn produced in 1955 were needed to produce the 6 million linear meters of woolen fabrics produced in 1955, assuming that China is now able to produce sufficient amounts of the fine yarn required for woolen fabrics. The yarn of poorer quality is used for rugs and carpets, knitted goods, and handicraft and domestic production. To produce 6,600 tons of yarn requires 8,300 tons of wool on a degreased basis, or 16,600 tons on a grease basis. The capital input in the industry is small because production has not reached the prewar peak. The cost of expansion and of depreciation of integrated cotton mills has been given by the Chinese Communists as 660 yuan per spindle, a figure which is usable for wool with the following caution: the cotton cost figure refers to 50,000- and 100,000- spindle mills, and woolen mills are smaller, perhaps 5,000 spindles. The electric power requirements of the industry are not known.

E. Linen Textiles.

Construction work on the first large modern linen mill to be erected by the Chinese Communists began at Harbin in January 1950, and the mill was put into operation in September 1952. 79/ This mill is equipped with 15,000 spindles 80/ and 1,000 power looms, employs 3,000 workers, 81/ and has a capacity of 20 million linear meters of all types of linen fabrics. 82/ All the equipment of this mill was supplied by the USSR, and Soviet technicians directed the construction of the mill and trained the staff and workers. 83/

In April 1955, two new flax-processing mills at Hu-lan and A-ch'eng (near Harbin) went into operation. 84/ These flax-processing mills were designed by Soviet designers and have the latest types of Soviet-manufactured equipment. 85/ The production of these mills will equal the production of the 7 existing mills in Northeast China 86/ and will supply the linen mill at Harbin. With 3 shifts, these 2 new mills together can produce 2,000 tons of long fiber annually and more than 2,400 tons of short fiber. 87/

The First Five Year Plan states that the Ministry of the Textile Industry will construct 1 flax textile mill and 2 flax raw material mills in Northeast China. 88/ Presumably these three mills are the mills described above inasmuch as no others have been publicized

in the Chinese Communist press. Output of flax fabrics will reach 18.3 million linear meters in 1957, according to the Plan, compared with 283,000 linear meters in 1952. 89/ The linen mill at Harbin alone can supply the quantity of fabrics planned for production in 1957.

F. Rayon Textiles.

Under the First Five Year Plan of Communist China a new modern rayon fiber plant will be built by the Ministry of the Textile Industry in Heilungkiang Province. 90/ This plant will produce 10,000 tons of rayon fiber annually. 91/. It was announced in August 1955 that work had begun on a new modern textile plant at Mutanchiang in Heilungkiang Province. 92/ Although the type of textile to be produced by the new plant is not given, the statement that the plant will supply material for production of auto tires and conveyor belts and the location of the plant in Northeast China strongly suggest that this plant is the new rayon fiber plant. In addition to the building of this new plant, production at the two old Anlo (Shanghai) and An-tung rayon fiber plants is being restored. 93/ Meanwhile, however, China imports rayon yarn from Japan. For example, an agreement in August 1955 provided for the import of 500,000 pounds of Japanese rayon yarn to be shipped in August and September 1955. 94/ As in the case of woolen, silk, and linen textiles, the quantities of rayon textiles available by 1957 will be less than 1 or 2 percent of the amount of cotton textiles available. Wood pulp is scarce in China, and experiments are being conducted to find new sources of cellulose raw materials, such as cotton floss, husk cotton, bamboo pulp, and sugar cane dregs. 95/

G. Gunny Sacks.

In 1950 the 11 gunny sack plants in Communist China produced about 13 million sacks. Output in 1951 was almost 30 million sacks but still fell short of the requirements of the Chinese Communist economy. 96/ By 1957, according to the First Five Year Plan, 68 million gunny sacks will be produced, compared with 67,350,000 produced in 1952, an increase of only 1 percent. 97/ Because sacks are increasingly in demand for the transportation of many agricultural and industrial products, the failure to plan for expansion of the industry is difficult to understand. The explanation lies partly in the shortage of the vegetable fibers -- hemp, jute, flax, and ramie -- used in making sacking material. 98/ In 1955, output was 18 million sacks below that in 1954, because the serious floods of 1954 caused raw materials to be especially scarce. 99/

In 1954, Communist China imported through Hong Kong 2,238,000 gunny sacks valued at $698,000 and 902,000 square yards of linen, hemp, jute, and ramie fabrics valued at $606,000. 100/ The imports -- most of which probably originated in India -- included a broad variety of fabrics at widely varying prices.

In view of Chinese Communist failure to make full use of present capacity to produce gunny sacks, 101/ no major construction in this branch of the textile industry is to be expected. Because gunny sacks are industrial rather than consumer goods, continued imports of sacks and sacking material to meet the demands of an expanding domestic industry may be expected. In addition, efforts will be made to increase domestic production of hemp, jute, and the other agricultural raw materials for this industry.

III. Food-Processing Industry.

A. General.

Within light industry in Communist China, the food-processing industry ranks next in importance to the textile industry. The leading branches of the food-processing industry are flour milling, tobacco manufacturing, vegetable oil refining, sugar refining, tea processing, and salt refining.

Most of the production of the food-processing industry comes from numerous crudely equipped mills of small capacity located in rural areas. These mills use agricultural products grown locally, and their production is consumed locally. The mechanized modern sector of the industry, located mainly in the important coastal and river port cities, produces for urban consumption and for export. Shanghai is the most important center of the modern food-processing industry. The location of major production centers for the various branches of the industry is given in the discussions of individual products which follow.

Since 1949, there have been important changes in the food-processing industry of Communist China. The foreign influence, mainly US, UK, and Japanese, which had been largely instrumental in determining the location of the modern food-processing industry in the cities of the eastern coastal area, was eliminated. The Chinese Communist regime has adopted the policy of locating new productive capacity in the interior of the country nearer

the consumers and the sources of raw material and has relied on the USSR and the European Satellites for machinery and technical assistance. Consequently, Shanghai and the other cities of the east coast have been slowly declining in relative importance as the new industrial centers in the interior have been increasing capacity and production.

Besides the gradual shift in location of the food-processing industry of Communist China, a gradual change to modern methods of production is taking place. The change is slow because old methods have long been established in the rural areas and because the food-processing industry has a low priority in the Chinese Communist investment program. The increasing importance of the modern sector will be accentuated as the central government establishes control over supplies of raw materials at all stages of production. The increase in the relative importance of the modern sector of an industry means that the growth rates of the modern sector tend to overstate the growth rate of the whole industry.

The transformation of the modern sector of the food-processing industry to public or public-private status has progressed rapidly. By the end of 1955, 102/ for example, all of the private flour mills, rice mills, and tobacco factories in Shanghai had come under joint operation, and throughout Communist China the majority of private mills employing over 100 workers had been put into a public or public-private status. By the end of 1957, all but 11 percent of the food-processing industry above the individual handicraft level will be under state control, according to the First Five Year Plan. 103/

In the years immediately preceding 1949 the modern food-processing industry of Communist China operated at only a fraction of capacity because of the disruption of domestic and foreign trade. The first step taken by the Chinese Communist government was to restore operations in existing mills, and the next step was to build new modern capacity for the industry. The details of the present building program are given below in the discussions of the individual products.

At the beginning of 1956, two major problems faced the Chinese Communist government in the food-processing industry. The first was to obtain a constantly increasing supply of raw materials at a time when agriculture is being collectivized. The second was to raise standards of quality, which have fallen so low that they have been openly criticized. 104/

B. Flour Milling.

Flour milling is one of the most important branches of the food-processing industry of Communist China. Wheat is significant in the diet of about one-third of the population, including most of the people north of the Yangtze River. The government, through the state-owned China Food Corporation, controls raw materials, prices, and the marketing of flour, but many of the small mills are still privately owned. Although milling equipment was reported to be in good condition at the end of the civil war in 1949, an inadequate supply of wheat has prevented the mills from operating at capacity during the postwar years.

Because of the poor transportation and distribution systems, the bulk of the wheat grown in Communist China is processed in small local mills, and only about 20 percent of the crop is processed in the mechanized mills located in the urban centers. One hundred pounds of wheat are required to obtain 90 pounds of flour. A higher extraction rate would cause quality to fall.

In China, the principal flour mills are located in Shanghai, Wu-hsi, Suchow, Nanking, Hankow, Tientsin, Ch'ing-tao, T'ai-yuan, and Peiping. Shanghai has the largest and best equipped mills. In Manchuria the flour mills are concentrated primarily in the Harbin area, but important flour-milling capacity is also located in Ch'ang-ch'un, Ssu-p'ing, and T'ieh-ling.

The flour-milling industry of Communist China has been in trouble ever since the Communists came to power. During the Nationalist period, flour milling was concentrated chiefly in Shanghai and Tientsin and was largely dependent upon imported raw materials. After the Communists came to power, imports were cut off, and the coastal mills found themselves far from both domestic sources of raw materials and markets. Consequently, they have not been working at full capacity.

Estimated output of flour from modern mills is heavily concentrated in East China and North China, as shown in Table 11.*

* Table 11 follows on p. 47.

Table 11

Estimated Output of Flour from Modern Mills in Communist China, by Area, 1954 a/

Area	Output (Thousand Metric Tons)	Percent of Total
Northeast	244	7.4
North	1,079	32.7
East	1,320	40.0
Central and South	208	6.3
Southwest	50	1.5
Northwest	399	12.1
Total	3,300	100.0

a. For methodology, see Appendix A, p. 79, below.

The total flour-milling capacity of Communist China, including Manchuria, is estimated to have been about 3.3 million tons in 1952. 105/ Output of flour in 1952 was 2.99 million tons and is scheduled to increase to 4.67 million tons under the First Five Year Plan, an increase of 56 percent. 106/ In view of the large increase planned, it is interesting that only one above-norm project is scheduled for the flour-milling industry under the Plan. Major reliance is being placed on using idle capacity and on increasing effective capacity by intensive use of equipment. Estimates of the output of flour in China in 1931-37, 1946-55, and 1957 (Plan) are shown in Table 12.*

* Table 12 follows on p. 48.

Table 12

Estimated Output of Flour in China a/
1931-37, 1946-55, and 1957 (Plan)

Thousand Metric Tons

Year	From All Mills	From Modern Mills
1931-37 average	16,700	2,000 (1935)
1936	b/	1,900
1946	15,500	1,300
1947	16,100	N.A.
1948	17,400	800
1949	13,900	1,300
1950	14,500	1,200
1951	14,800	1,400
1952	15,700	3,000 c/
1953	16,300	3,000
1954	18,400	3,300
1955	17,400	3,800
1957 (Plan)	17,400	4,700

a. For methodology, see Appendix A, p. 79, below.
b. Included in the figure for the 1931-37 average.
c. 107/

C. Tobacco Manufacturing.

The tobacco-manufacturing industry of Communist China illustrates the following characteristics typical of Chinese Communist light industry: a steady and substantial increase in production from the modern sector of the industry, a gradual lessening of the historic primacy of Shanghai as production increases in other centers, and the elimination of private ownership. This report discusses only production of cigarettes, because little information about the other products of the industry is available.

In 1936, China including Manchuria had an annual capacity of about 2 million cases of cigarettes (50,000 cigarettes to a case), 108/ and actual output in 1936 was 1,650,000 cases. 109/ In 1949, one-half of all the facilities for production were located in Shanghai. 110/ The economic advantage of Shanghai in tobacco products was a result of the following facts: first, UK and US capital had been available for the development of industry in the eastern ports; and second, imports of high-quality foreign tobaccos had been an integral part of the industry's operation. The Chinese Communist regime, however, banned imports of tobacco in 1949 in order to conserve foreign exchange. The decision to ban imports was facilitated by the expansion of production of tobacco that had taken place in the distant southwest provinces after World War II. 111/ In 1957, output of cigarettes will be 4 million cases, according to the First Five Year Plan, an increase of 77 percent over that in 1952. 112/ In 1957, output of cured tobacco will increase to 390,000 tons under the Plan, 113/ also a gain of 77 percent over that in 1952. No provision is made in the Plan for any major construction project in the tobacco industry itself. A cigarette paper mill, however, will be constructed in East China. Estimates of the output of cigarettes in China in 1947, 1949-55, and 1957 (Plan) are shown in Table 13.

Table 13

Estimated Output of Cigarettes in China a/
1947, 1949-55, and 1957 (Plan)

Year	Output (Thousand Cases b/)
1947	2,363
1949	1,600
1950	1,885
1951	2,030
1952	2,650
1953	3,552
1954	3,728
1955	3,504
1957 (Plan)	4,700

a. For methodology, see Appendix A, p. 79, below.
b. Each case contains 50,000 cigarettes.

The Chinese Communist government has made radical changes in the tobacco industry from the growing of the leaf through the sale of the finished product. The farmers are encouraged to grow better tobacco, especially the flue-cured, Virginia type. All private buying of leaf tobacco has been eliminated, and the farmer is forced to sell his tobacco to the China National Native Product Corporation, a government agency with branches in every city and town. This corporation allocates the leaf to tobacco manufacturers. Small and high-cost factories have been forced out of business by insufficient allocations of leaf or by excessive taxation. Several factories in Shanghai and Tsingtao have been moved to interior tobacco-growing provinces such as Honan and Hunan. The remaining private factories are rapidly being turned into joint public-private enterprises. The new regime also has changed completely the marketing structure for the finished product through the establishment of a government organization which sells all the various types of tobacco products to retail outlets. The new system of distribution of tobacco products has eliminated thousands of private middlemen.

The consumption of raw tobacco per case of cigarettes is estimated to be 137 pounds. 114/ On this basis, 217,000 tons of raw tobacco would have been required for the 1955 production of cigarettes. In 1954 the tobacco crop was seriously affected by the flood, poor weather conditions, and a shortage of fertilizers, and this damage to the crop was the main cause of the anticipated reduction of 6 percent in production of cigarettes in 1955. 115/

No estimates are available on the amount of handicraft production in the past. The new system of control, however, probably is gradually increasing the proportion of production in factories to total production of tobacco products.

D. Vegetable Oil Refining.

Before World War II, China led the world in production of vegetable oils with an average annual output of almost 4 million tons. 116/ About one-half of this tonnage was produced in modern refineries. Chinese production represented about one-third of the total world production in terms of oil and contributed about 14 percent of the total international trade in vegetable oils. Before World War II the Chinese share in world production was as follows:

soybean oil, more than 50 percent; tung oil, 80 percent; rapeseed oil, 60 percent; peanut oil, 20 percent; sesame seed oil, 50 percent; and cotton seed oil, 19 percent. 117/ Vegetable oils, traditionally an important source of foreign exchange for China, accounted for more than 15 percent of the value of its exports in 1936. 118/

Because of the civil war, production of vegetable oils in China since 1945 has been below prewar levels. The Chinese Communist government expects to increase output under the First Five Year Plan from 724,000 tons in 1952 to 1,552,000 tons in 1957, an increase of 114 percent. 119/ These figures include only production of the modern sector of the industry. Because the operations of the government monopoly, the China National Oils and Fats Corporation, are resulting in the elimination or modernization of handicraft operations, it is unlikely that the real increase in production of vegetable oils will be as high as 114 percent within the 5-year period.

Only one major construction project is scheduled for the vegetable oil refining industry under the First Five Year Plan. Technology in the industry remains the same as in the prewar period. It is believed that the chemical solvent method of producing vegetable oils has not yet been employed and that all production is by presses and expellers. The oil-extracting facilities in Communist China are as follows 120/:

Large expellers	10
Medium expellers	160
Small expellers	200
Rectangular presses	200
Cylindrical presses	3,000
Presses operated manually or by horses	8,000

Most of the large vegetable oil refineries equipped with modern machinery are located at Shanghai and Tsingtao, in East China; Tientsin, in North China; Wu-ch'ang and Hankow, in Central China; and Dairen, Harbin, and Ssu-p'ing, in Northeast China. In Southwest China and Northwest China there are no refineries equipped with large machinery. The estimated output of vegetable oils in Communist China in 1954, by area, is shown in Table 14.*

* Table 14 follows on p. 52.

Table 14

Estimated Distribution of the Output of Vegetable Oils in Communist China, by Area a/
1954

Area	Percent of Total Output
Northeast China	13.6
North China	9.2
East China	29.0
Central and South China	31.5
Southwest China	13.6
Northwest China	2.8
Inner Mongolia Autonomous Region	0.3
Total	100.0

a. For methodology, see Appendix A, p. 79, below.

E. Sugar Refining.

The production of cane sugar in Communist China is concentrated in the southern and southwestern provinces, where soil and climatic conditions are favorable for cane culture. Kwangtung Province (including Hainan Island) is the leading sugar-producing province, and Szechwan and Kwangsi Provinces, which are next in importance to Kwangtung, each has about one-third as much acreage in sugar cane. The areas of sugar-beet cultivation are located primarily in Manchuria. Although little information has been available on sugar-beet acreage and production, sugar beets are known to be secondary to cane as a source of sugar, accounting for roughly 15 percent of the total production of sugar. The proportion of beet sugar processed in modern refineries, however, is higher than the proportion of cane so processed (see Table 15*).

* Table 15 follows on p. 53.

The processing of raw sugar is generally carried out on a small scale in Communist China. Only 10 large sugar refineries, which produce the white type of sugar consumed in the urban centers, were in operation in 1953. These 10 refineries could process, even if working at full capacity, only 25 percent of the sugar produced in China in 1953. The location and estimated productive capacity of these 10 modern refineries are shown in Table 15. Three of the refineries, the Tse-nei, Ho-p'ing, and La-ha refineries, are new refineries that went into operation in 1953.

Table 15

Location and Estimated Productive Capacity of the Ten Large Modern Sugar Refineries in Communist China a/ 1953

Refinery and Province	Annual Capacity (Metric Tons)
Cane-Sugar Refineries	
Shuntak (Shun-te), Kwangtung	16,000
Tungkun (Tung-kuan), Kwangtung	14,000
Szetou (Ssu-t'o), Kwangtung	10,000
Kityang (Chieh-yang), Kwangtung	6,000
Tse-nei, Kwangtung	15,000
Kweihsien (Kuei-hsien), Kwangsi	3,000
Subtotal	64,000
Beet-Sugar Refineries	
Harbin, Heilungkiang	18,000
A-ch'eng, Heilungkiang	12,000
Ho-p'ing (near Harbin), Heilungkiang	18,000
La-ha, Heilungkiang	15,000 to 25,000
Subtotal	63,000 to 73,000
Total	127,000 to 137,000

a. For methodology, see Appendix A, p. 79, below.

The construction of new sugar refineries has been taking place in the traditional sugar-producing areas, primarily Kwangtung Province for cane sugar and Manchuria for beet sugar. During the period of the First Five Year Plan, 18 modern refineries are scheduled for completion, 121/ 3 of which are among the 10 listed in Table 15.* In spite of the substantial growth of production from these modern refineries, small establishments will still play an important part in production of sugar. In Kwangtung alone there were 25 small, government-owned refineries and 3 small, joint public-private refineries, together with thousands of small handicraft establishments in 1953. 122/

In spite of the continued existence of many small refineries, the Chinese Communist sugar-refining industry has not escaped the general Communist regimentation of the economy. The following regulations that apply to the main producing province, Kwangtung, may be considered typical. Private wholesaling of sugar no longer is permitted. All refineries must register their production with a government commission and sell their production through this commission. Retailers and factories using sugar as a raw material must purchase their supplies through the state commission. The activities of peasants who sell sugar produced from their own crop also are regulated by the state.

Estimates of the output of sugar in China in 1937, 1949-55, and 1957 (Plan) are shown in Table 16.** Production of sugar in both refineries and small handicraft establishments will rise substantially according to the First Five Year Plan. Sugar produced by industry, which was 55 percent of the total production of sugar in 1952, will increase to 62 percent of the total in 1957, according to the Plan. Sugar produced by industry includes the output of factory handicraft refineries as well as that of modern refineries.

The estimated distribution of the output of sugar in Communist China in 1953, by province, is shown in Table 17.*** Table 17 was computed from US State Department estimates of provincial crop yields 123/ before the State Statistical Bureau of China had published the figures which are the basis of Table 16.**

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* P. 53, above.
** Table 16 follows on p. 55.
*** Table 17 follows on p. 56.

Table 16.

Estimated Output of Sugar in China a/
1937, 1949-55, and 1957 (Plan)

Thousand Metric Tons

Year	From Industry	From Small Handicraft Establishments	Total
1937	111	289	400 b/
1949	106	277	383
1950	129	247	376
1951	161	247	408
1952	249	202	451
1953	298	226	524
1954	347	250	597
1955	409	279	688
1957 (Plan)	686	414	1,100

a. For methodology, see Appendix A, p. 79, below.
b. Before World War II, Taiwan added another 300,000 metric tons of sugar to the supply of the mainland.

The Chinese Communist government encouraged raising the sugar yield per unit of sugar cane. It is reported that, in contrast to the 10 tons of sugar which were extracted from 100 tons of cane before 1949, the Shuntak (Shun-te) and Tungkun (Tung-kuan) mills in Kwangtung can now extract 11.5 tons.

Because Communist China does not produce enough sugar to meet domestic requirements, China has had to import sugar during the postwar period. In 1953, 92,000 tons were imported, and in 1954, 68,000 tons were imported. Even with imports, sugar is chronically in short supply in China.

Table 17

Estimated Distribution of the Output of Sugar in Communist China, by Province a/ 1953

Province	Output (Thousand Metric Tons)	Percent of Total
Kwangtung	189.9	48.7
Kwangsi	39.8	10.2
Fukien	13.3	3.4
Chekiang	7.8	2.0
Hunan	6.6	1.7
Kiangsi	17.6	4.5
Yunnan and Kweichow	15.2	3.9
Szechwan	49.9	12.8
Manchuria	49.9	12.8
Total	390.0	100.0

a. For methodology, see Appendix A, p. 79, below.

The Plan goals for 1957 seem too high to be realized. There are many uses competing for the land on which sugar cane and sugar beets are cultivated, and even under the best conditions, shifts in crops cannot be accomplished overnight. In the first 3 years of the Plan, sugar produced by industry increased to 409,000 tons from the 249,000 tons produced in 1952, but this increase is only 37 percent of the increase of 437,000 tons planned for the 5-year period.

F. Tea Processing.

The principal tea-producing areas in China are Anhwei, Chekiang, Fukien, Kiangsi, Hupeh, and Hunan Provinces. Next in order of importance are Kwangtung, Kwangsi, Kiangsu, Szechwan, Yunnan, Kweichow, and Sikang Provinces.

The estimated distribution of the output of tea in Communist China in 1952, by area, is shown in Table 18.

Table 18

Estimated Distribution of the Output of Tea in Communist China, by Area a/ 1952

Area	Output (Metric Tons)	Percent of Total
East	41,250	50
Central and South	31,350	38
Southwest	9,075	11
Northwest	825	1
Total	82,500	100

a. For methodology, see Appendix A, p. 79, below.

Estimates of the output of tea in China in 1932, 1947, 1950-55, and 1957 (Plan) are shown in Table 19.*

The tea industry of Communist China has been directed since 1949 by the state-owned China Tea Company, and since 1950 particular emphasis has been placed on improving the quality and production of black tea, which has always been a major item for export. During 1952 the Company had established six tea-processing plants with up-to-date machinery in Hupeh, Hunan, and Kiangsi Provinces. These provinces provide one-third of all Chinese Communist production of tea, and the 6 plants are said to be concentrating exclusively on production of the 4 best grades of tea for export. Much attention has been paid to replacing slow and expensive manual methods by machinery, and more big processing plants are being built in all parts of China.

* Table 19 follows on p. 58.

Table 19

Estimated Output of Tea in China a/
1932, 1947, 1950-55, and 1957 (Plan)

Metric Tons

Year	Output
1932	207,350
1947	56,500
1950	62,500
1951	64,960
1952	82,500
1953	95,700
1954	81,250
1955	91,450
1957 (Plan)	111,850

a. For methodology, see Appendix A, p. 79, below.

The annual consumption of tea in Communist China was estimated at about 40,000 tons in 1950 and in 1951 and at 50,000 tons in 1952. 124/ Exports of tea from China to all destinations were estimated at roughly 20,000 tons in 1950, 25,000 tons in 1951, and 30,000 to 35,000 tons in 1952. 125/

G. Salt Refining.

In spite of the important value added by the salt industry to the Chinese Communist economy,* the salt industry gets slight attention in official announcements. In 1952, output of salt by industry was 3,460,000 tons and will be 5,932,000 tons in 1957 according to the First Five Year Plan, an increase of 71 percent. Output of salt from handicraft establishments will increase by 9 percent in the same period, from 1,405,000 tons to 1,622,000 tons. Three new salt refineries will be built under the Plan.

* The salt industry accounts for more than twice the value added by factory-produced sugar.

Although organized as a food-processing industry under the Ministry of Light Industry, the products of the salt industry are producer as well as consumer goods. Its products are crystallized sulfate of soda, saltcake, anhydrous sodium sulfide, and bromine. The four major salt fields in Communist China are Chang-lu, Liaoning, Huai-pei, and Shantung.

IV. Paper Industry.

During 1933-37, China consumed about 575,000 tons of paper annually, which was slightly more than 1 kilogram (kg) per capita as compared with 8 kg per capita in Japan and 50 kg per capita in the US. About 200,000 tons were produced by small handicraft establishments; approximately 100,000 tons, by modern mills; and the balance was imported. 126/ The paper industry in Communist China is now considerably larger than in the prewar period. The expansion is mainly a result of construction and renovation in the modern sector of the industry. In 1952, output of machine-made paper was 372,000 tons, and output of handmade paper was 167,000 tons. 127/ The goal for 1957 is 655,000 tons of machine-made paper and 237,000 tons of handmade paper. 128/ In addition to achieving this increase in production, the Chinese Communists expect to experiment with grass fibers as raw material, to develop new types of industrial papers, and to introduce new low-cost methods of production.

Ten above-norm construction projects are planned for the paper industry under the First Five Year Plan. Seven of these projects will be completed by the end of 1957. Eight of the 10 projects will be under the Ministry of Light Industry and 2 under the Ministry of Local Industry. Five of the 10 projects are listed in the Plan 129/:

1. Northeast: The state-operated Chia-mu-ssu Paper and Pulp Mill, which was under construction in August 1953 and is to be completed in 1957. This mill will produce paper for cement bags, insulating paper, and industrial wrapping paper. 130/

2. Central and South: The state-operated Canton (Kuang-chou) Paper Mill, which is the result of the renovation and expansion of an old paper mill. This mill will have an annual capacity of 50,000 tons of newsprint and, in addition, will produce wrapping paper, pulpboard, and pulp for other plants. It was started in 1953 and will be completed in 1956. The first of two phases of construction was completed in June 1954. 131/

3. Central and South: A new mill to manufacture pulpboard from sugar cane. Its exact location is unknown.

4. East China: The state-operated Anhwei Paper Mill at Huai-nan (T'ien-chia-an), the main product of which is cigarette paper. The construction of this mill began early in 1952, and production began in mid-1954. 132/

5. North China: A new mill for the manufacture of high-grade paper. Its exact location is unknown.

The following mills are not known specifically to be among the 10 above-norm projects, but they seem to be large enough to be included.

6. Northeast: The local-state-operated Heilunkiang [redacted] Paper Mill. The construction of this mill began in 1953, and production started in January 1954. This mill is comparatively large, having a reported capacity of 20 to 25 tons of paper per day. Its products include newsprint, office stationery, and wrapping paper. 133/ 50X1

7. Central and South: A new paper mill in Wu-han. Construction of this mill was started in 1952 and completed in 1953. It is designed to supply Central and South China with typewriting, cigarette, and kraft wrapping paper. 134/ This mill probably is state operated.

The increase in production of paper planned for 1953-57 is not to be limited to production from newly built state-operated mills. Of the total increase in production of paper of 283,000 tons, for example, only 66,000 tons will come from the 7 above-norm projects to be completed by 1957. 135/ The old mills, both private and public, are expected to increase their production. It is claimed that a formerly privately owned mill, the An-ting Paper Mill in Szechwan Province, almost tripled its production after becoming a joint private-public mill in 1953. 136/

The estimated distribution of the production of paper by modern industry in Communist China in 1952, by area, is shown in Table 20.*

* Table 20 follows on p. 61.

Table 20

Estimated Distribution of Production of Paper by Modern Industry in Communist China, by Area a/
1952

Area	Percent
Northeast	40.8
North	7.6
East	46.8
Central and South Southwest Northwest	4.8
Total	100.0

a. For methodology, see Appendix A, p. 79, below.

The new paper mills that have been identified in Communist China are scattered among the old producing areas. The expansion of old mills tends to perpetuate the existing locational pattern, but the development of new types of raw material during the First Five Year Plan may lessen the tie of the industry to its present location.

Private owners in the paper industry are being subjected to typical Communist pressure. In 1957, when new state-operated mills will have begun production and when most privately operated mills will have been converted to joint public-private mills, the percent of total production from different mills according to ownership will be as follows 137/:

	Percent
State-operated and local-state-operated mills	61.6
Joint public-private mills	37.3
Cooperatively operated mills	0.1
Privately operated mills	1.0

The labor force in the modern paper-and-pulp industry in Communist China probably is between 44,000 and 74,000 workers. The minimum and maximum figures are based on the following information. It has been reported that the [redacted] Manufacturing Plant of the Kirin Bureau of Light Industry has a labor force of 6,000 workers, who produce 150 tons of paper per day. 138/ Assuming 300 working days per year, annual output is 45,000 tons. In 1954, 556,000 tons of paper were produced in China. Production of this magnitude required 74,000 workers if the proportion of workers to tons at the Kirin mill were applied to the whole industry. On the other hand, it has been estimated that a total force of 500 to 600 workers produced 30,000 tons per year (300 work-days) in integrated mills in the US and Western Europe. It has been further estimated that the efficiency of labor in underdeveloped regions may be as low as one-third or one-fourth of that in developed areas. 139/ If it is assumed that 2,400 workers are required in China to produce 30,000 tons of paper per year, 44,000 workers would have been required to produce 556,000 tons in 1954.

50X1

Estimates of the output of machine-made paper in China in 1943-55 and 1957 (Plan) are shown in Table 21.*

As for papermaking equipment, Communist China can supply its own needs for simple equipment like boilers, vats, and tubing, but it must rely on the outside world for more complex equipment. The Canton Paper Mill, for example, which has been modernized and greatly expanded, has been equipped with two 70-ton automatic pulp machines of East German manufacture. 140/ The largest of the new mills, the Chia-mu-ssu Paper and Pulp Mill in Northeast China, will be equipped with machinery delivered by, and presumably made in, the USSR. Of the countries outside the Sino-Soviet Bloc, the UK, Sweden, West Germany, and Finland supply papermaking equipment. China, however, is producing increasingly complex papermaking machinery in its own machinery industry and by 1957 will depend very little upon other countries.

* Table 21 follows on p. 63.

Table 21

Estimated Output of Machine-Made Paper in China a/
1943-55 and 1957 (Plan)

Thousand Metric Tons

Year	Output
1943	165
1944	N.A.
1945	3.9
1946	93
1947	125
1948	N.A.
1949	107
1950	139
1951	239
1952	372
1953	428
1954	556
1955	606
1957 (Plan)	655

a. For methodology, see Appendix A, p. 79, below.

V. Rubber Products Industry.

Although consumption of rubber in Communist China is small -- only 1 percent of the per capita consumption in the US -- the industry is important from a military as well as from an economic point of view. Because the Communists have made vigorous attempts to modernize both production methods and end products since 1949, a description of the industry may be divided into the period before 1949 and the developments after 1949.

The first Chinese factory for production of rubber products was established in Canton in 1917, and the second, in Shanghai in 1921. The industry developed more rapidly after 1928, encouraged by the

low prices on imported crude rubber; the increased demand for rubber footwear, belting, and other rubber products; and the greater protection afforded the industry by higher Chinese tariffs on finished goods. 141/ By 1931, about 40 plants were operating in Shanghai alone, which was the center of the industry. Heavy fighting in the Shanghai area in 1932 resulted in the destruction of most of these factories. Those which survived and those established after 1932 were demolished, looted, or seized by the Japanese in 1938. Japan, in turn, established new factories as subsidiaries of Japanese rubber companies, equipped them with modern machinery, and used them to supply strategic goods for its armies. No detailed information is available on the industry during the period of the Japanese occupation, although it is known that the end of imports of rubber after the Japanese attack on Pearl Harbor severely limited the operation of the factories.

After World War II the Chinese Nationalist government immediately attempted to reestablish the rubber industry. Limited supplies of foreign exchange impeded this restoration, and it was not until 1947 that the Ministry of Economics could allocate sufficient funds to buy adequate supplies of rubber and other essential items which had to be imported. The majority of the rubber factories were privately owned and operated. The National Resources Commission of the Nationalist government, however, took over the factories formerly owned by foreigners both in China and Manchuria. It is estimated that the total productive capacity of all rubber factories in China in 1948 was as follows 142/:

Motor vehicle tires	220,000 units
Motor vehicle inner tubes	220,000 units
Bicycle, ricksha, and cart tires	4,050,000 units
Bicycle, ricksha, and cart inner tubes	4,450,000 units
Footwear	90,000 to 100,000 thousand pairs
Belting	224,000,000 square inches
V-belting	45,000,000 linear inches

Ample supplies of raw materials did not exist in postwar Nationalist China. On the basis of the raw materials available, it is believed that actual production was less than one-half of the capacities listed.

In 1949, when the Communists had come into power, the rubber industry almost ceased operations. The output of vehicle tires in 1949 was about 20,000 units, and production of other products probably suffered proportionally.

Under the Chinese Communist government the Ministry of Light Industry controls the rubber factories through Regional Bureaus. These Bureaus are divided into Administrative Districts, which exercise direct supervision over the industrial installations within their districts.

In 1950, before the Communists had reorganized the rubber industry, there were 543 rubber establishments in China, employing more than 34,000 workers. 143/ Most of these establishments were small, employing fewer than 50 workers and making rubber footwear and other products by primitive methods. The Communists have been taking control of the larger, privately owned factories by various devices. Supplies of raw materials are withheld from some factories, and other factories are given large government orders and then taxed out of existence. In every case, the final result is the formation of a public-private company which owns the factory, the former owners being allowed to continue its operation under the supervision of a Party representative. The smaller, inefficient factories are eliminated by the withholding of supplies of natural rubber, imports of which are controlled by the government. Factories which had been taken from foreigners by the Nationalist government were seized by the Communists and designated as "state-owned."

Additional changes have been made by the Communists to increase the efficiency of the rubber industry of Communist China. Equipment has been shifted from smaller factories and concentrated in fewer and larger factories. At least two new modern factories patterned after those in the USSR are being built. One of these factories is in Shanghai, the other in Peiping. A third has already been built in Mutanchiang. In this new construction program the Chinese Communists have had the help of Soviet specialists whose services have been supplied under the industrial assistance pact signed between the USSR and China in 1953. Equipment for the new plants is reported to be coming from East Germany and Czechoslovakia. The new construction program probably will not be finished before the end of 1956.

Another move to increase the efficiency of the rubber industry was made by the Chinese Communists when they established a factory at Mukden under the Ministry of Railways for production of special rubber items required for railroad cars and locomotives. This factory makes heater hose, packings, gaskets, and similar items, and its entire production is used by the Ministry of Railways. Its size indicates that it can easily meet the needs of the Chinese railroads.

The objectives of state planning and statements by Chinese Communist officials regarding the attainment of these objectives give a fairly accurate basis for estimating Chinese production of motor vehicle tires. Production in 1954 was announced as being more than 28 times that in 1949, 144/ and output in 1955 was 650,000 units. A recent statement on the First Five Year Plan claimed that Communist China would produce 760,000 motor vehicle tires in 1957, or 82 percent more than were produced in 1952. Estimates of the output of motor vehicle tires in China in 1948-54, by city and by plant, are shown in Table 22.*

The primary factor in production of rubber footwear in Communist China is not the capacity for production but the availability of raw materials. As a result of the government's policy of concentrating production in a few large factories, many small factories have been eliminated. Total capacity of all producers of rubber footwear has been estimated at more than 100 million pairs of shoes per year, 145/ if unlimited supplies of raw materials are assumed. On the basis of available supplies, output in 1949 probably was about 50 million pairs. Announcements by various Chinese Communist officials can be converted, using 1949 as a base year, to give the annual output of rubber footwear in China in 1949-55 and 1957 (Plan), as shown in Table 23.**

Modern industrial production of rubber footwear is far more important than production of leather footwear to the Chinese Communist consumer. In 1953, [redacted] Communist China produced about 3 million pairs of leather shoes in its plants, 146/ or only one-twentieth of its production of rubber shoes. As is apparent from a comparison of the Chinese population with the small production of shoes by industry, the rural population depends heavily upon handicraft and family production for its footwear. Primitive types of footwear, such as clogs and sandals, make up an important part of local production.

50X1

* Table 22 follows on p. 67.
** Table 23 follows on p. 69

Table 22

Estimated Output of Motor Vehicle Tires in China, by City and by Factory a/
1948-55

City and Factory	Area	Date of State Control	Number of Workers	Output (Units) 1948	1949	1950	1951	1952	1953	1954	1955	Brand Name
Shanghai	East											
Ta Chung Hua		21 December 1954	938 (1950)	27,000	5,000	25,000	50,000	67,000	75,000	85,000	100,000	Double Coin
Chung-nan		1 January 1954	N.A.					5,000	10,000	10,000	20,000	Fly-Wheel
Cheng Tai Hsin Chi		1 January 1954	300 (1952)				30,000	50,000	50,000	50,000	50,000	Warrior
Tai Hsin Chi b/		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Fu-t'ai		N.A.	2,000 (1952)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Tientsin	North											
Rubber Factory No. 2		December 1950	980 (1952)					3,500	12,000	20,000	25,000	Liberation
Chu-lin Jung-chi		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Red Light
Tien-ching Rubber Distribution Works		N.A.	N.A.	1,200 to 1,500	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Red Star
Canton	Central and South											
Kuang-chou Rubber Manufacturing Works b/		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Diamond
Peiping	North											
Chung-ya Chin Kung-yeh		State-built 1951-53	1,500 (approximate)					30,000	50,000	80,000	100,000	N.A.
Mukden	Northeast											
Northeast Rubber Goods Factory (Factory No. 1 and No. 7)		December 1950	6,000	5,800	10,000	12,000	35,000	60,000	75,000	75,000	75,000	Red Flag
T'sing Tao	East											
T'sing Tao Rubber Goods Factory		December 1950	1,000 (1951)	25,000	10,000	25,000	110,000	200,000	200,000	215,000	215,000	New China
Mu-tan-chiang	Northeast											
State-operated Rubber Factory b/		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	34,000	65,000	
Total				59,000	25,000	62,000	225,000	417,000 c/	472,000	569,000	650,000	

a. For methodology, see Appendix A, p. 79, below.
b. Tire producers reported by recent Chinese Communist press reports.
c. Based on announced figures and partly independent of the other figures for 1952.

Table 23

Estimated Output of Rubber Footwear in Communist China a/ 1949-55 and 1957 (Plan)

Year	Thousand Pairs
1949	50,000
1950	45,100
1951	67,600
1952	63,600
1953	60,000
1954	81,200
1955	90,000
1957 (Plan)	108,300

a. For methodology, see Appendix A, p. 79, below.

The quality of rubber footwear is often the target of official criticism. Shoddy construction is a common charge. As in other light industries, rubber factories are ordered to conserve raw materials, and the attempts to make rubber footwear out of less and less raw rubber must affect quality adversely. On the other hand, [redacted] 50X1 [redacted] the Shanghai rubber industry, after adopting the 50X1 Soviet method of "gradual temperature rise" for vulcanization, had succeeded in increasing the strength of its rubber footwear. 147/

No estimates can be made of the actual production of other consumer items produced by the various rubber factories. It may be assumed that production of industrial goods, such as belting and hose, have been given priority, because industrial expansion is being emphasized by the government.

VI. Pharmaceutical Industry.

Although the Chinese have been compounding native medicines for thousands of years, the modern pharmaceutical industry has become important only since World War II. The Chinese Communist government

is making a great effort to expand production of modern drugs, such as the antibiotics and sulfa drugs; to replace production from a large number of small plants with production from new modern plants; and to raise the notoriously poor standards of quality of the industry. In addition to these developments, there is the familiar process of the rapid expansion of state control over production and marketing of the industry's products.

The Ministry of Light Industry claims to have produced the following products in 1954: Vitamin C, amino-acid hydrochloride, ergot, aureomycin, amino-sulfonic urea, and tablets for X-ray treatments. The Ministry's plans for 1955 include the production of local anesthetic medicines, hydrochloric acid procaine, phenobarbital, and santonin.

Shanghai is the center of the pharmaceutical industry. Important plants are also located in Mukden, Peiping, Canton, and Harbin. Lesser plants have been reported in Ch'iao-t'ou, Chungking, Dairen, Hsin-chu, Lan-chou, Nan-ning, Nan-tung, Nanking, Sian, Tientsin, Tsinan, Tsingtao, and Yen-chi. The state-operated Shanghai [redacted] Medical Supply Plant produces penicillin and is reported to have succeeded in producing aureomycin on a small scale under the guidance of the Chinese Academy of Sciences. Chloromycetin was also produced there in 1955. Sulfathiazole is produced by the Shanghai Pharmaceutical Plant [redacted] and ephedrine hydrochloride, by the Asiatic Chemical Works Ltd. in Shanghai. 50X1 50X1

The state-operated Northeast Chemical and Pharmaceutical Company in Mukden, a major plant, also is reported to have been successful in the experimental production of chloromycetin. Glucose for injection and sulfa drugs are produced in plants operated by the Northeast Company, and it is claimed that expansion of facilities will permit this company to produce enough sulfa drugs in 1956 to supply 20 million patients per year. Penicillin is also produced by the Northeast Chemical and Pharmaceutical Company.

Research in the field of antibiotics is centered in Peiping.

Harbin is reported to be the principal location for the production of glass ampoules and bottles in Communist China. It is believed that bulk pharmaceutical products are shipped to Harbin for packaging in glass and redelivery. Some pharmaceutical products are produced in Harbin.

During the period of the First Five Year Plan, output of penicillin in Communist China is to rise from 153,000 bottles (300,000 units per bottle) in 1952 to 29 million bottles in 1957. There will be 6,000 kg of chloromycetin produced in 1957, contrasted with none at all in 1952. Output of sulfa drugs under the Plan will be 844,000 kg in 1957, compared with 80,617 kg in 1952. 148/ These figures illustrate the fact that production of modern pharmaceutical products in China is only beginning and that plans call for large-scale production of some items in a short period of time.

In spite of claims of expanded facilities for production of pharmaceutical products, the value of Chinese Communist imports of pharmaceutical products during 1950-54 was relatively large, amounting to between $26 million and $35 million per year. Vitamins, salicylates, sulfas, barbital, phenacetin, and antibiotics are included in imports with penicillin, the most significant import in dollar value.

Estimated imports of pharmaceutical products and penicillin by Communist China in 1950-54 in thousand US dollars are shown in the following tabulation:

	1950	1951	1952	1953	1954
Pharmaceutical products	32,300	30,500	27,600	35,200	20,000
Penicillin	8,000	6,000	20,000	15,000	10,000

In 1954 the value of Chinese Communist exports of medicinal and pharmaceutical products to Hong Kong amounted to almost $750,000. Such exports consist chiefly of medicinal herbs and oils which are transshipped to various parts of the world. The principal medicinal herbs and oils exported are cassia lignea, matrimony vine seed, dried orange rind, ginseng, licorice, rhubarb, camphor, aniseed, tung oil, peppermint oil, menthol crystals, castor oil, and cassia oil.

In no other light industry in Communist China is quality a more serious problem than in the pharmaceutical industry. At a national congress on the First Five Year Plan in mid-1955, it was stated by the Minister of Light Industry that the proportion of improperly made medicines for injections generally runs from 20 to 30 percent of total production and that 45 out of 70 types of commonly used tablets have been repeatedly reported as being hard to dissolve or too low in quality. 149/

VII. Other Branches of Light Industry.

A. Matches.

Match factories were established early in the industrial development of China. Most factories were small, required little capital, and used almost no machine power. Before World War II, however, large-scale and more mechanized methods of production were developed by Swedish and Japanese interests. Most of the larger and more mechanized factories were located in Shanghai. Notwithstanding the development of these modern factories, small domestically owned enterprises were able to survive, and foreign factories accounted for only 10 percent of production. 150/ More than 50 percent of the factories were located in the eastern provinces of Shantung, Kiangsu, and Kwangtung, a reflection of the industry's dependence upon foreign sources for raw materials such as splints and chemicals. 151/

Chinese output of matches was stabilized during 1930-35 at 5 million chien per year (1 chien contains 1,000 boxes of 80 to 100 matches). 152/ The estimated output of matches in China, 1930-35 (average), 1949-55, 1957 (Plan) is shown in Table 24.*

Matches are relatively plentiful in Communist China, as shown in Table 24, and about 5 matches per capita per day are now produced. Quality, however, is poor, the matches being made thin and short in order to conserve materials. The goal for 1957 is easily within the existing capacity of the industry. No new factories will be built during the First Five Year Plan, 153/ and the concentration of the industry in the eastern provinces, therefore, will continue.

B. Soap.

Before World War II, soap factories in Shanghai, Tientsin, and other large cities produced enough household and laundry soap to make large amounts of imports into China unnecessary. Higher grade luxury soaps were imported for urban consumption.

* Table 24 follows on p. 73.

Table 24

Estimated Output of Matches in China a/
1930-35 Average, 1949-55, and 1957 (Plan)

Year	Output (Chien b/)
1930-35 average	5,000,000
1949	6,750,000
1950	5,870,000
1951	7,220,000
1952	9,110,000
1953	8,020,000
1954	10,350,000
1955	11,130,000
1957 (Plan)	12,700,000

a. For methodology, see Appendix A, p. 79, below.
b. One chien contains 1,000 boxes of 80 to 100 matches.

Data on Chinese production of soap before World War II are lacking and for the years after 1945 are available only for Shanghai, the center of the industry. At the end of World War II the largest factory in Shanghai, the British-owned China Soap Company, a subsidiary of the Lever interests, had close to one-third of the city's capacity of over 500,000 cases a month, of which 420,000 cases were laundry and household soap. 154/ Monthly output of soap in Shanghai was only 140,000 cases in 1946 and 180,000 cases in 1947, because the disturbances of the civil war and the shortages of raw materials permitted operations at only a fraction of capacity. 155/

Since 1949, production in Shanghai has continued far below capacity. In June 1949, 130,000 cases were produced, and an average of only 60,000 cases per month was produced from June to August 1950. 156/ The decrease in production of the soap industry under the Chinese Communists is in keeping with their program providing for the retrenchment

of nonessential industry and for the reduction of imports. Thus production of high-grade soaps requiring imported raw materials, such as coconut oils, has been discouraged. The absence of government claims of rising production in the past few years, together with the reports of a general scarcity of soap in urban markets, probably means that the priority of the industry is still low. The only mention of soap in the First Five Year Plan is in a list of light industry products. An isolated figure gives planned production in 1954 as 73.5 percent above that in 1953. The quality of the product is deteriorating, [redacted] 50X1
A Tientsin newspaper editorial, for example, stated that two formerly well-known brands of soap had fallen into public disfavor because of their poor quality. 157/

C. Pottery and Porcelain.

The pottery and porcelain industry of Communist China makes more than 3,000 products ranging from coarse earthenware vessels to the finest of porcelain vases. The principal products of the industry are kitchenware, dinnerware, glazed bathtubs, wash basins, toilet units, wall tiles, and electrical insulators. Although most of the products are consumer durable goods, some products, like insulators, are producer goods. The value of production of pottery and porcelain throughout Communist China in 1955 is estimated to have been 31 percent above that in 1954. Production in 1955 at the famous ancient porcelain center of Ching-te-chen (Fou-liang) in Kiangsu Province is estimated to have been three times that in 1949. 158/ Ching-te-chen has rich reserves of china clay or kaolin, which will provide a source of raw material for many centuries.

The control of the pottery and porcelain industry of Communist China is less centralized than that of the main sectors of light industry. The pottery and porcelain industry is under the jurisdiction of the Ministry of Local Industry. Since 1950, 60 local state-operated enterprises to produce ceramics for daily use have been established, including some in Ching-te-chen and some in Feng-feng, Li-ling, T'ang-shan, and Peiping, all in Hopeh Province. 159/ One-half of the total value of the industry's production in 1955 was produced by local state-operated, joint public-private, and cooperative enterprises. The other half was produced by private enterprises and widely scattered individual handicraft enterprises. 160/ Most of the newly built and reconstructed enterprises are mechanized. 161/ The increase in importance of the state-controlled, mechanized sector of the industry is inevitable.

D. Medical Equipment.

One of the indications of the industrial maturity of Communist China is the establishment of a medical equipment industry. According to the Ministry of Light Industry, China could produce more than 500 different types of medical instruments by February 1956. 162/ Although most of the instruments are simple, the Ministry states that among the instruments and equipment being produced are 200-milliampere diagnostic X-ray equipment for radiography and fluoroscopy, X-ray fluorescent screens of all sizes, ultra-shortwave apparatus, universal operating tables, and high-pressure and electrical sterilizers.

E. Fountain Pens.

Fountain pens are an example of the numerous relatively small and simple consumer durable goods that the Chinese Communists are exporting to the markets of Southeast Asia. Chinese exports of fountain pens to Southeast Asian markets, such as Burma and Hong Kong, increased from 3,400 dozen in 1954 to 500,000 dozen in 1955. 163/ Exact figures for domestic sales were not announced, but domestic sales in 1955 were almost one-fourth above those in 1954 and were expected to increase 10 percent in 1956. 164/ The pens shipped abroad seem to be of fair quality and are frank imitations of well-known US brands.

The center of the fountain pen industry is Shanghai. In 1954 there were 39 fountain pen companies in Shanghai, 165/ and their combined production was 9 times larger than production before 1949. 166/ These companies are rapidly being changed to public-private enterprises.

VIII. Capabilities, Vulnerabilities, and Intentions.

A. Capabilities.

Communist China can raise the productive capacity of light industry to the levels called for by the First Five Year Plan. The new capacity, located in the interior, represents part of the government's efforts to establish great new industrial areas in parts of the country that previously had been scarcely affected by the industrial revolution. China can equip its light industry from its own machinery industry except for complex equipment, such as automatic machines for making paper. China is rapidly making progress toward its goal of complete independence from foreign sources, aided by the fact that the machinery for most of light industry is simple compared with that used in heavy industry, transportation, and communications.

Communist China can raise production of light industry to the levels called for by the First Five Year Plan, if agricultural production does not suffer from bad weather conditions or from the process of collectivization. Urban labor and capital plant will not be limiting factors.

Communist China can increase the extent and effectiveness of its centralized control of light industry. As a result, China will be even better able to direct the energies of light industry toward meeting the requirements of industrialization, such as acquiring additional machinery from abroad rather than raising the standard of living.

Communist China can make large technical advances in light industry by adopting Soviet methods and by making use of its own growing research facilities. Because so much of its light industry is still operating with primitive methods and equipment, China continues to have wide opportunities to increase productivity. The declining rate of increase in production by light industry indicates, however, that China will soon enter a period when large increases will be difficult to achieve. 50X1

Chinese Communist standards of living cannot be raised by 1957 or probably even by 1962 if Communist China continues its policy of concentrating on industrialization. The government leaders have resolutely denied resources to the consumer sector of the economy and are using the rationing system in an attempt to extract more resources from the already hard-pressed consumer. There are no indications that this general policy will be abandoned in the next 20 years. 50X1

B. Vulnerabilities.

The building of new productive capacity in the interior, near supplies of raw materials and consumers, has decreased the vulnerability of light industry in Communist China. This decentralization of light industry is lessening the importance of interruptions of transportation. As the Chinese Communist machinery industry becomes better able to supply light industry with the types of equipment that China formerly imported, the vulnerability of light industry is further decreased.

On the other hand, the vulnerability of light industry in Communist China is increased by the consolidation of small units into large units and by the decline in importance of local production. Greater interdependence in a physical and organizational sense means greater vulnerability. As Chinese Communist industries become modernized, China will become less and less an amorphous economy and will develop increasingly complex nerve centers that can be damaged.

Tensions resulting from the forced-draft industrialization of Communist China increase the vulnerability of light industry. Deterioration in the quality of products, for example, has been caused by the increased pace of work and the strict conservation of raw materials. The very success of the Communist government in rapidly increasing production by light industry creates problems of insuring supplies of raw materials, of training large groups of workers in the use of modern equipment, and of conducting research in new products. At the same time, the usual economic incentives given to workers for increasing production are absent because of the industrialization program. That serious ruptures have not occurred in the Chinese Communist economy is a tribute to the determination of the Chinese leaders and to the stamina of the people.

The vulnerability of light industry in Communist China varies, depending upon the branch of light industry concerned. Some industries have many small scattered productive facilities; others are more concentrated. For instance, there will be only one major rayon plant in 1957 and, in contrast, several dozen small woolen mills. Several of the branches of light industry produce the types of goods for which consumers have built up inventories, such as textiles, whereas in other branches, such as the food-processing industry, a decrease in production would be felt immediately. Some branches of light industry produce goods of direct use to the armed forces, such as footwear and pharmaceutical products, and the maintenance of production in these industries would be more important to the government than the maintenance of production in industries supplying goods of less direct military use.

C. Intentions.

Communist China intends to use the increase in production by light industry to develop industrial capacity, not to raise living standards. As a corollary, China will force workers to increase output per man-hour and to use less raw materials per unit of production without an increase in wages.

The expansion of the productive capacity of light industry is planned through 1957 and on into the period of the Second Five Year Plan, but at a declining rate. These expansion plans will be accompanied by calls for economy and reductions in original construction plans, especially for nonessential construction like workers' canteens and dormitories. The inability to expand rapidly production of agricultural raw materials is the main reason that the government does not intend to maintain the rate of growth of facilities for production in light industry.

The Chinese Communist government, within the framework of the joint public-private enterprise, intends to maintain even more rigid forms of control over light industry and to reduce still further the decision-making power of former owners. Concurrently, the government intends to modernize and consolidate existing handicraft enterprises, not only to increase production but also to insure the flow of materials through controlled channels. The effect of increased control over light industry will be the strengthening of control over the livelihood of the individual worker. Ultimately, the large public-private enterprises will be transformed to public enterprises.

The government also intends to enlarge and strengthen the rationing system in Communist China. More production by light industry can then be used to acquire foreign credits.

The quality of production by light industry in Communist China is to be improved. Success in the improvement of quality will be limited, however, by the emphasis placed on quantity and on the reduction in the amount of raw materials allowed per unit of production.

APPENDIX A

METHODOLOGY

A. General:

Before 1955 there were few absolute figures on production of light industry in Communist China. The situation changed completely in 1955 with the publication of the First Five Year Plan and commentary on the Plan. These official government releases have been relied on to assemble the figures on production, capacity, and extent of nationalization that are presented in this report. Internal checks on the consistency of the data have been available in some instances: for example, the announcements of the construction of individual cotton mills as contrasted with the announcement of the over-all increase in cotton textile capacity, and the announcement of sugar-cane and sugar-beet acreage as contrasted with the announcement of sugar production.

B. Methodology for the Tables:

Table 1: The original source of the figures for 1949, 1952, 1953, and 1954 is an official publication of the Chinese Communist government. The immediate source is a translation. 167/ The figures for 1957 are taken from the First Five Year Plan. 168/

Table 2: The sources for Table 2 are the same as those for Table 1. It was assumed that all industrial production of producer goods comes from modern (as opposed to factory handicraft) industry.

Table 3: The production series for individual light industry products were put into index number form, with 1952 equaling 100. In order to obtain a composite series for light industry, the series for individual products were weighted in proportion to the importance of each product in the gross national product in 1952, as measured by estimates of the value added in the various branches. The series for cotton yarn used in the computation of the composite series for light industry excluded yarn used in making fabrics, whereas the series for cotton yarn given in Table 3 is for all machine-made yarn. The series for cotton fabrics used in the computation of the composite series was

for fabrics made by modern industry, whereas the series for cotton fabrics given in Table 3 is for all cotton fabrics made in whole or in part from machine-made yarn. The Plan figure for 1957 given in Table 3 for cotton fabrics is 146 percent of production in 1952, but the First Five Year Plan gives this 1957 figure as 147 percent. 169/ The explanation of this difference is that the figure of 147 percent refers to bales, while the figure of 146 percent refers to metric length (the 1952 and 1957 totals convert from bales to meters at different rates because of differing proportions of nonfactory production to total production. 170/). The weight used for the paper and printing industry was applied to the series which represents production of machine-made paper. The series for rubber products is a composite of series for rubber footwear and for motor vehicle tires, in which the footwear is given twice the weight of tires, because twice as much rubber is used in production of footwear as in that of tires.

Table 4: Figures for years before 1949 are the figures of private trade associations in the particular industry. Figures for 1949 and later years are based, with some exceptions, on official Chinese Communist government announcements. In the case of spindles, the First Five Year Plan states that the 5,660,000 spindles in place at the beginning of 1953 will be increased by 1,650,000 by the end of 1957. The increase of 1,650,000 spindles has been distributed among the 5 years covered by the Plan on the basis of official reports on the progress of construction of individual mills. The individual mill announcements have been consistent with the goal of 1,650,000 new spindles. In the case of power looms, the 47,100 new looms announced in the Plan have been distributed among the 5 years in proportion to the number of new spindles added. This method was used because the Chinese Communists usually build integrated spinning and weaving capacity in relatively constant proportions. Production of yarn for 1949 and subsequent years is based on official government announcements, including the admission that output would decline by 109,000 tons in 1955 because of the floods in 1954. 171/ The figures for fabrics not in parentheses are for production of fabrics from modern mills. Production in 1949 is given as 72.6 percent of peak production before 1949. The figures of 1950 and 1951 are based on officially announced percentage increases. For the years 1952-54 and 1957, production of fabrics from modern mills is taken as equal to loom capacity, based on 4 meters per loom per hour and 300 working days of 20 hours each.

Production in 1955 is assumed to be equal to production in 1954, in spite of the decrease of 14 percent in total production of fabrics, on the assumption that modern mills are being favored at the expense of other mills. Production in 1956 is assumed to bear the same relationship to production in 1957 that production of all cotton fabrics in 1956 is expected to bear to production in 1957. The first official figures to be published on production of fabrics include all cloth that is made in whole or in part from machine-made yarn. It is this definition of production of fabrics which is reflected in the series in parentheses.

Table 5: The geographic distribution of cotton spindles in 1937 and 1949 are figures of private trade associations in the particular industry. The distribution in 1952, 1954, and 1957 (Plan) is based on a study of official reports on the progress of construction of individual mills. For example, a Peiping broadcast might report the completion of a 100,000-spindle mill in Sian.

Table 6: Table 6 is derived from Table 5.

Table 7: Table 7 is based on official Chinese Communist announcements about the progress being made in the construction of individual mills. These announcements concerning mills appear in various (Hong Kong) reports, the most important single compilation of such announcements being found in a report of June 1955. 172/

Table 8: Table 8 is derived from Table 7.

Table 9: The figure for 1936 is derived from information that Shanghai, which has 72 percent of the spindles in Communist China, produced 150,000 bolts of silk fabrics per month (50 yards each). 173/ The figures for 1949 and later years are based on official Chinese Communist announcements.

Table 10: The figure for 1936, which is assumed to represent capacity, is derived from a statement that in 1949 the woolen textile industry was operating at 30 percent of capacity. 174/ The figures for 1949 and subsequent years are based on official Chinese Communist announcements.

[redacted] 50X1

Table 12: [redacted] 50X1

[redacted] figures 50X1 (including the Plan for 1957) for the output of flour from modern mills are taken from official Chinese Communist government announcements. Figures for total output before 1955 also are based on official Chinese Communist government announcements. Total output in 1955 is estimated to be halfway between that in 1953 and that in 1954, and output in 1957 is estimated to be no greater than that in 1955, because the anticipated growth in the supply of wheat is expected to be extremely small.

Table 13: Table 13 is based on official Chinese Communist government announcements. 177/

Table 14: The figures were estimated by taking the oil equivalent of the soybean, peanut, sesame, rapeseed, and cotton seed crops.

Table 15: Table 15 is based on official Chinese Communist government announcements. 178/

Table 16: The figure for total production in 1937 is contained in a State Department report from Shanghai. 179/ The total for 1937 is assumed to have been divided between refinery and small handicraft production in the same proportions as in 1949. The postwar figures are from official Chinese Communist government announcements. For 1953, 1954, and 1955 the amount of sugar processed in factories is the only figure available, and the total output of sugar in these years has been estimated by assuming that refinery sugar and sugar from small handicraft establishments would approach their goals for 1957 at the same proportionate rates. For 1949, 1950, and 1951 the amount of sugar produced by industry is the only figure available, and the total output of sugar in these years has been estimated from figures given by a commercial information service. 180/ This service overstated the official Chinese Communist figure for 1952 by 25 percent, and this factor of 25 percent was used to reduce the estimates of the service for 1949, 1950, and 1951.

Table 17: Table 17 is based on official Chinese Communist government announcements concerning provincial production. 181/

50X1

Table 19: Table 19 is taken from official figures 183/ except for 1955, for which the increase is estimated by prorating the increase necessary between 1954 and 1957 if the goal of the Plan is to be achieved.

Table 20: Table 20 is taken from announcements by the Chinese Communist Ministry of Light Industry. 184/

Table 21: Table 21 is based on various official announcements of the Chinese Communist government, including the First Five Year Plan 185/ and official statistical tables. 186/

Table 22: Table 22 is based on official Chinese Communist announcements concerning the capacity and production of individual tire plants.

Table 23: Table 23 is based on official Chinese Communist announcements concerning achievements in production and goals under the Plan.

Table 24: The prewar figure comes from a private study of prewar industry in China. 187/ The other figures are from various official Chinese Communist reports, including the First Five Year Plan. 188/

Table 25: Table 25 is based on a comparison of rates of growth in production of four light industry products, with and without non-factory production. The four products have been assigned weights which reflect their respective importance in light industry.

C. Conversion Factors.

1. Cotton Textiles.

a. 100 kg of ginned cotton yield 93 kg of cotton yarn.

b. 14.9 kg of cotton yarn yield 100 linear meters of cotton fabric.

c. 40 yards make 1 bolt of cotton fabric produced in modern mills. Bolts of fabric made outside modern mills vary in length, averaging slightly less than 40 yards.

d. 5 linear meters of cotton fabric yield 1 standard suit (probably the Chinese people's standard uniform).

e. 60 pounds of cotton yarn are produced per 1,000 spindle-hours.

f. 4 linear meters of cotton fabric are produced per 1 loom-hour.

2. Silk Textiles.

a. 300 kg of dried cocoons yield 100 kg of reeled silk (based on scanty information).

b. 13.5 kg of silk yarn yield 100 linear meters of silk fabric (based on scanty information).

c. 40 linear meters make 1 bolt of silk fabric produced in modern mills. The width of this silk fabric ranges from 70 to 114 centimeters.

3. Woolen Textiles.

a. 2 kg of raw wool yield 1 kg of scoured wool. (There is a wide range of from 0.7 to 1.3 kg, depending upon the breed of the sheep supplying the wool.)

b. 100 kg of scoured wool yield 80 kg of woolen yarn.

c. 62 kg of woolen yarn yield 100 linear meters of woolen fabric.

4. Flour Milling.

100 kg of wheat yield 90 kg of flour.

5. Tobacco Manufacturing.

137 pounds of tobacco yield 1 case (50,000 units) of cigarettes.

6. Sugar Refining.

100 tons of sugar cane yield 11.5 tons of sugar (based on scanty information).

7. Rubber Products.

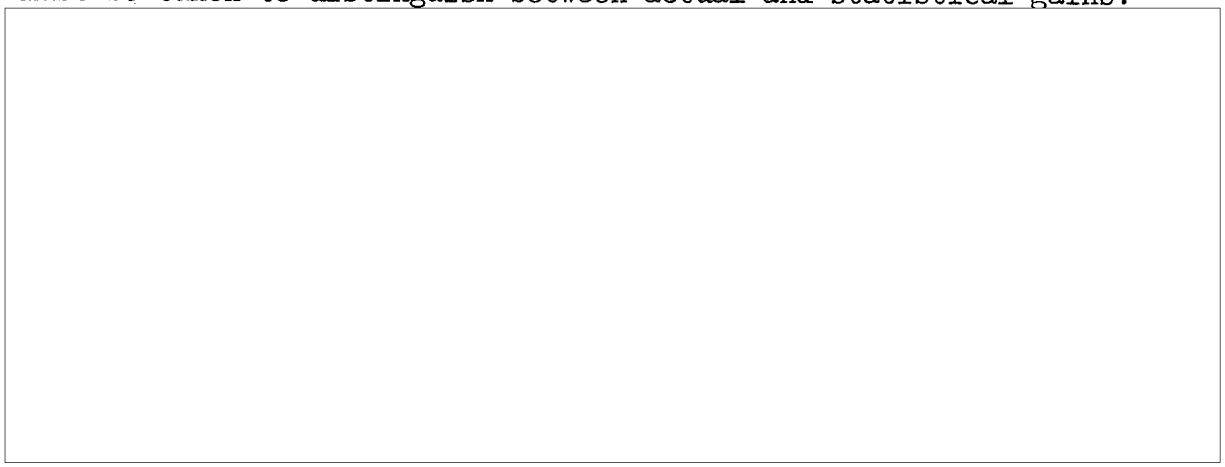
a. 33 pounds of raw rubber are required for a tire casing and 8.5 pounds for a tire tube. (Averages cover a wide variety of tires.)

b. 3/4 pound of raw rubber is required for an average unit of footwear, 1/2 pound for a pair of rubber shoes, and up to 3 pounds for a pair of heavy boots.

D. Estimates of Nonfactory Production.

Throughout this report it has been stressed that, in order to assess the significance of rates of growth in light industry in Communist China, some account must be taken of the decline in importance of nonfactory production. The modernization and collectivization of light industry has resulted in the inclusion of an increasing share of production in official statistical reports. These statistical reports give Plan and Plan fulfillment data in terms of light industry proper -- that is, in terms of production from modern and factory handicraft mills. In studying Chinese Communist announcements, care must be taken to distinguish between actual and statistical gains.

50X1



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