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ECONOMIC INTELLIGENCE REPORT

REGIONAL DISTRIBUTION
OF ECONOMIC ACTIVITY
IN COMMUNIST CHINA



CIA/RR 102
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CENTRAL INTELLIGENCE AGENCY
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(ORR Project 10.831)

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FOREWORD

This report is essentially a regional analysis of the gross national product of Communist China. It may be said to give a third dimension to an understanding of the Chinese Communist economy by adding estimates of the distribution of output geographically to estimates of its distribution over time and among industries. It also has been designed to provide the intelligence community with background material on the 10 economic regions of Communist China.

It should be noted that the Chinese Communists have not yet defined and announced an official system of economic regions. The regional structure adopted in this report, although taken from a Chinese Communist textbook on economic geography, must be regarded as tentative. It is believed, however, that the system of economic regions which is scheduled to appear during the course of the Second Five Year Plan (1958-62) of Communist China will approximate the system used in this report.

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REGIONAL DISTRIBUTION OF ECONOMIC ACTIVITY IN COMMUNIST CHINA*

Summary and Conclusions

The Chinese Communists plan to effect a rational, balanced distribution of economic activity throughout the territory of China within a period of three Five Year Plans. Although China's natural resources are relatively well dispersed, the historical pattern of industrial development had created an uneven geographical distribution of industrial capacity in the prerevolutionary period, with 77 percent of total industrial output originating in China's coastal provinces in 1949. By way of contrast, China's vast and comparatively less-populated hinterland, which contains nearly 70 percent of China's total land area and includes the frontier regions of Southwest China, Northwest China, Tibet, and the Inner Mongolian and the Sinkiang Uighur Autonomous Regions, accounted for only about 8 percent of the national industrial production in the same year. Planning effort in China is aimed at rectifying this unbalanced concentration of industry in order to promote industrial development close to sources of raw materials and areas of consumption, to enhance national security, and to raise living standards in the backward areas of inland China.

By the end of the First Five Year Plan (1953-57), there will be little progress toward achieving a more balanced distribution of economic activity. The distribution of the agricultural output of Communist China will remain relatively stable, with slight gains registered in the regions of North China, Central China, and South China. This trend will probably continue, since the primary method of increasing agricultural production during the period of the Second Five Year Plan (1958-62) is to raise yields in existing agricultural centers through such means as application of fertilizer, expansion of irrigation, and double cropping. On the other hand, the program of railroad construction in China during the First Five Year Plan is concentrating on the underdeveloped regions of western China, with rail

* The estimates and conclusions contained in this report represent the best judgment of ORR as of 15 June 1957.

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access to Yu-men (China's largest oil producer) in Kansu Province, completion of the Trans-Mongolian line to the USSR, and the linking of the Northwest China and Southwest China regions by means of the Pao-chi -- Cheng-tu railroad representing major achievements. Although this trend will continue throughout the period of the Second Five Year Plan, culminating in the completion of the Trans-Sinkiang line as a fourth link with the USSR and of a new north-south trunk system located about 600 miles inland from the coast, a major effort will also be directed toward a rehabilitation of existing lines to solve the growing problem of traffic congestion in the old industrial areas of China.

In planning industrial development, Communist China has been guided by much the same economic considerations as those prevailing in other countries. The governing principle in the First Five Year Plan appears to be the location of new industry close to known sources of raw materials and fuel. Within the latitudinal alignment of China's economic regions from north to south, more than 70 percent of total industrial investment during the period 1953 through 1955 was channeled into Northeast China and North China, regions which together account for 85 and 66 percent, respectively, of national coal and electric power production. In the east-west division of China between coastal and inland areas, approximately 45 percent of all capital construction investment and a considerably higher proportion of industrial investment were allocated to the existing industrial bases in the coastal provinces during this same period. Furthermore, the decision by Chinese Communist economic planners in 1956 to place greater emphasis on the development of coastal industry reflected a growing awareness of the concentration of industrial fixed assets, of the much higher rate of labor productivity, and of the much greater number of engineering and technical personnel to be found in the coastal provinces of China. At the same time, it should be stressed that an increasingly greater proportion of industrial investment will flow into inland China during the Second Five Year Plan as new bases of iron ore, coal, and hydroelectric power are established. This trend, which is influenced by considerations of national security, is best illustrated by the planned construction of centers of heavy industry clustered about large-scale iron and steel complexes in the Inner Mongolian Autonomous Region, Central China, Southwest China, and Northwest China and about huge hydroelectric power projects on the upper reaches of the Yellow River.

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The First Five Year Plan will result in a noticeable shift northward in the regional distribution of economic activity, due primarily to the rapid development of existing industrial bases north of the Yangtze River. This is seen most clearly in the manufacturing sector of Northeast China, which will increase its share of national heavy industrial output from about 48 percent in 1952 to 52 percent in 1957. The First Five Year Plan also provides for a heavier concentration of industry within the leading industrial complex of China, located within a radius of 45 miles in central Liaoning Province (Northeast China) and bounded by the cities of Mukden, Fu-shun, Pen-ch'i, and An-shan. Moreover, Shanghai, long regarded as the prime example of excessive concentration of industry in pre-Communist China, is being built up into a heavy industrial base as the result of a decision made in 1956. This trend toward increasing concentration of heavy industry will continue until the latter part of the Second Five Year Plan when the new inland industrial bases centered about large iron and steel combines and hydroelectric power projects will come into being.

These findings underscore the long-term nature of the economic program of Communist China to construct new industrial bases in previously underdeveloped areas. Not until 1961 or 1962 will China achieve visible results in its widely publicized endeavor to create a rational, balanced distribution of economic activity throughout its vast territory.

I. Regional Structure of Communist China.

A. Origin and Definition.

The basis for the current regional structure of the economy of Communist China was inherited from prerevolutionary China. The Chinese economy was marked in the past by a heavy concentration of economic development in the coastal area* and in Northeast China

* The coastal area, as defined by the Chinese Communists, includes the seven coastal provinces of Liaoning, Hopeh, Shantung, Kiangsu, Chekiang, Fukien, and Kwangtung and the three special municipalities of Shanghai, Tientsin, and Peiping. The inland area encompasses all the remaining provinces of China.

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(Region I*), where a combination of relative political stability, the existence of a modern transport system, the availability of agricultural and industrial raw materials, and the proximity to large markets attracted foreign capital. Smaller centers of economic development had arisen in Southwest China (Region VII) under the stimulus of wartime necessity and, to a lesser extent, in several other regions where enterprising warlords had encouraged the formation of industry. Industrial development was even more heavily concentrated in the coastal area. In 1949, 77 percent of the total industrial output of China originated in the coastal provinces. 1/** By way of contrast, China's comparatively less populated hinterland, containing nearly 70 percent of China's total land area and including the frontier regions of Inner Mongolia (Region II), Southwest China, Northwest China (Region VIII), Sinkiang (Region IX), and Tibet (Region X), accounted for only about 8 percent of the national industrial production in the same year. 2/

The regional structure established by the Chinese Communists upon coming to power, however, was not based on geographic or economic factors. Designated as administrative areas and governed by military and administrative commissions, these regions reflected to a large extent the military situation which existed in China at that time. The regional organs of government served to fill the administrative gap which traditionally has separated the central regime from local levels of government. 3/ At the same time, this system took cognizance of the different stages of political, social, and economic development in

* The regions referred to in this report reflect all territorial changes up to 1 January 1956. Tibet, although included in the list of regions given below, is omitted from discussion in this report because the Chinese Communists apparently have decided to delay economic development of this region until the period of the Third Five Year Plan. The regions are designated by number and name as follows:

I	Northeast China	VI	South China
II	Inner Mongolian Autonomous Region	VII	Southwest China
III	North China	VIII	Northwest China
IV	East China	IX	Sinkiang Uighur Autonomous Region
V	Central China	X	Tibet

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the various regions of China. 4/ Following the extension and consolidation of the authority of the central government, the powers of the regional organs were curtailed sharply in 1952 when they were transformed into administrative committees supervising the provincial governments on behalf of the central government. In the latter half of 1954, the regional administrative organs were abolished altogether.

Regional economic planning and reporting during 1950-54 were carried on within the framework of these administrative areas. The First Five Year Plan (1953-57), which was compiled during 1951-55 and published in July 1955, employed the same regional system. 5/ At the same time, the First Five Year Plan introduced another geographical frame of reference which distributed new industrial construction between coastal and inland areas,* in this way stressing the importance of security considerations in Communist China's program of industrial development. 6/ Several developments in 1956, however, indicated that the Chinese Communists were in the process of drawing up a formal system of economic regions based on the Soviet pattern. The first was the appearance of a textbook on the economic geography of Communist China organized on the basis of 10 economic regions. 7/ The second was the publication of the Draft Proposals for the Second Five Year Plan which discussed industrial construction plans within the framework of these same 10 regions. 8/ The last development was an article appearing in Hsueh-hsi, the official organ of the Chinese Communist Party, which stated that a system of economic regions for China would be forthcoming during the period of the Second Five Year Plan (1958-62). 9/

This report adopts the regional structure of China's economy employed in the Chinese Communist textbook on economic geography mentioned above. Although the regions constituting this system are only groupings of provinces, they are reasonably well integrated from the standpoint of economic, geographic, and cultural features. It is believed that the economic regions as defined and officially announced by the Chinese Communists during the course of the Second Five Year Plan will approximate those used in this report. The economic regions of Communist China are shown in Figure 1.**

* See footnote on p. 3, above.

** Following p. 6.

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B. Theory of Regional Development.

The theory of regional development underlying the economic planning of Communist China, given the regional structure as defined (in A, above) and recognizing that the planning process must be carried out within an area framework, is defined substantially in the following excerpt from China's First Five Year Plan:

The geographical distribution of our new industrial capital construction must conform with the long-term interests of the state, and take account of conditions at different stages of our development. It must follow the principle of appropriately distributing our industrial productive forces over various parts of the country, locating industries close to sources of raw materials and fuel and areas of consumption, and complying with the need to strengthen national defence, so as to change gradually the irrational distribution of industry and develop the economy of backward areas. 10/

In accordance with this general statement of principle, the First Five Year Plan announcement contained the following specific provisions governing the geographical distribution of industrial capital construction: (1) expansion of existing industrial bases, especially in Northeast China, in order to support the construction of new industrial areas; (2) construction of new industrial bases in North China (Region III), Northwest China, and Central China (Region V), centering around two new iron and steel combines to be established in Pao-t'ou and Wu-han; and (3) the carrying out of preparatory work for the construction of a new industrial base in Southwest China.

Each of the principles underlying the above theory of regional development proceeds from propositions fundamental to Marxist ideology, and each may be found in Soviet treatises on political economy. Although the Chinese Communists claim that these principles are peculiarly appropriate to China's own history of economic development, they have encountered the same difficulties experienced by the Russians in attempting to apply these rather vague criteria in regional planning.

The first principle enumerated above -- that of locating production close to the sources of raw materials and to the areas of consumption -- springs from the belief of Soviet and Chinese planners that

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most transportation is an uneconomical use of resources. Shanghai is frequently cited as an example of an industrial area located far away from its sources of raw materials and fuel in the prerevolutionary period. As the leading textile center of China, 60 to 70 percent of its cotton supply had to be transported from North or Central China or even from abroad. In addition, several million tons of coal were brought in from North China each year to support Shanghai's industrial production. 11/ In conformity with this principle, more than 70 percent of total industrial investment during 1953-55 was channeled into Northeast China (Region I) and North China (Region III), regions which account for 85 and 66 percent, respectively, of national coal and electric power production. 12/ It will be noted that this principle does not provide any guidance when the consumption areas and the raw material and fuel-producing areas for a given industry are widely separated. The statement does imply, however, that the principle of locating industry so as to minimize total cost (including transportation cost) is one of the considerations in the minds of Chinese Communist planners.

The second principle -- that of national security -- has been a prominent feature of all Chinese Communist discussions of regional economic development. With about 73 percent 13/ of total industrial output and more than 80 percent of the output of the ferrous metallurgy and machine-building industries located in the coastal provinces in 1952, 14/ the Communist regime has considered itself peculiarly exposed and vulnerable to foreign attack. This was a major consideration in the decision to locate in China's interior more than two-thirds of the 694 major industrial construction projects provided in the First Five Year Plan. 15/

The third principle -- that of the economic and cultural elevation of peoples in backward areas -- is largely ideological in character. It may be assumed that the economic and security considerations embodied in the first two principles are the major factors underlying China's theory of regional development.

A final principle, not mentioned in the above statement but referred to in recent discussions by Chinese Communist writers, seeks to combine regional self-sufficiency with an optimum degree of specialization in the production of economic regions. 16/ Implementation of this principle in regional planning must await the official definition and announcement of economic regions scheduled for the Second Five Year Plan period.

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Expositions of the above principles in Chinese Communist publications have been vague. The principles themselves do not provide precise guides for the location of industry, and some are mutually contradictory. Experience has shown that the interpretation of these principles by the Chinese Communists has changed from year to year, as evidenced by the shift in 1956 to more intensive development of industry in the coastal provinces of China.

II. General Description of Regions.

A. Northeast China (Region I).

Northeast China (Region I) is the most important industrial region in Communist China, accounting for more than half of the nation's heavy industrial production. It covers an area of 297,000 square miles and includes the provinces of Heilungkiang, Kirin, and Liaoning.

The heaviest concentration of industrial activity is found in the coastal province of Liaoning. In one heavy industry zone are located Communist China's leading centers for the production of ferrous metals (An-shan); of coal, refined petroleum, and aluminum (Fu-shun); and of machine tools (Mukden). Closely linked by railroads to this complex is Port Arthur - Dairen, located on one of China's best harbors and containing sizable shipbuilding, machinery, and chemical industries as well as a major naval base. 17/

As the result of a conscious effort to shift industry inland, the industrial development of Northeast China is moving northward. 18/ In Kirin Province, large motor vehicle and railroad-equipment plants are under construction in Ch'ang-ch'un and a new chemical center is being established in the city of Kirin. Harbin, in the northernmost province of Heilungkiang, is becoming an important new base of heavy industry, specializing in the manufacture of electrical equipment and heavy machinery. 19/

This region possesses a rich mineral base of coal, iron, non-ferrous metals, and oil shale (see Figure 2*). Well over half of Communist China's iron ore reserves are located in the vicinity of An-shan. 20/ Although only about 7 percent of China's coal deposits are found in Northeast China, 21/ it accounts for 40 percent of national production and exports large quantities of coal to other regions and abroad.

* Following p. 20.

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A large part of the perimeter of the region is composed of densely wooded mountains, which contain about one-third of all the forests of the country. In the center of the region lies China's largest plain, a fertile tract of more than 115,000 square miles drained by the Sungari and Liao Rivers, where are grown such varied crops as wheat, kaoliang, soybeans, cotton, rice, sugar beets, and flax. 22/ The northern section of this plain is one of the key centers of land reclamation, with nearly one-third of the new land to be opened to cultivation under the First Five Year Plan located here. Producing about 12 percent of China's food supply and possessing less than 8 percent of the total population, this region is a major grain-surplus area. 23/

With nearly half of Communist China's railroads concentrated in this region in the prerevolutionary period, Northeast China has a well-developed communications system. This facilitates the export of coal, heavy manufactures, and foodstuffs to the rest of China and to the world and the import of industrial raw materials, complex capital goods, and some textiles.

B. Inner Mongolian Autonomous Region (Region II).

Established in 1947, the Inner Mongolian Autonomous Region (Region II) remained for several years a relatively minor, largely undeveloped agricultural region. With the addition of portions of the former Liaopei, Chahar, and Jehol Provinces and the incorporation of all of Suiyuan Province, however, this region has more than doubled in population and now accounts for one-tenth of China's total area. 24/

Moreover, the city of Pao-t'ou, located in southwestern Inner Mongolia, has been selected as the site of 1 of the 2 new iron and steel combines to be constructed during the First and Second Five Year Plans and to serve as the center of new industrial bases in the interior. With rail connections either completed or nearing completion to raw material centers in Inner Mongolia and North China (Region III) and to the USSR, the tempo of construction of this combine has accelerated rapidly. After the Pao-t'ou - Lan-chou railroad is completed, the transportation system of this region will be further improved and the products of the combine can then be sent to Northwest China (Region VIII) as well.

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The Pao-t'ou area is frequently described as rich in iron ore, coking coal, and heat-resistant materials. It is estimated that 150 million tons of iron ore deposits of very good quality are located at Pai-yu-no-po, 90 miles to the north, and a spur rail line to this site was slated for completion by the end of 1956. 25/ Although a modern shaft mine is being sunk at Ta-ch'ing-sh'an near Pao-t'ou, it is believed that much of the fuel for the new combine will be supplied from the Ta-t'ung coal center in North China. 26/

In the northern part of Inner Mongolia, the Great Khingan mountain range contains one-sixth of the total forest area of Communist China and is an important source of timber for the capital construction program of China. 27/ Animal husbandry is one of the basic branches of the economy, utilizing the southwestern and northwestern semidesert regions of the province and providing food, clothing, and draft animals for internal consumption and export. The center of agriculture is found in the southeast, where the predominant population is Chinese and the population density is the highest. The principal crop here is kaoliang, followed by millet, corn, and wheat. 28/ This region is a grain-surplus area, shipping out more than one-fourth of its total output in 1954 and receiving in return textiles and light manufactures. 29/

C. North China (Region III).

North China (Region III) is the second most important industrial region of Communist China, ranking behind only Northeast China (Region I) in heavy industry and East China (Region IV) in light industry. 30/ It covers an area of 639,000 square kilometers and includes the provinces of Hopeh, Shansi, Shantung, and Honan as well as the two leading metropolitan centers of Peiping and Tientsin.

There are three industrial zones in North China. One is triangular in shape, linking Peiping and T'ang-shan with Tientsin as the center and comprising one of the largest industrial areas in Communist China. 31/ Tientsin, which serves both as North China's largest port and as a key railroad junction, is China's second largest industrial city, 32/ specializing in textiles and other consumer goods and, more recently, in machine building and steel products. Peiping, the national capital, is the seat of government and military headquarters, the national center of education, and a major transportation center in its own right. Known in the past for its iron and steel and consumer goods production, its industrial base has been extended in the past few years to include important cotton textile mills and machine tool plants. 33/

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Situated further south on the Shansi-Hopeh border is the Shih-chia-chuang - Tai-yuan industrial complex. This zone, which is heralded as one of Communist China's future industrial bases in the interior, is being equipped with new or expanded facilities in coal mining, steel, heavy machinery, chemicals, cotton textiles, and textile machinery. ^{34/} The third new industrial base is located in the Cheng-chou - Lo-yang area of Honan Province in the southwestern part of this region. ^{35/} Situated in one of the notable cotton-producing districts of China, Cheng-chou is being developed into a major center of the textile industry. One-sixth of all cotton spindles to be added during the First Five Year Plan have been allocated to Cheng-chou. Lo-yang is to be the site of China's first tractor plant and also of a large mining-equipment plant to assist in the exploitation of the sizable coal deposits nearby.

North China possesses a rich mineral resource base for the development of heavy industry. More than half of Communist China's coal reserves are located here, ^{36/} together with substantial iron ore deposits. Although the Yellow River plain and loess lands in the region are well adapted to the production of wheat and coarse grains and although North China is the nation's largest grain producer, it is a grain-deficit area which must import large quantities of food each year. ^{37/} This situation is partly explained by the density of population and by the fact that much of the land in the south of this region is devoted to cotton production (one-half of the national total). Other exports of the region include coal, textiles, groundnuts, heavy industrial machinery, and chemicals.

D. East China (Region IV).

East China (Region IV) covers an area of 347,000 square kilometers and contains the two coastal provinces of Kiangsu and Chekiang as well as the inland province of Anhwei and the special municipality of Shanghai. Traditionally the center of light industry, largely owned and operated by foreign capital in the past, this region has been viewed by Chinese Communist planners as an existing industrial base to be utilized in support of new industrial construction in the regions of the interior. ^{38/}

The principal industrial zone of East China is located on the delta of the Yangtze River. It consists of the smaller cities of Hang-chou, Su-chou, Wu-shih, Nan-tung, and Nanking that surround

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Shanghai. Despite a conscious effort to restrict its importance, Shanghai still remains the largest industrial and commercial city in Communist China, accounting for about 20 percent of China's total industrial output in 1956.* Although Shanghai continues to produce more than one-third of China's cotton cloth, cotton yarn, and cigarettes, its industrial base has been broadened to include major components of China's machine building, electrical machinery, metallurgical, ship-building, and chemical industries. 39/ It is with a view of supporting this developing heavy industry in Shanghai that pig iron capacity at Ma-an-shan and coal mining capacity at Huai-nan are being expanded in nearby Anhwei Province. 40/

East China is deficient in mineral wealth, containing no more than 1 percent of Communist China's coal reserves and perhaps 3 percent of its iron ore reserves. This region is consistently short of coal and must import large quantities annually from North China (Region III) and Northeast China (Region I). 41/ A mild climate, plentiful rainfall, and fertile soil combine to make East China the most highly developed agricultural region in China. It stands first in the production of silk, tea, and jute; second in the production of wheat, cotton, and tobacco; and third in the production of rice, soybeans, and peanuts. Nevertheless, it is still a food-deficit area because of its concentrated urban population and must import grain from Northeast, Central (Region V), or Southwest (Region VII) China. 42/ A network of railroad, road, and water transport facilitates the extensive interregional trade of this region, with consumer goods and medium engineering products being exchanged for raw cotton, foodstuffs, and coal.

E. Central China (Region V).

Central China (Region V) has long been known as "China's granary," serving as the principal source of rice supply for the regions north of the Yellow River. Situated at the crossroads of the internal waterway and rail transport networks, it includes the three provinces of Hupeh, Hunan, and Kiangsi.

In prerevolutionary China the industrial development of the region was limited largely to the textile and food-processing industries, especially after the Chinese Nationalists in 1938 removed existing steel-smelting and steel-rolling equipment from Wu-han in the face of the Japanese advance and transferred it to Chungking in Southwest China

* See Appendix B.

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(Region VII). 43/ With the launching of China's First Five Year Plan in 1953, however, two new industrial bases were scheduled for construction in Central China. The most important is the Wu-han - Ta-yeh zone of heavy industry, where a new iron and steel combine second only to that at An-shan will be established. Other current or planned industrial construction includes the Ta-yeh open-cut iron mine, the Wu-han Heavy Machine Tool Plant, the Wu-ch'ang Shipyard, and possibly an internal combustion engine plant together with China's second motor vehicle plant. The second new industrial zone lies in the central part of Hunan Province, centering about the machine tool, electrical equipment, and textile industries of Ch'ang-sha and Hsiang-t'an. 44/

The relative scarcity of iron ore and coal in Central China has had a decisive influence in molding its past industrial development. Although iron ore deposits at Ta-yeh are of high grade and easily accessible, it will be necessary to augment this source of supply by shipping ore from Fukien Province in South China (Region VI). 45/ With only about 3 percent of China's coal reserves, the region is still dependent upon imports of coal from both North China (Region III) and East China (Region IV) despite strenuous efforts to expand its own mining capacity. Mineral wealth consists largely of ferroalloying metals and nonferrous metals -- the largest reserves and output of tungsten and antimony in the world are found here. 46/

With ample rainfall, extensive irrigation, and a warm climate permitting multiple cropping in the central and southern parts, Central China leads in the production of rice and rape seeds, stands second in the production of tea, and accounts for important shares of cotton and wheat output. 47/ Despite its heavy population density, it is a grain-surplus area and exports foodstuffs to North and East China.

The transportation facilities of Central China are more diversified than those of other regions, with a major trunk rail line running north and south and Communist China's largest navigable waterway, the Yangtze River, running east and west. Standing at the center of this transportation network is Wu-han, a transshipment point for waterborne cargoes from Northeast (Region I) and Southwest China and for rail cargoes from Peiping and Canton. Upon completion in 1957 of the huge Yangtze River Bridge at Wu-han, this city will become the main pivot of rail and road transport between North and South China.

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F. South China (Region VI).

The special features of the region of South China (Region VI) are its subtropical agriculture and its strategic position in proximity to Taiwan and Vietnam. Located on the Taiwan Strait and the South China Sea, it consists of the provinces of Fukien, Kwangtung, and Kwangsi as well as the island of Hainan.

Industrial development in South China has been limited almost entirely to consumer goods, with handicraft industry still contributing the major share of industrial output. ^{48/} Modern industry, which is largely concentrated in Canton, includes cotton and silk textiles, food processing (principally sugar), paper, and cement. Industrial investment has centered on the new construction or expansion of existing sugar refineries, which accounted for 70 percent of the sugar production of Communist China in 1953. ^{49/} A much larger amount of state investment in the region has been utilized for development of the following transportation and communications facilities: the early completion of a railroad line to the Indochina border in order to furnish military support to the Viet Minh forces; the construction of a branch railroad line to Tsamkong (Fort Bayard) and the development of a deep-sea harbor at this point to replace the relatively poor port of Canton; and the linking of Amoy with the inland rail net, thereby greatly increasing Communist China's logistic capabilities in the Taiwan Strait area.

Although moderately well endowed with mineral resources, the mining industry of South China is still undeveloped. A major deficiency is coal, which must be imported from Central China (Region V) and North China (Region III) to provide fuel for industry. Future plans call for both the expansion of coal production and the exploitation of the abundant hydroelectric resources of this region. ^{50/} One of China's leading iron deposits is under development on Hainan Island and high-grade iron ore in the Lung-yen District of Fukien Province will be extracted as a supplementary source of supply for the Wu-han iron and steel complex. Of the relatively plentiful supply of nonferrous metals found here, tin and antimony already account for important shares of national output.

Considerable emphasis has been placed on the development of agriculture during the period of the First Five Year Plan. Formerly dependent on rice imports from Southeast Asia, South China is now said

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to be more than self-sufficient in foodstuffs. In keeping with its subtropical climate, this region leads in the production of cane sugar and fruit, stands second in silk production, and produces one-tenth of the nation's tea. 51/ A large-scale program to develop rubber plantations is under way in both Kwangtung Province and Hainan.

G. Southwest China (Region VII).

Southwest China (Region VII) possesses an essentially self-contained economy relatively remote from the main channels of communication and trade in Communist China. Covering an area of 430,000 square miles, it includes the provinces of Szechwan, Kweichow, and Yunnan.

Southwest China experienced a rapid rate of economic growth during World War II but has received little emphasis in Communist China's industrialization program during the period of the First Five Year Plan. 52/ One reason has been the need to develop a modern transport system. With Ch'eng-tu in western Szechwan as the hub, railroad lines have been or will be extended north to Pao-ch'i, southeast to Chungking, and south to K'un-ming. Moreover, the planned construction of a second Yangtze River bridge at Chungking and of the Szechwan-Kweichow Railroad will permit through traffic to Tsamkong Harbor (Fort Bayard) on the South China coast. 53/ Investments in railroad and highway transport accounted for more than half of total capital construction investment in this region in 1954. 54/

It has also been necessary to carry out extensive prospecting and surveying in order to secure reliable data on the natural resources of this region, principally with respect to iron, coal, petroleum, and nonferrous metals. Although coal and iron are both relatively scarce, discoveries in Szechwan of deposits of both of these minerals have been described as sufficient to support the future construction of an iron and steel base in Chungking. To compensate for its coal deficiency, the hydroelectric resources of Southwest China are estimated to constitute 65 percent of the total in Communist China. 55/ Construction is partly completed on the Shih-tzu-tan hydroelectric station which will serve as a supplementary source of power for Chungking. The region is particularly noted for nonferrous metals, with the nation's largest reserves of tin and copper and with 80 percent of China's tin production concentrated in the Ko-ch'iu area of Yunnan Province.

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Industrial construction to date has been limited almost entirely to the cities of Chungking and Ch'eng-tu in Szechwan Province and the Ko-ch'iu - K'un-ming area of Yunnan Province. Chungking's iron and steel capacity, brought in by the Chinese Nationalists during World War II, has been expanded, together with new additions in the power, machine tool, textile, and food-processing industries. ^{56/} Ch'eng-tu is the site for construction of China's largest measuring instrument and cutting tool plant and is slated to become a machine tool center in this region. ^{57/} The development of tin and copper production in the Ko-ch'iu - K'un-ming area will make this the major supply base of nonferrous metals outside of Sinkiang.

Southwest China is characterized by a highly varied topography and climate, with much of the food production centered in the Szechwan Basin, where a mild climate, rich soil, and abundant rain produce favorable conditions for agriculture. Although Szechwan is the largest grain-producing province in China, it is also the most populous, and Southwest China as a whole is considered to be little more than self-sufficient in foodstuffs. ^{58/} Following the development of transportation and communications, Southwest China will expand its exports of nonferrous metals and agricultural products and receive in exchange some light manufactures and machinery.

H. Northwest China (Region VIII).

Northwest China (Region VIII) is the largest of Communist China's economic regions, occupying nearly 20 percent of the nation's territory and including the three provinces of Shensi, Kansu, and Tsinghai. A relatively underdeveloped area, it bulks large in the long-range planning of the Chinese Communists as one of the three major industrial areas of the country.

As in Southwest China (Region VII), most of the investment to date has been devoted to the development of transportation facilities and to the large-scale prospecting of the abundant mineral resources of the region. Lan-chou in Kansu Province is to become the hub of an extensive communications network, with railroad lines completed or in various stages of construction extending to the east (to join the Lunghai railroad), to the north (to the iron and steel combine at Pao-t'ou), to the northwest (to Sinkiang and the USSR), and to the west (to the new petroleum area in the Tsaidam Basin). Major emphasis in geological prospecting has been assigned to exploring the petroleum

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deposits of this region, which already accounts for more than half of Communist China's production of crude oil. Extensive oil deposits have been discovered in the Tsaidam Basin in Tsinghai Province where reportedly 91 oil-bearing structures have been found. 59/ Recent discoveries of iron ore, principally in the Ho-hsi corridor in Kansu, are said to be sufficient for an iron and steel base, 60/ and coal is plentiful, with nearly one-third of China's reserves found in this region. 61/ Nevertheless, considerable investment and time are required before these resources can be exploited and made available for industrial construction within the region. Current coal production is no more than 3 percent of the national total, and it is still necessary to transport coal more than 3,000 kilometers from Northeast China (Region I) to make up for the deficiency. 62/

Except for the expansion of the existing oil base at Yu-men in Kansu Province, industrial construction in Northwest China has been largely confined to the cities of Lan-chou and Sian. Although reports since 1950 have stressed the growing industrial importance of Lan-chou in southeastern Kansu, large-scale investment did not get under way until 1956 when construction started on a huge petroleum refinery and a petroleum drilling equipment plant. 63/ Already there has been some development of the chemical, power, cement, woolen textile, and food-processing industries in this city. On the other hand, Sian has been selected as the site of a major inland cotton textile base, with nearly 25 percent of all cotton spindles to be added during the First Five Year Plan allocated to this city and nearby Hsien-yang. Located in the K'uan-ch'uan Plain, a rich cotton-producing area in central Shensi Province, this complex was able to satisfy more than half of the region's demand for cotton textiles in 1954. 64/ Sian is also slated to become a major railroad center during the Second and Third Five Year Plan periods, with rail lines projected to the new iron and steel bases in Pao-t'ou to the north and Wu-han to the southeast. 65/

Northwest China is characterized by a complicated topography, with extremes of elevation averaging 3,000 meters above sea level, and a typically continental climate. Generally speaking, it lacks rainfall, especially in the western parts, and for this reason irrigation is the key to the development of agriculture. This region's irrigated area was expanded by one-third from 1950 to 1954, accounting for one-fifth of the newly irrigated land for all China during this period. Partly for this reason, Northwest China is now considered to be self-sufficient in food production, 66/ specializing in wheat and such miscellaneous

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grains as millet, maize, kaoliang, and potatoes. Animal husbandry also plays a large part in the regional economy. The region produces half of China's wool and sizable quantities of animal byproducts for export. 67/ Other principal exports are cotton, rare minerals, and petroleum which are exchanged for light manufactures and engineering equipment.

Long-range development plans for Northwest China include the construction of additional industrial bases, the initiation of large-scale land reclamation, and the building of a multipurpose reservoir at Liu-chia Gorge as part of the project for harnessing the Yellow River. A continuing problem is the region's sparse population, only 5 percent of the national total, and consequent lack of manpower, especially technical manpower. The Chinese Communist government is faced, therefore, with the necessity of mobilizing and transporting large numbers of technicians and skilled labor if this ambitious program for the development of Northwest China is to be implemented.

I. Sinkiang Uighur Autonomous Region (Region IX).

The Sinkiang Uighur Autonomous Region (Region IX) is the largest political unit in Communist China, covering an area three times the size of France. On the other hand, the population numbers about 5 million, of which only about 6 percent are Chinese.

Before 1949, modern industry was practically nonexistent in this region. Although some factories and mines have been constructed, large-scale construction in Sinkiang is not scheduled to begin until the Second Five Year Plan period. 68/ Completion of the Trans-Sinkiang Railroad, probably by 1958 or 1959, will make possible the shipment of necessary equipment and supplies, both from the industrial bases in the eastern part of Communist China and from the USSR. Urumchi, the capital of Sinkiang, is slated to become the center of heavy industry in the western border regions of China, specializing in the production of iron and steel, power, and cement; the repair and assembly of motor vehicles; and the processing of nonferrous metals. 69/

Of more significance for national economic development are the recent discoveries of vast oil deposits in the Wu-su - Karamai area of northern Sinkiang. The Chinese Communists are relying heavily upon this oilfield, containing estimated reserves of more than 100 million tons, to achieve self-sufficiency in petroleum production. In

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addition to constructing a branch railroad line to the area, a huge refinery is to be built here. 70/ Despite claims of extensive coal deposits, a long-range program of prospecting and new mine construction will be necessary before fuel requirements can be satisfied within the region. 71/ Less is known of iron ore deposits, although some ore is available near the metallurgical plant in Urumchi. Also found near Urumchi in the T'ien-shan Mountains are substantial quantities of lead, zinc, and copper.

Surrounded by high mountains on all sides, Sinkiang possesses a continental arid steppe and desert climate. Since agricultural production is dependent upon irrigation, considerable efforts have been made to expand the area under cultivation through the construction of new irrigation systems and the expansion of old ones. Most of the reclamation work has been handled by the military forces, which are scheduled to produce nearly one-tenth of the grain output and more than one-half of the cotton output of the region in 1957. 72/ The northern part of Sinkiang, which has level, rich land suitable for mechanized farming, is one of the key areas in China's land reclamation program. Plans are already under way for the large-scale resettlement of surplus population from North China (Region III) to engage in cotton and grain production in this region. 73/

III. Calculation and Presentation of Gross Regional Product.

The estimates of gross regional product presented in this report are based on estimates of gross national product (GNP) and its components for all of Communist China. The regional data consist essentially of estimates for the years 1952, 1954, and 1957 of the total physical output of a long list of commodities, together with the percentage of the total produced in each region. The regional shares of production of a list of selected commodities are given also for 1936 in order to show output trends based on peak production years in the pre-war period. Table 1* shows the regional production of selected commodities in China for 1936, 1952, and 1957. The regional shares were applied to the national estimates of value added in the production of each commodity. The sum of these values was considered to be a representative sample of the regional output of the major industrial

* Table 1 follows on p. 21.

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sectors producing physical goods. These samples were then inflated to full coverage by applying them to the national value-added estimates for the respective major industrial sectors; the results being combined with estimates of the value added by the services sector to yield a measure of total regional production.

The major findings of this report are presented in Tables 2-6* and in Tables 7-11** to serve as a basis for subsequent discussion. Table 2 contains measures of real gross regional product (in constant 1952 prices) according to major sectors of origin for 1952, 1954, and 1957. The same data, expressed as a percentage of the national total to show the regional distribution of GNP, are presented in Table 3. Table 4, indicating the relative importance of each major economic sector in the output of each region, depicts the changing composition of production in each regional economy. Table 5 shows comparative rates of growth by major economic sector within each region. Table 6 presents per capita GNP and gross regional product for the years in question. Table 7 presents data on regional population. Tables 8-11 indicate the value of production of a sample of products in each major economic sector together with the regional coefficients for the major sectors of the economy.

Figures 2-7*** show graphically various aspects of the regional economy of Communist China. Figure 2 illustrates the geographical distribution of China's mineral deposits as revealed in a recent Chinese Communist publication. Figure 3 shows the sector composition of GNP and gross regional product. Figures 4 and 5 indicate the regional distribution of manufacturing and agricultural production. Figure 6 depicts the regional distribution of GNP and population. Figure 7 shows major new railroad construction in China since 1949. Figure 8 locates the major Soviet-aid projects in China

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* Tables 2-6 follow on pp. 23-27.

** See Appendix A.

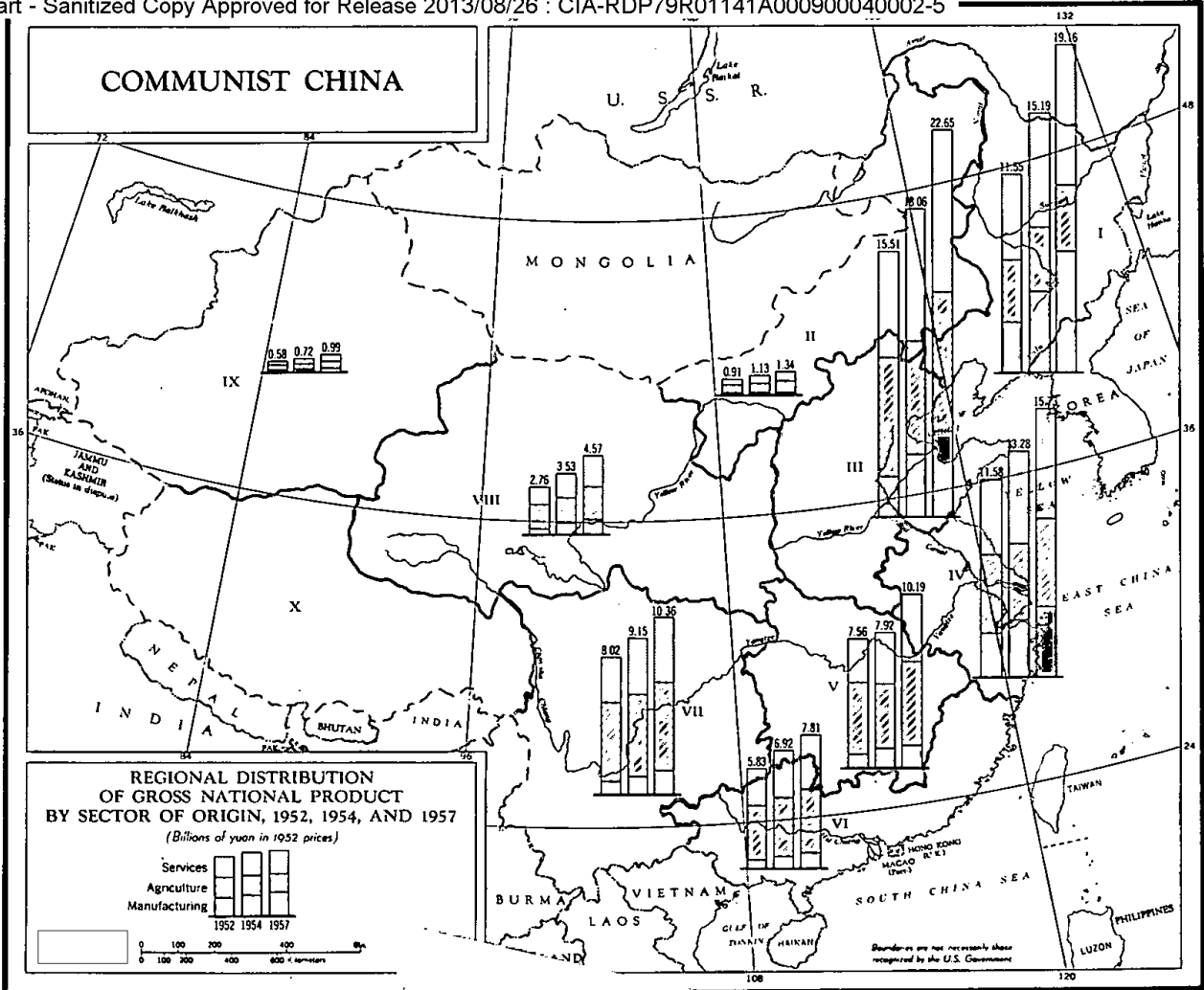
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**** Continued on p. 27.

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Figure 3

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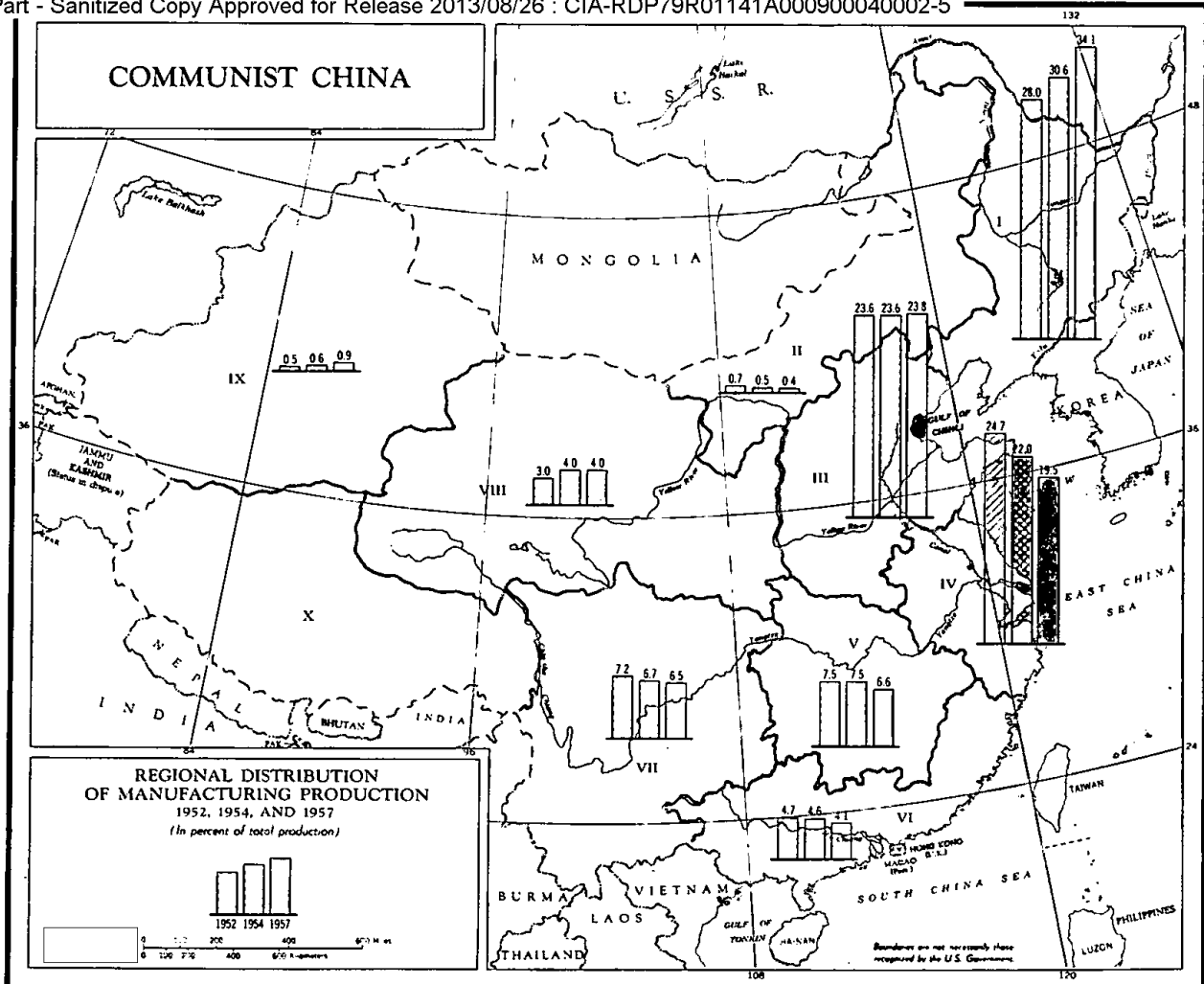
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Figure 4



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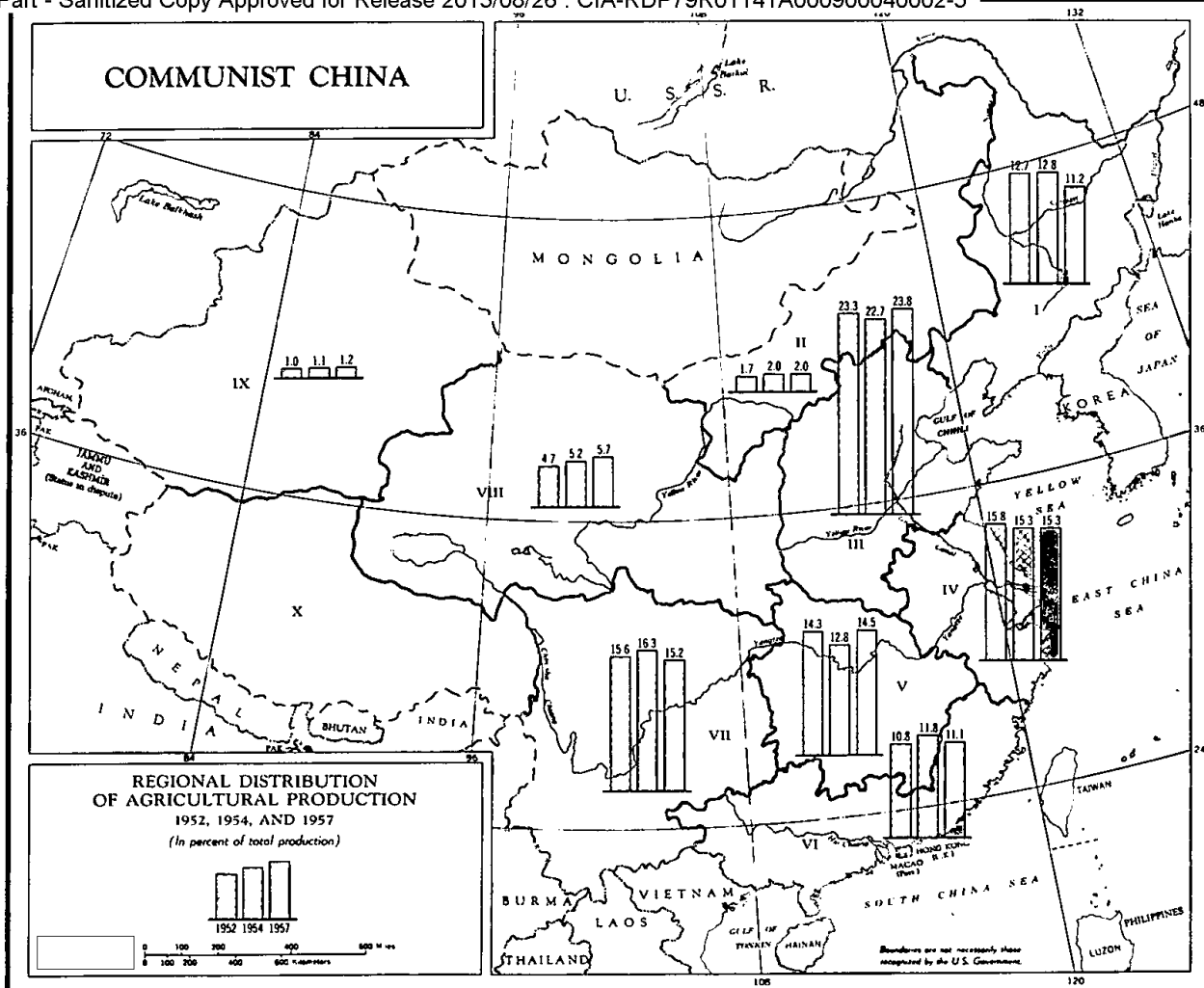
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Figure 5



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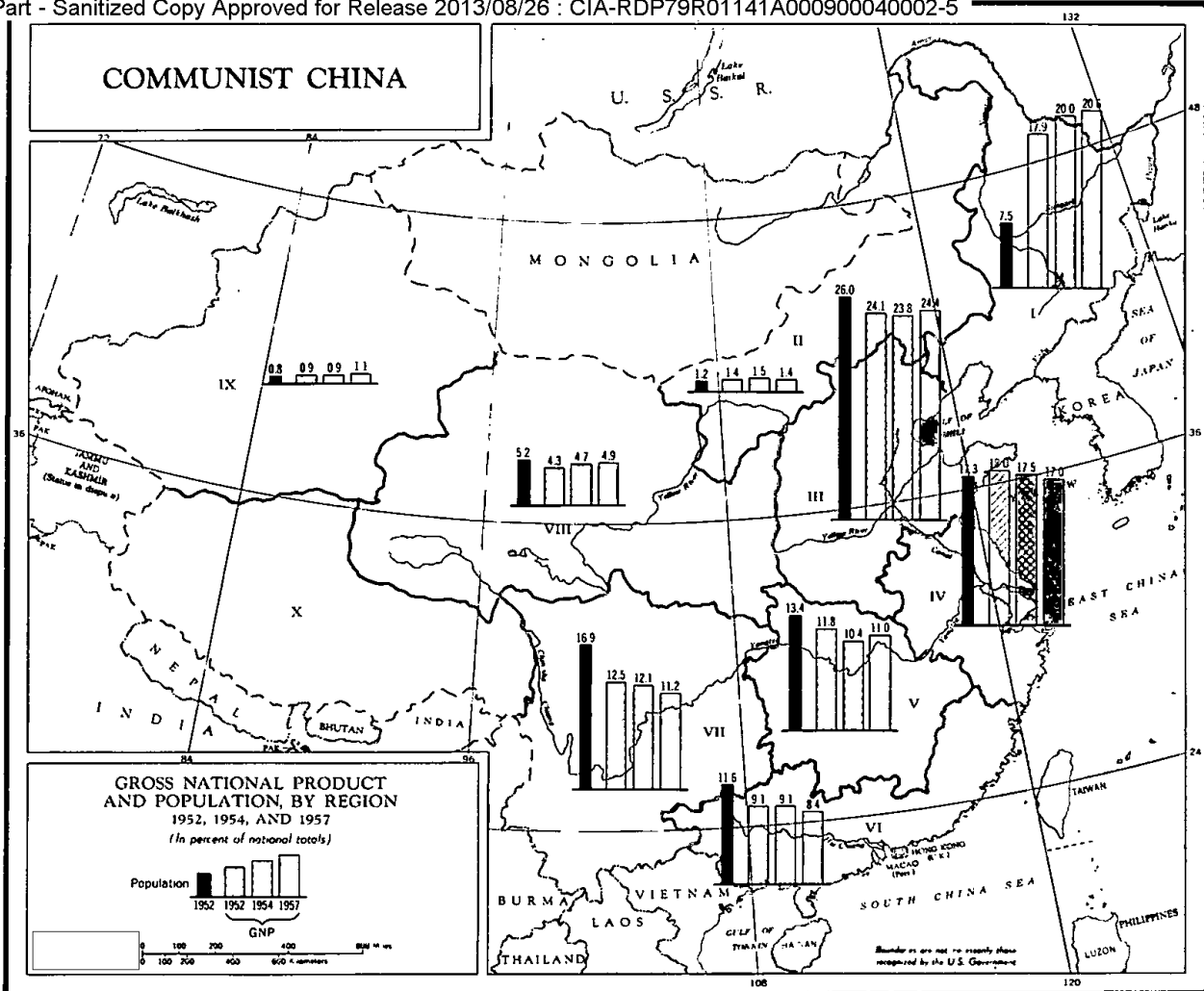
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Figure 6

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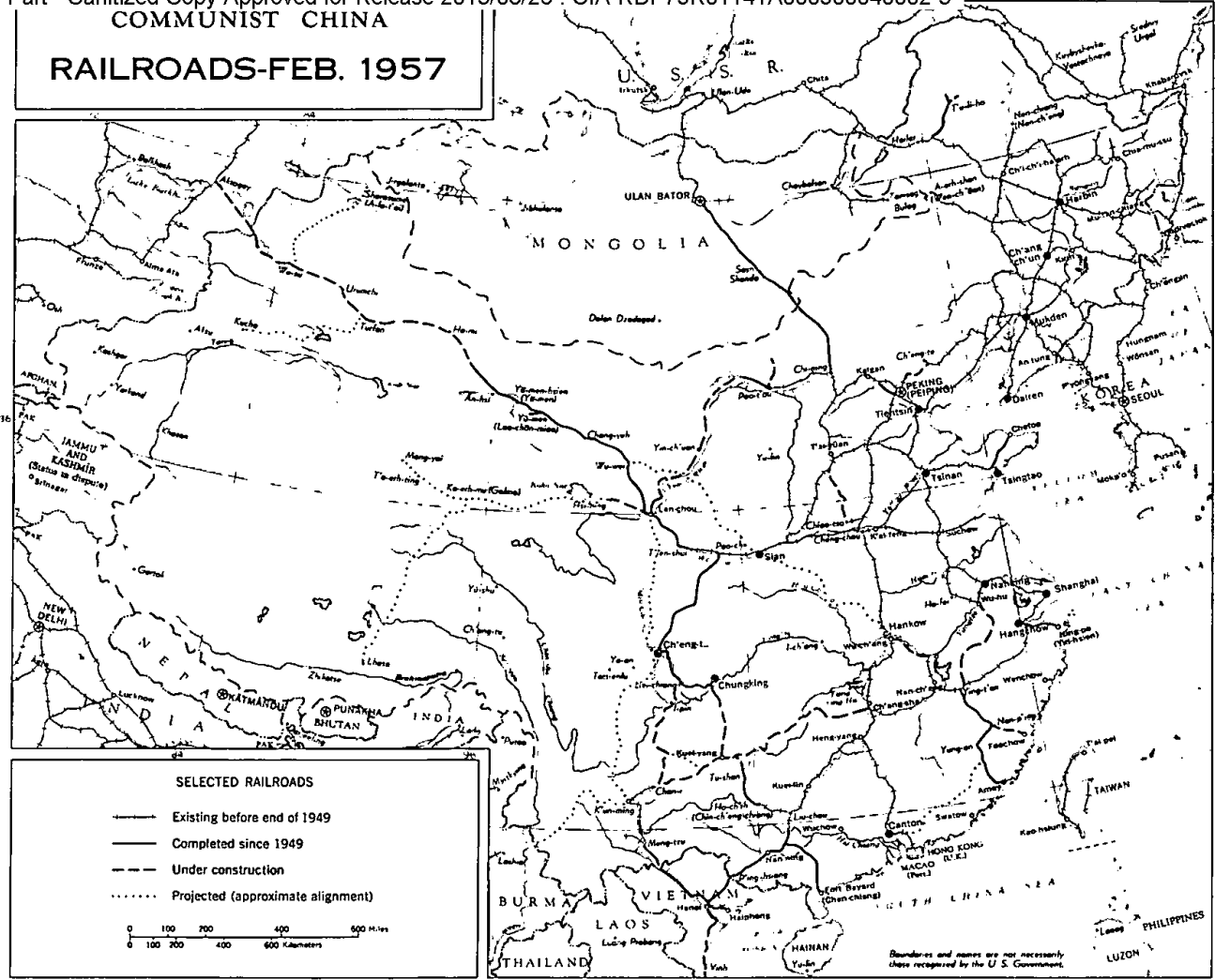
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COMMUNIST CHINA RAILROADS-FEB. 1957



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Table 1
Production of Selected Commodities in Communist China, by Region a/
1936, 1952, and 1957

Commodity	Region b/																											Percent of National Total		
	I			II			III			IV			V			VI			VII			VIII			IX					
	1936	1952	1957	1936	1952	1957	1936	1952	1957	1936	1952	1957	1936	1952	1957	1936	1952	1957	1936	1952	1957	1936	1952	1957	1936	1952	1957			
Electric power (installed capacity)	33.1	38.4	42.0	0.2	1.5	1.4	21.2	23.5	22.7	33.3	20.9	16.4	4.9	4.7	4.4	6.5	5.7	4.5	0.7	3.9	5.0	0.1	1.2	2.9	0	0.2	0.7			
Coal	34.5	39.0	40.7	0.5	1.3	1.0	49.2	45.0	45.2	4.1	5.0	5.1	4.9	2.4	2.2	0.7	0.5	0.4	5.0	3.0	1.8	0.9	3.0	2.8	0.2	0.8	0.8			
Iron ore	41.3	63.0	49.8	0	0	0	21.1	20.3	25.0	15.7	2.0	1.7	18.4	8.0	16.7	1.1	5.0	5.1	2.3	1.7	1.7	0.1	0	0	0	0	0			
Pig iron	79.5	51.1	72.3	0	0	0	12.1	34.2	16.7	1.8	1.2	4.1	4.5	1.7	0.7	0	0	0	3.5	10.1	5.0	0	0	0	0	1.7	1.2			
Finished steel	84.4	65.4	69.6	0	0	0	0	11.7	14.0	15.6	7.2	4.4	0	5.2	2.6	0	0.2	0.1	0	9.8	9.0	0	0	0	0	0	0.5	0.3		
Tungsten	0	0	0	0	0	0	0	0	0	0	0	0	81.7	80.0	80.0	15.7	17.5	17.5	2.6	2.5	2.5	0	0	0	0	0	0			
Copper	0	93.8	71.4	0	0	0	0	0	0	0	0	4.0	0	0	0	0	0	4.0	100.0	6.2	20.6	0	0	0	0	0	0			
Lead	0	80.0	80.0	0	0	0	0	0	0	0	0	0	87.2	20.0	20.0	6.4	0	0	6.4	0	0	0	0	0	0	0	0			
Tin	0	0	0	0	0	0	0	0	0	0	0	0	5.0	5.0	5.0	15.0	15.0	15.0	80.0	80.0	80.0	0	0	0	0	0	0			
Cement	50.0	36.3	37.7	0	0	0	16.9	25.1	27.5	19.2	16.4	14.2	0	13.9	9.3	10.8	6.6	4.2	3.1	0.8	2.3	0	0.1	3.3	0	0.8	1.5			
Crude oil	100.0	51.4	36.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.9	50.9	0	2.7	12.8			
Refined petroleum	100.0	63.8	56.2	0	0	0	0	0	0	0	0	8.6	0	0	0	0	0	0	0	0	0	0	34.0	23.2	0	2.2	12.0			
Sulfuric acid	87.0	48.0	46.0	0	0	0	2.0	4.0	13.0	7.0	11.0	18.0	0	0	0	3.0	34.0	18.0	1.0	3.0	5.0	0	0	0	0	0	0			
Ammonium sulfate	100.0	80.0	77.0	0	0	0	0	0	1.0	0	15.0	6.0	0	0	0	0	5.0	15.0	0	0	1.0	0	0	0	0	0	0			
Caustic soda	13.0	31.0	16.0	0	0	0	64.0	29.0	50.0	20.0	5.0	16.0	0	0	0	0	5.0	1.0	3.0	30.0	17.0	0	0	0	0	0	0			
Cotton textiles (location of spindle units)	3.1 c/	8.5	7.7	0	0	0	21.6 c/	21.2	29.0	66.3 c/	57.0	43.3	8.0 c/	5.7	7.0	0.4 c/	0.6	0.5	0	4.8	4.0	0.5 c/	1.9	8.1	0.1 c/	0.3	0.4			

a. For methodology, see Appendix B.

b. The regional structure of the Chinese Communist economy is discussed in I, above.

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Table 2

Value of the Gross National Product of Communist China, by Region and by Sector of Origin a/
1952, 1954, and 1957

Million Yuan (1952 Prices)

Sector of Origin	Year	Region									Total
		I	II	III	IV	V	VI	VII	VIII	IX	
Manufacturing	1952	2,860	70	2,410	2,520	770	480	730	310	50	10,200
	1954	4,680	80	3,610	3,360	1,150	700	1,020	610	90	15,300
	1957	7,100	90	4,960	4,050	1,370	850	1,350	840	190	20,800
Agriculture	1952	3,760	510	6,900	4,680	4,230	3,200	4,630	1,390	300	29,600
	1954	3,780	590	6,700	4,510	3,780	3,480	4,810	1,530	320	29,500
	1957	3,800	680	8,070	5,190	4,910	3,760	5,150	1,930	410	33,900
Services	1952	4,930	330	6,200	4,380	2,560	2,150	2,660	1,060	230	24,500
	1954	6,730	460	7,750	5,410	2,990	2,740	3,320	1,390	310	31,100
	1957	8,260	570	9,620	6,490	3,910	3,200	3,860	1,800	390	38,100
Total	1952	<u>11,550</u>	<u>910</u>	<u>15,510</u>	<u>11,580</u>	<u>7,560</u>	<u>5,830</u>	<u>8,020</u>	<u>2,760</u>	<u>580</u>	<u>64,300</u>
	1954	<u>15,190</u>	<u>1,130</u>	<u>18,060</u>	<u>13,280</u>	<u>7,920</u>	<u>6,920</u>	<u>9,150</u>	<u>3,530</u>	<u>720</u>	<u>75,900</u>
	1957	<u>19,160</u>	<u>1,340</u>	<u>22,650</u>	<u>15,730</u>	<u>10,190</u>	<u>7,810</u>	<u>10,360</u>	<u>4,570</u>	<u>990</u>	<u>92,800</u>

a. For methodology, see Appendix B.

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Table 3
 Distribution of the Gross National Product of Communist China
 by Region and by Sector of Origin ^{a/}
 1952, 1954, and 1957

Sector of Origin	Year	Region (Percent of Total Output)									Total Output	
		I	II	III	IV	V	VI	VII	VIII	IX	Percent	Million Yuan
Manufacturing	1952	28.0	0.7	23.6	24.7	7.5	4.7	7.2	3.0	0.5	100	10,200
	1954	30.6	0.5	23.6	22.0	7.5	4.6	6.7	4.0	0.6	100	15,300
	1957	34.1	0.4	23.8	19.5	6.6	4.1	6.5	4.0	0.9	100	20,800
Agriculture	1952	12.7	1.7	23.3	15.8	14.3	10.8	15.6	4.7	1.0	100	29,600
	1954	12.8	2.0	22.7	15.3	12.8	11.8	16.3	5.2	1.1	100	29,500
	1957	11.2	2.0	23.8	15.3	14.5	11.1	15.2	5.7	1.2	100	33,900
Services	1952	20.1	1.3	25.3	17.9	10.4	8.8	10.9	4.3	0.9	100	24,500
	1954	21.7	1.5	25.0	17.5	9.6	8.8	10.7	4.5	1.0	100	31,100
	1957	21.7	1.5	25.2	17.0	10.3	8.4	10.1	4.7	1.0	100	38,100
Total	1952	17.9	1.4	24.1	18.0	11.8	9.1	12.5	4.3	0.9	100	64,300
	1954	20.0	1.5	23.8	17.5	10.4	9.1	12.1	4.7	0.9	100	75,900
	1957	20.6	1.4	24.4	17.0	11.0	8.4	11.2	4.9	1.1	100	92,800

a. For methodology, see Appendix B.

Table 4
Sector Shares of the Gross National and Gross Regional Products
of Communist China a/
1952, 1954, and 1957

Sector of Origin	Year	Region									Total
		I	II	III	IV	V	VI	VII	VIII	IX	
Manufacturing (Percent)	1952	24.8	7.7	15.5	21.8	10.2	8.2	9.1	11.2	8.6	15.9
	1954	30.8	7.1	20.0	25.3	14.5	10.1	11.1	17.3	12.5	20.1
	1957	37.1	6.7	21.9	25.7	13.4	10.9	13.0	18.4	19.2	22.4
Agriculture (Percent)	1952	32.5	56.0	44.5	40.4	55.9	54.9	57.7	50.4	51.7	46.0
	1954	24.9	52.2	37.1	34.0	47.7	50.3	52.6	43.3	44.4	38.9
	1957	19.8	50.7	35.6	33.0	48.2	48.1	49.7	42.2	41.4	36.5
Services (Percent)	1952	42.7	36.3	40.0	37.8	33.9	36.9	33.2	38.4	39.7	38.1
	1954	44.3	40.7	42.9	40.7	37.8	39.6	36.3	39.4	43.1	41.0
	1957	43.1	42.5	42.5	41.3	38.4	41.0	37.3	39.4	39.4	41.1
Value of product (Million yuan)	1952	11,550	910	15,510	11,580	7,560	5,830	8,020	2,760	580	<u>64,300</u>
	1954	15,190	1,130	18,060	13,280	7,920	6,920	9,150	3,530	720	<u>75,900</u>
	1957	19,160	1,340	22,650	15,730	10,190	7,810	10,360	4,570	990	<u>92,800</u>

a. For methodology, see Appendix B.

Table 5

Comparative Growth of the Gross National and Gross Regional Products
 of Communist China, by Sector of Origin a/
 1952, 1954, and 1957

		1952 =100									
		Region									
Sector of Origin	Year	I	II	III	IV	V	VI	VII	VIII	IX	Total
Manufacturing	1952	100	100	100	100	100	100	100	100	100	100
	1954	164	114	150	133	149	146	140	197	180	150
	1957	248	129	206	161	178	177	185	271	380	204
Agriculture	1952	100	100	100	100	100	100	100	100	100	100
	1954	101	116	97	96	89	109	104	110	107	100
	1957	101	133	117	111	116	118	111	139	137	115
Services	1952	100	100	100	100	100	100	100	100	100	100
	1954	137	139	125	124	117	127	125	131	135	127
	1957	168	173	155	148	153	149	145	170	170	156
Total	1952	100	100	100	100	100	100	100	100	100	100
	1954	132	124	116	115	105	119	114	128	124	118
	1957	166	147	146	136	135	134	129	166	171	144

a. For methodology, see Appendix B.

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Table 6

Per Capita Gross National and Gross Regional Products
of Communist China a/
1952, 1954, and 1957

Region	1952		1954		1957	
	Yuan	Percent	Yuan	Percent (1952=100)	Yuan	Percent (1952=100)
I	267	100	344	129	419	157
II	133	100	161	121	185	139
III	104	100	118	113	143	138
IV	116	100	130	112	149	128
V	98	100	101	103	125	128
VI	87	100	101	116	110	126
VII	82	100	92	112	101	123
VIII	91	100	114	125	143	157
IX	120	100	146	122	194	162
Total China	111	100	129	116	152	137

a. For methodology, see Appendix B.

located in various regions, provinces, or cities. Although less than a third of the 156 Soviet-aid projects have been specifically labeled as such by the Chinese Communists, there is substantial evidence to warrant inclusion of the projects listed. In nearly all cases, the projects are known to have received Soviet aid on a large scale, including not only technical assistance but also sizable shipments of equipment and materials. As only 121 projects are listed, 35 of the original 156 major Soviet-aid projects remain to be identified. Of the 35 projects, nearly half are believed to be military construction for which no information is available.

IV. Regional Distribution of Production.

Three of the regions of Communist China dominate the national economy, together producing about 60 percent of all commodities and

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services. As indicated by Table 3,* Northeast China (Region I) accounts for 20 percent of the national total, principally on account of the concentration of about one-half of the country's heavy industry, transportation, and construction activity in this area. North China (Region III) contributes almost 25 percent of the GNP, ranking first in agriculture and second only to Northeast China in industry. As the seat of the government, the military headquarters, and most of the institutions of higher learning, this region also leads in the output of services. East China (Region IV), as the center of light industrial production and an important agricultural region, is the third major economic region in Communist China.

Central China (Region V) and Southwest China (Region VII) produce nearly equal shares of GNP, each accounting for more than 10 percent of the total. The economies of these regions are similar, consisting for the most part of agricultural production together with some modern industrial installations. The neighboring region of South China (Region VI) is somewhat less productive because of its smaller population and even lower level of industrial development. Northwest China (Region VIII), the Inner Mongolian Autonomous Region (Region II), and the Sinkiang Uighur Autonomous Region (Region IX) contribute the least, ranging from about 1 percent to 5 percent and bearing out the characterization of these regions as backward, underdeveloped areas.

V. Trends in Gross Regional Product, 1953-57.

During the period of the First Five Year Plan, the regions showing the most rapid rates of growth are Northeast China (Region I), Northwest China (Region VIII), and the Sinkiang Uighur Autonomous Region (Region IX), where total output will rise by at least 66 percent (Table 5**). In the same period, production of goods and services for Communist China as a whole will increase only 44 percent. All the regions which are developing at a rate above the national average -- Northeast China, the Inner Mongolian Autonomous Region (Region II),

* P. 24, above.
** P. 26, above.

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North China (Region III), Northwest China, and the Sinkiang Uighur Autonomous Region -- are located in the northern half of China, roughly that area north of the Yellow River. The regions in South China, however, experience rates of growth below the national average, with the least development in Southwest China (Region VII).

Thus the data indicate a noticeable shift northward in the regional distribution of the economic activity of Communist China during the First Five Year Plan period. This is seen most clearly in the manufacturing sector and more specifically in the manufacturing sector of Northeast China, which will increase its share of national heavy industrial output from about 48 percent in 1952 to 52 percent in 1957. This reflects the decision of the Chinese Communists to assign top priority for this period to intensive development of the heavy industry base in Northeast China and North China, with over 70 percent of total industrial investment during 1953-55 allocated to these two regions. ^{74/} In the regions south of the Yellow River, rapid growth is prevented by the predominantly agricultural nature of the economy and also by the declared policy of the Chinese Communists (until 1956) to discourage further development of the light industrial base in the coastal provinces of East China.

Even more striking changes will occur in the composition of the gross regional products themselves. As shown in Table 4,* the relatively industrialized regions (those where manufacturing contributes relatively more to gross regional product than is the case for the entire country) are Northeast China and East China (Region IV), with North China approximating the national average. The remaining regions of China are primarily agricultural in character. As would be expected, the relative importance of the manufacturing and services sectors in the total output will increase at the expense of agriculture in each region. Although in absolute terms manufacturing will register the greatest development in the original industrial regions of Northeast China and North China, the most rapid growth of industrialization will take place in Northwest China and in the Sinkiang Uighur Autonomous Region, with increases in excess of 170 and 280 percent, respectively, in the Plan period. In part a reflection of the underdeveloped industry of these regions in the prerevolutionary period, this rapid growth also reveals the sizable investment

* P. 25, above.

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by the government in the petroleum and textile industries of these areas. Despite the fact that the most rapid development of agricultural output is also planned for Northwest China, it is clear that the Chinese Communists are concentrating their efforts in this sector on the regions south of the Yellow River, which are slated to produce about 60 percent of the anticipated increase in grain production during the First Five Year Plan.

VI. Regional Variations in Per Capita Production.

A comparison of the regional distribution of economic activity in Communist China (Table 2*) with the regional distribution of population (Table 7**) shows wide variations in per capita output as between regions. The results of such a comparison are presented in Table 6.***

Interregional comparisons, at best, must be interpreted with caution because they reflect a varying regional distribution of economic activities. In the case of Communist China, the problem is complicated further by the following considerations: (1) The price structure of China overvalues industrial goods in comparison with agricultural products and thus tends to overstate the product of the developed industrial regions of Northeast China (Region I), North China (Region III), and East China (Region IV); (2) no allowance has been made in this report for regional variations in prices; and (3) the accuracy of the data is further limited by considerations of the samples employed in developing gross regional production. For example, the omission of animal husbandry from the list of regional indicators tends to understate the contributions of the Inner Mongolian Autonomous Region (Region II), Northwest China (Region VIII), and the Sinkiang Uighur Autonomous Region (Region IX), and the failure to include such subtropical agricultural products as sugar and fruit has the same effect on South China (Region VI). With these qualifications in mind, it is possible to make the following observations on regional variations in per capita production.

* P. 23, above.

** See Appendix A.

*** P. 27, above.

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The high level of per capita production in Northeast China, more than twice that of any other region, reflects the fact that this region furnishes about 20 percent of China's GNP with less than 8 percent of its population. Moreover, Northeast China will experience the greatest absolute growth in per capita output during the First Five Year Plan. A highly productive agriculture supplements the concentration of manufacturing, transportation, and construction activity in this region. Other regions which surpass the national average for per capita output are the Inner Mongolian Autonomous Region and the Sinkiang Uighur Autonomous Region, both of which have farm output indexes well above their population indexes. Both these regions will enjoy sizable increases in per capita output by 1957, reaching levels about 40 to 60 percent above that of 1952.

Although North China and East China each make major contributions to national output, they also display the greatest density of population, which reduces their per capita production to a level approximating the national average. Per capita production in the predominantly agricultural regions south of the Yellow River falls well below the national average, a trend which will continue through 1957. Of these regions, Southwest China (Region VII), which lacks both modern industry and a modern transportation system, displays the lowest per capita output of any region in China and will experience the least growth in this respect during the period of the First Five Year Plan. Although Northwest China also possesses a predominantly agricultural economy, it shows a substantially higher per capita output figure because of its meager population. Moreover, per capita output during the Plan period will grow as rapidly here as in Northeast China, another index of the rapid tempo of development in this inland area.

VII. Development of Coastal and Inland Areas.*

In the current period of transition in regional structures (from the former administrative area structure to the system of economic regions to be announced during the Second Five Year Plan), the Chinese Communists have released considerable data on the existing and planned future distribution of economic activities between the coastal and inland areas of China. Whether to satisfy the requirements of military security or of

* For a definition of the coastal and inland areas of Communist China, see p. 3, above.

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locating industry closer to sources of raw materials and fuel, it is deemed necessary to correct the concentration of industry in the 7 provinces and 3 special municipalities situated along the coast, especially in the province of Liaoning and the cities of Shanghai and Tientsin. For example, coastal industry accounted for the following percentages of major heavy and light industrial production in 1952: machine building, 80 percent; steel, 86 percent; coal, 48 percent; sulfuric acid, 99 percent; cotton cloth, 88 percent; paper, 70 percent; flour, 64 percent; and salt, 77 percent. 75/

It was within this frame of reference that the following aims were incorporated in the First Five Year Plan: (1) To locate in the interior more than two-thirds of all major industrial construction projects to be initiated in the Plan period; 76/ (2) to allocate more than 60 percent of electric power generating capacity to be added during the Plan period to inland provinces; 77/ and (3) to increase the output share of the machine building industry located in the interior from 20 percent of the national total in 1952 to 62 percent on completion of the new enterprises scheduled to start construction during the period of the First Five Year Plan. 78/ In terms of actual investment in capital construction during the first 3 years of the First Five Year Plan, only 45 percent was allocated to the coastal area, with an even smaller proportion (26 percent) of investment in new capital construction devoted to the coastal provinces. 79/ It should be borne in mind, however, that by far the largest part of investment in the interior to date has been directed toward existing industrial bases in the inland provinces of Northeast China (Region I) and North China (Region III) rather than to the construction of new industrial bases in the backward areas of western China. Thus in the 4-year period from 1952 through 1955, the Inner Mongolian Autonomous Region (Region II), the Sinkiang Uighur Autonomous Region (Region IX), and Tibet (Region X) received less than 5 percent of total capital construction investment, 80/ or little more than the amount received by the city of Harbin in the inland province of Heilungkiang in Northeast China. 81/

In terms of actual production, there has been a noticeable shift in the respective shares of the coastal and inland areas in gross national industrial production within a brief period of time. Whereas the coastal provinces accounted for about 77 percent of the industrial output of Communist China in 1949 82/ and 73 percent in 1952, 83/ the corresponding figure for 1955 had dropped to 68 percent. 84/ Also, as a result of a

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conscious policy prohibiting new construction and restricting industrial output, Shanghai's share of national industrial production fell from over 23 percent in 1952 to about 19 percent in 1955.*

There is evidence, however, that this trend in the distribution of industrial production, if not new construction, has been brought to a halt. Vice-Premier Li Fu-ch'un admitted to the Eighth Party Congress of the Chinese Communist Party in 1956 that the State Planning Commission had failed to pay adequate attention "to the full, rational utilization of coastal industry." ^{85/} In 1955, 64 percent of the industrial fixed assets of China, many of which were operating at less than 50 percent of capacity, were still located in the coastal provinces. In comparison with the inland area, labor productivity in the coastal area in 1955 was more than 50 percent higher and the number of engineering and technical personnel 44 percent greater. ^{86/} Thus in a period of increasing financial stringency and of increased demand for consumer goods, Chinese Communist economic planners are apparently gaining a greater appreciation of the value of existing industrial installations along the coast of China.

VIII. Trends in Geographical Distribution of Economic Activity Through 1962.

A. Trends in Regional Planning.

In general, the proposals for China's Second Five Year Plan and subsequent commentaries have expressed the same theory of regional development as that revealed in the First Five Year Plan. Distribution of industrial construction is to be governed by the same considerations of locating industry close to raw materials and consumption areas, enhancing national security, and raising living standards in backward areas. There has been some change, however, in the methods and tempo of implementing these general principles, with new emphasis placed on a fuller utilization of existing industrial bases in coastal areas as a necessary corollary to large-scale construction in the interior. Moreover, the Second Five Year Plan proposals discuss industrial construction plans within a new framework of 10 geographical regions which parallels the structure of economic regions adopted in this report.

The Second Five Year Plan proposals contain the following provisions regarding the geographical distribution of industrial construction: (1) continued construction of industrial bases, centering around

* See Appendix B.

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the iron and steel industry, in Northeast China (Region I), the Inner Mongolian Autonomous Region (Region II), and Central China (Region V); (2) initiation of construction of new industrial bases, centering around the iron and steel industry and hydroelectric stations in Southwest China (Region VII), Northwest China (Region VIII), and the area around the San-men Gorge (located at the junction of Regions III, V, and VIII); (3) continued construction of the petroleum and nonferrous metal industries in the Sinkiang Uighur Autonomous Region (Region IX); (4) active development of existing industrial bases in East China (Region IV); (5) adequate development of industry in the regions of North China (Region III) and South China (Region VI); and (6) preparatory work for the development of industry in Tibet (Region X). 87/

B. Trends in the Development of Coastal and Inland Areas.

Continuing the trend unfolding during the First Five Year Plan period, an increasingly greater proportion of capital investment will flow into inland China during the Second Five Year Plan. This will result in part from the accelerated construction of the new iron and steel bases at Wu-han and Pao-t'ou and the initiation of large-scale industrial construction in Southwest China and the Sinkiang Uighur Autonomous Region.

On the other hand, as indicated in VII, above, the Chinese Communists decided in 1956 to place greater emphasis on the development of existing industrial bases in the coastal area. The example of Shanghai demonstrates how this new emphasis on coastal industry will continue during the Second Five Year Plan. In keeping with the characterization of this city as the prime example of excessive concentration of industry in pre-Communist China, the rate of increase scheduled for Shanghai's industry during the First Five Year Plan was less than 70 percent,* compared with a national rate in excess of 90 percent. During the Second Five Year Plan, however, the rate of development of Shanghai's industry will equal the 100-percent rate of increase planned for all of China. Of greater significance is the fact that Shanghai's heavy industrial production will also increase at the same tempo as that for China as a whole, achieving a rate of increase of 160 percent by 1962. 88/ With the aid of new investments by the state, Shanghai is now destined to become a heavy industrial base specializing in the production of small-scale rolled steel, medium machinery, and shipbuilding. 89/

* See Appendix B.

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C. Trends in Regional Development.

Whereas the coastal and inland areas of Communist China are aligned essentially along longitudinal lines from east to west, the economic regions of China reflect the latitudinal relationship of China's plains, mountains, and rivers. Four of China's economic regions (Northeast China, North China, East China, and South China) are represented in the coastal area, and for this reason there can be no correlation between trends estimated within these different areal systems. The discussion which follows is based upon projections of 1952-57 trends in regional production, taking into account data announced by the Chinese Communists on expansion of production capacity in specific areas during the Second Five Year Plan.

1. Agriculture.

The distribution of the agricultural output of Communist China is expected to maintain the same relative stability during the period of the Second Five Year Plan that it displayed during the First Five Year Plan (see Table 8*). Central China and South China will probably continue to augment their share of national production, since the primary method of increasing output during the Second Five Year Plan period is to raise yields in existing agricultural centers through such means as application of fertilizer, expansion of irrigation, and double cropping. 90/ New lands opened to cultivation by 1962 will not add more than 5 percent to the existing area, 91/ and more than half of this reclaimed land will be developed in the northern part of Heilungkiang Province. 92/ Despite this concentration of activity in Northeast China, this region should not increase its relative output, because of the presence within its borders of Liaoning Province, where the concentration of population and industry precludes significant expansion.

2. Heavy Industry.

The trend in the regional distribution of heavy industry developed during the First Five Year Plan should continue well into the Second Five Year Plan (see Table 9*). Specifically, Northeast

* See Appendix A.

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China is expected to increase its share of total output until it reaches a leveling-off point in 1961 or 1962. By that time, the new iron and steel combines in the Inner Mongolian Autonomous Region and Central China and the reconstructed iron and steel combine in Southwest China will begin production and the large-scale hydroelectric power station at the San-men Gorge will be nearing completion. By 1961 or 1962 also, new centers of heavy industry, long in the planning and discussion stage, will be constructed in the inland cities of Pao-t'ou (iron and steel) in the Inner Mongolian Autonomous Region; T'ai-yuan (steel, heavy machinery, and chemicals) in North China; Wu-han (iron and steel, motor vehicles, machine tools and shipbuilding) and Lo-yang (tractors and mining equipment) in Central China; Chungking (iron and steel) and Ch'eng-tu (machine tools) in Southwest China; Lan-chou (petroleum refining and petroleum drilling equipment) in Northwest China; and Urumchi (iron and steel and nonferrous metals) in the Sinkiang Uighur Autonomous Region. In terms of key heavy industrial products, Northeast China will still possess about 40 percent of the nation's electric power generating capacity in 1962, the same as in 1957, but will account for only 50 percent of crude steel production in 1962 as compared with 70 percent at the close of the First Five Year Plan.

3. Light Industry.

The trend since 1952 in the regional distribution of light industry should continue throughout the entire period of the Second Five Year Plan. Although scarcity of data makes this trend largely a reflection of the distribution of cotton-spindle units added during the First Five Year Plan period, cotton textiles account for about 40 percent of total light industrial output 93/ and may be considered representative of this industrial sector. As indicated by Table 10,* the marked shift away from East China in light industry production is the result of the construction of great new textile centers in the cotton-producing areas of inland China, specifically in Peiping and Shih-chia-chuang in North China, in Cheng-chou in Central China, and in Sian in Northwest China. Projecting this trend, East China's share of light industry will continue to diminish throughout the Second Five Year Plan period.

* See Appendix A.

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4. Transportation.

Railroads occupy a dominant position in the modern transportation system of Communist China, accounting for more than 80 percent of all freight (measured in ton-kilometers) carried by modern means of transport. ^{94/} Efforts to rehabilitate and expand the approximately 14,000 miles of railroad existing in 1949 have been guided by both strategic and economic considerations (see Figure 7*).

New line construction has been directed toward the creation of a national rail network connecting all of the regions and provinces of Communist China, toward the construction of additional rail links with the USSR, toward increasing Chinese Communist logistic capabilities in the Taiwan Strait area, and toward making available to the national economy the specialized raw materials of petroleum and nonferrous metals located in the regions of Southwest China, Northwest China, and the Sinkiang Uighur Autonomous Region. In the period from 1950 through 1957, approximately 4,000 miles of new lines will have been added to the rail net, with rail access to Yu-men (China's largest oil producer) in Kansu Province, completion of the Trans-Mongolian line to the USSR, and the linking of the regions of Northwest China and Southwest China by means of the Pao-ch'i -- Ch'eng-tu railroad representing major achievements. The appearance in 1956 of traffic congestion in the existing industrial areas, however, prompted a slackening of the pace of new line construction in 1957, with greater emphasis to be placed on improving the freight-carrying capacity of the older lines. ^{95/} This development, which parallels the trend toward greater utilization of existing industrial bases in the coastal area, will extend into the Second Five Year Plan, when a major program of rehabilitation of existing lines will be undertaken. ^{96/}

At the same time, the proposal to build 5,000 to 5,600 miles of new lines during the period of the Second Five Year Plan indicates that preponderant emphasis will still be placed on new line construction. ^{97/} By 1962 the Chinese Communists will have incorporated all of China's provinces (with the possible exception of Tibet) within the rail network, will have extended branch lines to the rich oil deposits in the Tsaidam and Karamai (Dzungaria) basins, and will have completed the Trans-Sinkiang line as a fourth link with the USSR. By that time

* Following p. 20, above.

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also, Communist China plans to finish construction of a north-south trunk system about 600 miles inland, extending from Outer Mongolia to the Indochina border via Pao-t'ou, Lan-chou, Ch'eng-tu, and K'un-ming. This new railroad axis will come into being at approximately the same time that work is nearing completion on the new inland industrial bases of China centered about the large iron and steel combines at Pao-t'ou and Wu-han.

D. Trends in Concentration of Industry.

An attempt to measure industrial concentration should take into account the following criteria: (1) The extent of spatial separation of production and consumption of a commodity or series of commodities; (2) the extent of spatial separation of productive capacity for a single commodity; and (3) the extent of spatial separation of productive activity as a complex. ^{98/} In the discussion which follows, the latter two criteria will be employed to estimate the degree of concentration of heavy industry in Communist China, as this sector provides the best index for judging the capability and/or vulnerability of a national or regional economy.

Within the context of the regional structure, there will be a noticeable increase in concentration of heavy industry during the First Five Year Plan period. This will result from the priority development of the existing base of heavy industry in Northeast China. With nearly half of the key industrial construction projects receiving Soviet aid (see Figure 8*) located within its borders, this region will increase its share, in terms of value added, of the heavy industrial output of China from 48 percent in 1952 to 52 percent in 1957. This increase will result primarily from the expansion of ferrous metals, machine building, and electric power production at a rate far above the national average. For example, more than 80 percent of the total investment in China's iron and steel industry was allocated to Northeast China during 1953-55. ^{99/}

Descending below the regional level, the First Five Year Plan provides for a heavier concentration within the leading industrial complex of Communist China, located within a radius of 45 miles in central

* Inside back cover.

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Liaoning Province (Region I) and bounded by the cities of Mukden, Fu-shun, Pen-ch'i, and An-shan. Nearly 20 percent of the Soviet-aid projects are concentrated in this small area, which accounts for all of China's production of aluminum, more than 65 percent of its iron and steel, 60 percent of its refined petroleum, 50 percent of its iron ore, 25 percent of its machine building, and a substantial proportion of its coal.

Descending still further to the municipal level, the degree of concentration of heavy industry in individual cities will also increase during the First Five Year Plan period, specifically in the cities of An-shan, Mukden, and Shanghai. Large investments under the long-term Soviet-aid program in the ferrous metallurgy and machine-building industries will account for the heavier concentration of industrial output in An-shan and Mukden. The further development of Shanghai into a base of heavy industry, to the point where it will account for nearly 10 percent of the heavy industrial output of Communist China in 1956,* has been of more recent origin. Although a few state-owned plants have been expanded gradually since 1950, it was not until 1956 that the decision was made to accelerate the development of Shanghai's heavy industry. 100/ Quick returns in expanded output are anticipated from relatively small investments in the amalgamation, renovation, and expansion of Shanghai's numerous small-scale plants recently brought under state control in the form of public-private jointly operated enterprises.

This trend toward greater concentration of heavy industry is expected to persist until the latter part of the Second Five Year Plan, when new inland industrial bases centered about large iron and steel combines will come into being. Not until then will Chinese Communist economic planners achieve visible results in their widely publicized endeavor to effect a rational, balanced distribution of industry throughout the territory of China.

* See Appendix B.

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APPENDIX A

STATISTICAL TABLES

Table 7

Population of Communist China, by Region a/
1952, 1954, and 1957

Region	Year					
	1952		1954		1957	
	Million	Percent	Million	Percent	Million	Percent
I	43.2	7.5	44.1	7.5	45.7	7.5
II	6.9	1.2	7.0	1.2	7.3	1.2
III	149.8	26.0	153.1	26.0	158.7	26.0
IV	99.7	17.3	101.9	17.3	105.6	17.3
V	77.0	13.4	78.7	13.4	81.6	13.4
VI	66.8	11.6	68.3	11.6	70.8	11.6
VII	97.2	16.9	99.4	16.9	103.0	16.9
VIII	30.2	5.2	30.9	5.2	32.0	5.2
IX	4.8	0.8	4.9	0.8	5.1	0.8
Total <u>b/</u>	<u>577.0</u>	<u>100</u>	<u>589.6</u>	<u>100</u>	<u>611.1</u>	<u>100</u>

a. For methodology, see Appendix B.

b. Total includes the 1.3-million population of Tibet (Region X). This figure is 0.2 percent of the total population of Communist China.

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Table 8

Total Farm Value of Grain and Cotton Production in Communist China, by Region a/
1952, 1954, and 1957

Region	Grain						Cotton						Regional Total					
	1952		1954		1957		1952		1954		1957		1952		1954		1957	
	Million Yuan	Percent	Million Yuan	Percent	Million Yuan	Percent	Million Yuan	Percent	Million Yuan	Percent	Million Yuan	Percent	Million Yuan	Percent	Million Yuan	Percent	Million Yuan	Percent
I	2,558	13.0	2,555	13.2	2,701	11.6	72	7.1	34	3.8	47	3.7	2,630	12.7	2,589	12.8	2,748	11.2
II	354	1.8	406	2.1	489	2.1	0	0	0	0	0	0	354	1.7	406	2.0	489	2.0
III	4,328	22.0	4,103	21.2	5,147	22.1	496	49.2	497	55.9	708	55.9	4,824	23.3	4,600	22.7	5,855	23.8
IV	3,069	15.6	2,981	15.4	3,540	15.2	197	19.5	119	13.4	216	17.1	3,266	15.8	3,100	15.3	3,756	15.3
V	2,814	14.3	2,458	12.7	3,423	14.7	139	13.8	121	13.6	132	10.4	2,953	14.3	2,579	12.7	3,555	14.5
VI	2,243	11.4	2,381	12.3	2,725	11.7	0	0	0	0	0	0	2,243	10.8	2,381	11.8	2,725	11.1
VII	3,207	16.3	3,276	16.9	3,680	15.8	34	3.4	34	3.8	49	3.9	3,241	15.7	3,305	16.3	3,729	15.2
VIII	905	4.6	987	5.1	1,327	5.7	60	5.9	72	8.1	75	5.9	965	4.7	1,059	5.2	1,402	5.7
IX	197	1.0	213	1.1	256	1.1	11	1.1	12	1.3	39	3.1	208	1.0	225	1.1	295	1.2
Total	19,675	100	19,355	100	23,288	100	1,010	100	890	100	1,265	100	20,685	100	20,245	100	24,555	100

a. For methodology, see Appendix B.

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Table 9
Distribution of Major Heavy Industrial Production in Communist China, by Region a/
1952, 1954, and 1957

Heavy Industry	Value Added, by Region																								Total Value Added							
	I			II			III			IV			V			VI			VII			VIII			IX			1952	1954	1957		
	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957					
Iron and steel	17.0	24.0	49.3	0	0	0	5.5	9.0	24.8	0.5	0.5	1.7	2.2	4.9	16.5	1.3	1.9	5.0	0.5	0.7	1.7	0	0	0	0	1.5	1.6	2.4	27	41	99	
Pig iron	45.0	84.4	143.1	0	0	0	30.1	33.9	33.1	1.0	8.4	8.1	1.5	1.5	1.4	0	0	8.9	10.2	9.9	0	0	0	0	0	0	0	88	140	198		
Finished steel	663.8	1,107.8	2,013.5	0	0	0	118.7	258.2	405.0	73.1	75.2	127.3	52.8	52.3	75.2	2.0	1.6	2.9	99.5	132.4	260.4	0	0	0	5.1	6.5	8.7	1,015	1,634	2,893		
Tungsten	0	0	0	0	0	0	0	0	0	0	0	0	20.8	24.8	31.2	4.5	5.4	6.8	0.7	0.8	1.0	0	0	0	0	0	0	26	31	39		
Subtotal	725.8	1,216.2	2,205.9	0	0	0	154.3	301.1	462.9	74.6	84.1	137.1	77.3	81.5	124.1	7.8	8.9	14.7	102.6	144.1	271.0	0	0	0	6.6	8.1	11.1	1,156	1,846	3,229		
Percentage	62.8	65.9	68.3	0	0	0	13.3	16.3	14.3	6.5	4.6	4.2	6.7	4.5	3.8	0.7	0.5	0.5	9.5	7.8	8.5	0	0	0	0.6	0.4	0.3	100	100	100		
Nonferrous metals	33.3	53.5	50.3	0	0	0	0	0	0	0	1.7	1.5	16.4	24.2	25.4	10.3	15.6	17.3	40.0	62.0	70.5	0	0	0	0	0	0	100	157	165		
Percentage	33.3	34.1	30.5	0	0	0	0	0	0	0	1.1	0.9	16.4	15.4	15.4	10.3	9.9	10.5	40.0	39.5	42.7	0	0	0	0	0	0	100	100	100		
Machinery	257.1	478.0	606.5	1.2	2.3	2.9	79.1	147.0	186.6	205.8	382.6	485.5	31.5	58.6	74.4	18.6	34.5	43.8	17.3	32.2	40.8	6.2	11.5	14.6	1.2	2.3	2.9	618	1,149	1,458		
Percentage	41.6	41.6	41.6	0.2	0.2	0.2	12.8	12.8	12.8	33.3	33.3	33.3	5.1	5.1	5.1	3.0	3.0	3.0	2.8	2.8	2.8	1.0	1.0	1.0	0.2	0.2	0.2	100	100	100		
Armaments	70.3	44.5	33.0	0	0	0	23.2	14.2	10.5	4.4	2.9	2.2	18.3	12.4	9.2	1.5	1.1	0.8	29.4	20.0	14.8	2.9	1.9	1.5	0	0	0	150	97	72		
Percentage	46.9	45.9	45.8	0	0	0	15.5	14.6	14.6	2.9	3.0	3.1	12.2	12.8	12.8	1.0	1.1	1.1	19.6	20.6	20.6	1.9	2.0	2.1	0	0	0	100	100	100		
Coal	306.5	402.0	569.4	10.2	9.9	14.0	353.7	448.5	632.3	39.3	49.5	71.3	18.9	20.8	30.8	3.9	4.0	5.6	23.6	24.7	25.2	23.6	23.7	39.2	6.3	6.9	11.2	786	990	1,399		
Percentage	39.0	40.6	40.7	1.3	1.0	1.0	45.0	45.3	45.2	5.0	5.0	5.1	2.4	2.1	2.2	0.5	0.4	0.4	3.0	2.5	1.8	3.0	2.4	2.8	0.8	0.7	0.8	100	100	100		
Electric power	272.6	384.9	700.6	10.6	11.6	23.3	166.8	193.8	378.6	148.4	165.2	273.5	33.4	42.8	73.4	40.5	40.2	75.1	27.8	33.9	83.4	8.5	17.0	48.4	1.4	3.6	11.7	710	893	1,668		
Percentage	38.4	43.1	42.0	1.5	1.3	1.4	23.5	21.7	22.7	20.9	18.5	16.4	4.7	4.8	4.4	5.7	4.5	4.5	3.9	3.8	5.0	1.2	1.9	2.9	0.2	0.4	0.7	100	100	100		
Chemicals	47.4	72.4	117.7	0	0	0	12.1	26.3	36.9	5.9	11.8	16.6	0.5	0.9	1.0	3.8	8.5	10.4	6.3	7.1	10.4	0	0	0	0	0	0	76	127	193		
Percentage	62.4	57.0	61.0	0	0	0	15.9	20.7	19.1	7.8	9.3	8.6	0.7	0.7	0.5	5.0	6.7	5.4	8.2	5.6	5.4	0	0	0	0	0	0	100	100	100		
Cement	35.6	65.6	76.5	0	0	0	24.6	38.7	55.8	16.1	21.9	28.8	13.6	18.2	18.9	6.4	9.2	8.5	0.8	3.0	4.7	0.1	0.1	6.7	0.8	1.3	3.1	98	158	203		
Percentage	36.3	41.5	37.7	0	0	0	25.1	24.5	27.5	16.4	13.9	14.2	13.9	11.5	9.3	6.6	5.8	4.2	0.8	1.9	2.3	0.1	0.1	3.3	0.8	0.8	1.5	100	100	100		
Petroleum	126.7	186.7	276.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73.6	132.4	152.6	4.7	10.9	64.5	205	330	530
Percentage	61.8	56.6	52.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.9	40.1	28.8	2.3	3.3	12.2	100	100	100		
Total	1,875.3	2,904.8	4,636.4	22.0	21.8	40.2	814.8	1,169.6	1,763.6	494.5	712.7	1,032.9	209.9	261.4	377.4	22.8	122.0	176.2	257.8	327.0	322.8	114.9	186.6	261.0	21.0	33.1	104.5	1,899	3,177	8,917		
Percentage of national total	48.1	50.5	52.0	0.6	0.4	0.5	20.9	20.4	19.8	12.7	12.5	11.8	5.4	4.5	4.0	2.4	2.1	2.0	6.5	5.7	5.9	2.9	3.2	2.9	0.5	0.6	1.2	100	100	100		

a. For methodology, see Appendix B.

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Table 10

Distribution of Selected Light Industrial Production in Communist China, by Region a/
1952, 1954, and 1957

Light Industry	Value Added, by Region																					Total Value Added								
	I			II			III			IV			V			VI			VII			VIII			IX			1952	1954	1957
	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957			
Cotton textiles (location of spindle units)	101.2	125.4	126.4	0	0	0	252.3	350.5	476.2	678.3	746.4	711.0	67.8	120.9	114.9	7.1	9.1	8.2	57.1	63.5	65.7	22.6	92.2	133.0	3.6	3.0	6.6	1,190	1,511	1,642
Percentage	8.5	8.3	7.7	0	0	0	21.2	23.2	29.0	57.0	49.4	43.3	5.7	8.0	7.0	0.6	0.6	0.5	4.8	4.2	4.0	1.9	6.1	8.1	0.3	0.2	0.4	100	100	100
Salt	24.1	28.7	36.6	0	0	0	46.2	54.9	70.1	17.8	21.1	26.9	0.3	0.4	0.5	10.5	12.4	15.8	11.8	14.1	18.0	3.7	4.4	5.6	1.6	2.0	2.5	116	138	176
Percentage	20.8	20.8	20.8	0	0	0	39.8	39.8	39.8	15.3	15.3	15.3	0.3	0.3	0.3	9.0	9.0	9.0	10.2	10.2	10.2	3.2	3.2	3.2	1.4	1.4	1.4	100	100	100
Paper	129.5	192.9	228.0	0	0	0	27.5	41.0	48.4	56.6	84.3	99.6	0	0	0	11.2	16.7	19.7	7.0	10.4	12.3	1.2	1.7	2.0	0	0	0	233	347	410
Percentage	55.6	55.6	55.6	0	0	0	11.8	11.8	11.8	24.3	24.3	24.3	0	0	0	4.8	4.8	4.8	3.0	3.0	3.0	0.5	0.5	0.5	0	0	0	100	100	100
Cigarettes	19.6	28.1	34.7	2.2	3.1	3.9	54.5	78.0	96.5	82.8	118.6	146.7	32.7	46.8	57.9	13.1	18.7	23.1	10.9	15.6	19.3	2.2	3.1	3.9	0	0	0	218	312	386
Percentage	9.0	9.0	9.0	1.0	1.0	1.0	25.0	25.0	25.0	38.0	38.0	38.0	15.0	15.0	15.0	6.0	6.0	6.0	5.0	5.0	5.0	1.0	1.0	1.0	0	0	0	100	100	100
Flour	4.8	5.9	7.5	0.4	0.5	0.6	20.4	25.5	32.0	31.6	39.4	49.5	4.6	5.8	7.2	0.9	1.1	1.4	1.9	2.3	2.9	4.1	5.2	6.5	0.3	0.3	0.4	69	86	108
Percentage	6.9	6.9	6.9	0.6	0.6	0.6	29.6	29.7	29.6	45.8	45.8	45.8	6.7	6.7	6.7	1.3	1.3	1.3	2.7	2.7	2.7	6.0	6.0	6.0	0.4	0.3	0.4	100	100	100
Vegetable oils	11.1	15.2	20.2	0	0	0	6.8	9.3	12.4	9.4	12.7	16.9	2.9	3.9	5.2	0.7	1.0	1.3	3.6	4.9	6.5	1.1	1.5	1.9	0.4	0.5	0.6	36	49	65
Percentage	30.8	31.0	31.0	0	0	0	18.8	19.0	19.1	26.1	25.9	26.0	8.1	8.0	8.0	1.9	2.0	2.0	10.0	10.0	10.0	3.1	3.1	2.9	1.1	1.0	0.9	100	100	100
Rice and grain processing	32.6	39.2	41.0	1.6	2.0	2.1	40.3	48.4	50.6	41.6	50.0	52.3	12.1	14.5	15.2	14.5	17.4	18.2	13.5	16.2	17.0	5.7	6.9	7.2	1.1	1.4	1.4	163	196	205
Percentage	20.0	20.0	20.0	1.0	1.0	1.0	24.7	24.7	24.7	25.5	25.5	25.5	7.4	7.4	7.4	8.9	8.9	8.9	8.3	8.3	8.3	3.5	3.5	3.5	0.7	0.7	0.7	100	100	100
Rubber goods	23.8	43.0	76.8	0	0	0	92.0	124.6	153.6	48.2	57.4	61.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	164	225	292
Percentage	14.5	19.1	26.3	0	0	0	56.1	55.4	52.6	29.4	25.5	21.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100
Total	346.7	478.4	571.2	4.2	5.6	6.6	540.0	732.2	932.8	966.3	1,129.2	1,164.5	120.4	128.3	200.9	28.0	76.4	97.7	102.8	127.0	141.7	40.6	115.0	160.1	7.0	7.2	11.2	2,129	2,864	3,284
Percentage of national total	15.8	16.7	17.4	0.2	0.2	0.2	24.7	25.6	28.6	44.1	39.4	35.5	5.5	6.7	6.1	2.6	2.7	2.7	4.8	4.4	4.3	1.9	4.0	4.9	0.3	0.3	0.4	100	100	100

a. For methodology, see Appendix B.

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Table 11
Distribution of Services in Communist China, by Region a/
1952, 1954, and 1957

Services	Value Added, by Region																								Total Value Added					
	I			II			III			IV			V			VI			VII			VIII			IX			1952	1954	1957
	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957	1952	1954	1957			
Modern transportation	485	779	1,042	5	8	16	232	375	520	68	107	159	53	83	136	58	91	149	45	71	129	47	75	117	7	11	32	1,000	1,600	2,300
Percentage	48.5	48.7	45.3	0.5	0.5	0.7	23.2	23.4	22.6	6.8	6.7	6.9	5.3	5.2	5.9	5.8	5.7	6.5	4.5	4.4	5.6	4.7	4.7	5.1	0.7	0.7	1.4	100	100	100
Native transportation	152	179	168	20	28	30	280	318	357	190	214	230	172	179	218	130	165	166	188	228	228	56	73	85	12	16	18	1,200	1,400	1,500
Percentage	12.7	12.8	11.2	1.7	2.0	2.0	23.3	22.7	23.8	15.8	15.3	15.3	14.3	12.8	14.5	10.8	11.8	11.1	15.7	16.3	15.2	4.7	5.2	5.7	1.0	1.1	1.2	100	100	100
Communications	40	60	80	2	3	4	54	81	108	58	87	116	12	18	24	20	30	40	6	9	12	6	9	12	2	3	4	200	300	400
Percentage	20.0	20.0	20.0	1.0	1.0	1.0	27.0	27.0	27.0	29.0	29.0	29.0	6.0	6.0	6.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0	1.0	1.0	1.0	100	100	100
Construction	1,162	1,848	2,587	46	74	103	431	686	961	93	147	206	198	315	441	22	35	49	79	126	176	123	196	274	46	73	103	2,200	3,500	4,900
Percentage	52.8	52.8	52.8	2.1	2.1	2.1	19.6	19.6	19.6	4.2	4.2	4.2	9.0	9.0	9.0	1.0	1.0	1.0	3.6	3.6	3.6	5.6	5.6	5.6	2.1	2.1	2.1	100	100	100
Trade and business services	1,336	1,776	2,359	117	178	229	2,008	2,620	3,475	1,688	2,198	2,846	949	1,154	1,630	840	1,165	1,430	1,042	1,421	1,730	353	488	687	67	100	114	8,400	11,100	14,300
Percentage	15.9	16.0	15.1	1.4	1.6	1.6	23.9	23.6	24.3	20.1	19.8	19.9	11.3	10.4	11.4	10.0	10.5	10.0	12.4	12.8	12.1	4.2	4.4	4.8	0.8	0.9	0.8	100	100	100
Government and military services	379	429	454	33	36	38	1,213	1,366	1,622	539	583	641	327	344	388	284	298	336	362	371	427	141	150	168	22	23	26	3,300	3,600	4,100
Percentage	11.5	11.9	11.1	1.0	1.0	0.9	36.8	38.0	39.6	16.3	16.2	15.6	9.9	9.6	9.5	8.6	8.3	8.2	11.0	10.3	10.4	4.3	4.2	4.1	0.7	0.6	0.6	100	100	100
Rent and miscellaneous services	1,380	1,660	1,770	110	130	150	1,980	2,300	2,580	1,740	2,080	2,290	850	900	1,070	800	960	1,030	940	1,090	1,160	330	400	460	70	80	90	8,200	9,600	10,600
Percentage	16.8	17.3	16.7	1.3	1.4	1.4	24.1	24.0	24.3	21.2	21.7	21.6	10.4	9.4	10.1	9.8	10.0	9.7	11.5	11.4	10.9	4.0	4.2	4.3	0.9	0.8	0.8	100	100	100
Total	4,924	6,731	8,260	333	357	370	6,198	7,756	9,623	4,376	5,416	6,488	2,961	2,993	3,907	2,134	2,714	3,200	2,662	3,316	3,862	1,026	1,391	1,803	226	306	387	24,500	31,100	38,100
Percentage of national total	20.1	21.6	21.7	1.4	1.5	1.5	25.3	24.9	25.3	17.9	17.4	17.0	10.5	9.6	10.3	8.8	8.8	8.4	10.9	10.7	10.1	4.3	4.5	4.7	0.9	1.0	1.0	100	100	100

a. For methodology, see Appendix B.

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APPENDIX B

METHODOLOGYI. General.

The estimates of gross regional product presented in this report are based on estimates of GNP and its components for all of Communist China. As such, they represent net measures of the total volume of goods and services produced within each region -- that is, the gross value of the output of the regional economies less purchases of materials, fuels, and power used in the production process. The regional data consist essentially of estimates for the years 1952, 1954, and 1957 of the total physical output of a long list of commodities, together with the percentage of the total produced in each region. The regional shares were applied to the national estimates of value added in the production of each commodity, and the sum of these values was considered to be a representative sample of the regional output of the major industrial sectors producing physical goods. These samples were then inflated to full coverage by applying them to the national value-added estimates for the respective major industrial sectors, the results being combined with estimates of the value added by the services sector to yield a measure of total regional production.

In general, the measurement of gross regional product involves complexities above and beyond the problems encountered in measuring GNP. Much of the additional difficulty arises from the fact that regional data are always more scarce and less reliable than corresponding figures for the whole country. The data on regional commodity production, which provide the foundation for the estimates of gross regional product, are based largely on plant studies or plan analysis, with a sizable margin of error in some cases. In other cases, it was necessary to resort to prewar data in order to obtain regional or provincial shares of production, assuming there had been no significant change in the intervening years in the distribution of output. The regional distribution of a number of the service industries is based on the assumption of certain functional relationships. For example, it is assumed that the regional volume of native transportation is a function of agricultural production; consequently, value added in the native transport sector is distributed according to the regional index of agricultural output. Finally, the accuracy of the findings of this report is further limited by the inadequacy of certain of the samples employed in developing gross regional

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production. For example, the omission of animal husbandry from the list of regional indicators tends to understate the contributions of the Inner Mongolian Autonomous Region, Northwest China, and the Sinkiang Uighur Autonomous Region. The failure to include such subtropical agricultural products as sugar and fruit has the same effect on South China.

II. Methodology for Tables 1-11.

In Table 1 the distribution of commodity production in 1936 is based on a number of individual industry studies published by the Chinese Nationalist government, by various departments of the US Government, and by private trade associations in pre-Communist China. Regional distribution of output in 1952 and 1957 is based in most cases on studies of individual plants and on plan analysis.

Table 2 was prepared by applying the regional coefficients for the major sectors of the economy (presented in Tables 9-11) to the national value-added estimates for the respective major economic sectors. Manufacturing includes the production of energy, metals and metal products, chemicals, construction materials, food products, manufactured consumer goods, and military end items. Agriculture includes the production of foodstuffs and cotton. Services include transportation, communications, construction, trade, government and military services, and miscellaneous services and rent. The totals for services have been rounded.

Tables 3, 4, and 5 are derived from Table 2.

Table 6 is derived from Tables 2 and 7.

Table 7 consists of midyear estimates for mainland China only and is based on the announced results of the 1953 census, assuming a 1-percent increase in 1953 over 1952 and an annual increase of 1.2 percent for 1954 through 1957. It is assumed that the regional distribution of population remains constant for the years in question.

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Table 9 presents a sample of the regional output of major heavy industrial production and is based for the most part on physical production data derived from plant studies and plan analysis. The regional distribution of the machinery and armaments sectors, however, is based largely on labor force data. Coal production is distributed according to the prewar shares of the various provinces of China.

Of the regional coefficients of light industrial production presented in Table 9, only those for cotton textiles and rubber goods are based on information released by the Chinese Communists. Most of the other sector estimates are based on prewar plant capacity data. The value added by the rice and grain processing sector was distributed on the basis of urban population.

Table 10 is based on provincial crop reports for grain and cotton in the years 1952 and 1954 and on provincial production goals for these crops in 1957.

In Table 11 the regional data on services are less reliable than the physical production data used in distributing the manufacturing and agricultural sectors in Tables 8-10. Modern transportation includes data on railroads (distribution of locomotives), on waterways (distribution of ton-kilometers originating), and public roads (distribution of road kilometrage). The communications sector is distributed on the basis of telephone conversations in the prewar period, and the construction sector according to the regional distribution of major Soviet-aid projects. It was necessary to assume certain functional relationships in order to obtain regional allocations for the remaining sectors. Thus native transport was distributed on the basis of agricultural output; trade and business services, together with rent and miscellaneous services, on the basis of urban population in urban areas and of agricultural output in rural areas; military services on the disposition of Chinese Communist military forces; and the local share of government services on the basis of total population.

III. Estimates of the Industrial Production of Shanghai.

The share of 23 percent of national industrial production in 1952 credited to Shanghai was derived as follows: In that year, Shanghai and Tientsin together accounted for about 30 percent of the industrial

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output of Communist China. 101/ According to a Chinese Communist announcement, Tientsin's industrial production in 1956 amounted to about 3.4 billion yuan, representing an increase of 25 percent over 1955. 102/ The 1955 production figure for Tientsin has been expressed elsewhere as a percentage increase over 1952. 103/ Given Tientsin's output as approximately 7 percent of the national total in 1952, Shanghai's production in that year is equivalent to the differential between this figure and the 30-percent figure given above. Shanghai's total industrial output in 1955 has been announced by the Chinese Communists in the form of a percentage increase over 1952. 104/

Shanghai's share of approximately 10 percent of China's heavy industrial production in 1956 was derived as follows: The value of Shanghai's total industrial production in 1949 was secured first by means of a Chinese Communist index relating it to 1952 production. 105/ Then the value of heavy industrial production in Shanghai in 1949, expressed as a proportion of that city's total industrial production, was related to 1956 heavy industrial output, again using a Chinese Communist index. 106/ This figure was then divided by the estimate of the total heavy industrial production in China in 1956 to secure the 10-percent ratio.

The industrial production target of Shanghai in the First Five Year Plan was estimated as follows: Heavy industrial production in 1956, derived in the preceding paragraph, was to account for 27 percent of Shanghai's planned total industrial output in that year. 107/ Given the value of planned total industrial production for 1956, the Chinese Communists have stated that this figure was equivalent to the original 1957 industrial production target for Shanghai in the First Five Year Plan. 108/

The share of 20 percent of national industrial production attributed to Shanghai in 1956 was estimated as follows: Given the value of planned industrial output for 1956, as derived in the preceding paragraph, the Chinese Communists have announced that actual production would exceed the Plan figure by 10 percent. 109/ Given the actual output total for 1956 and applying this total to the announced total for China as a whole, the resulting share proportion is about 20 percent.

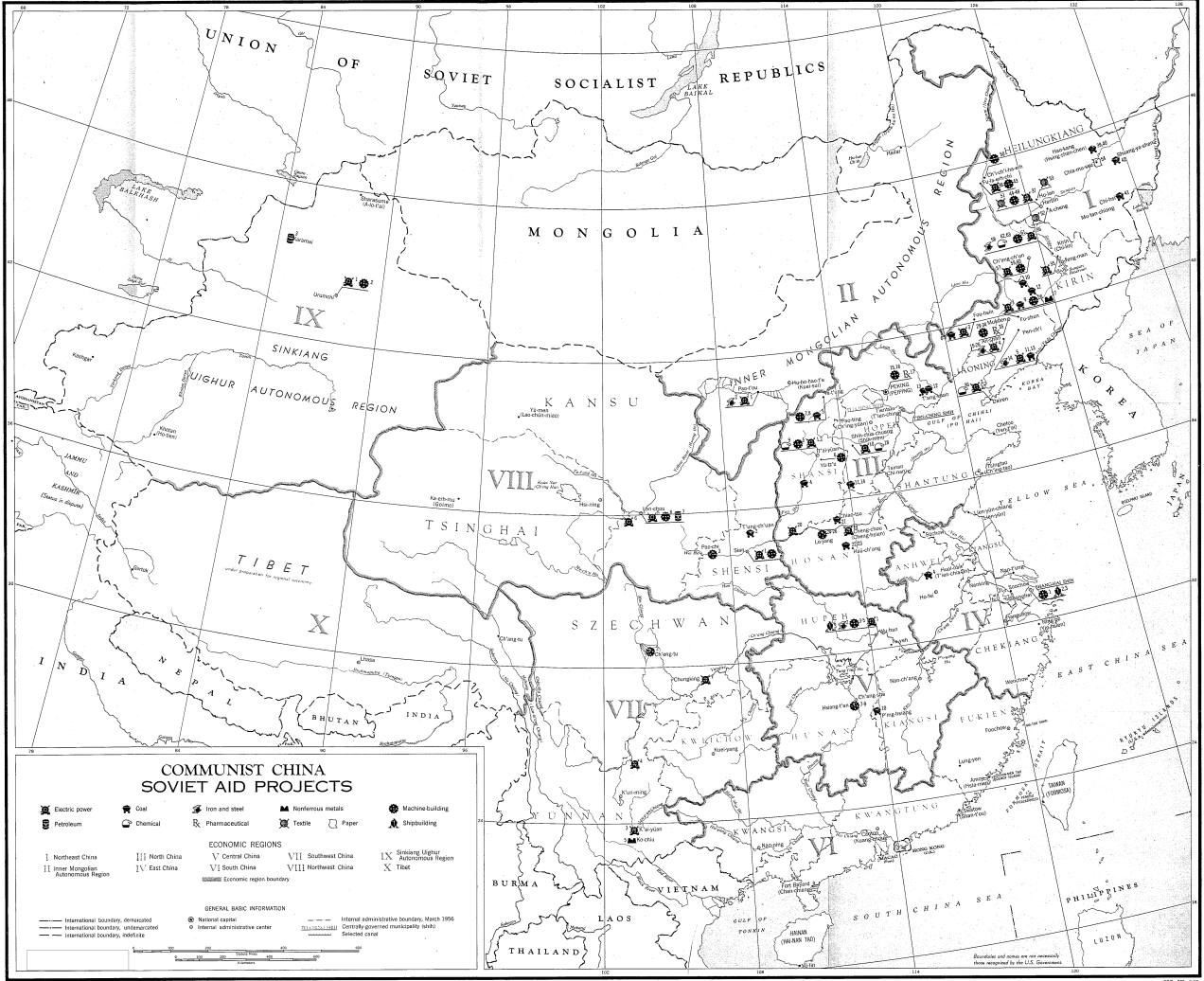
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Figure 8

REGIONAL DISTRIBUTION OF SOVIET AID PROJECTS
(Tentative)



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