CHINA'S ECONOMIC DEVELOPMENT STRATEGIES AND THEIR EFFECTS ON U.S. TRADE

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EXECUTIVE SUMMARY

The purpose of this study is twofold: First, to examine economic development strategies of the People's Republic of China (China) since its founding in 1949, and second, to assess their impact on U.S.-Chinese trade. The emphasis of the study is on China's Sixth Five-Year Plan (1981-85) and its effects on U.S. bilateral trade with China. In addition, the study identifies problems that may prevent China's economy from achieving rapid economic growth.

China's Economic Development Strategies

The Chinese authorities have for some time acknowledged the importance of international trade for China's economic growth. However, China's trade policy has always been intertwined with its foreign policy. For example, international political events--such as the Korean conflict--have hampered development of China's economic relations with other countries. In addition, for many years China emphasized economic self-reliance as necessary in order to avoid political dependence upon other countries. Efforts to improve foreign relations were included among the recent major policy changes made by the Third Plenum of the Eleventh Central Committee of the Chinese Communist Party (CCP) in December 1978. The CCP also called for pragmatic economic reforms that signaled a clear shift away from the Mao Zedong (Mao) ideas emphasizing economic independence and economic programs as means toward political reform. The changes instituted by the Plenum marked a major turning point in economic policy in the People's Republic of China.

With the Third Plenum, China began a series of changes in its domestic and foreign policies, including the adoption of a new constitution that makes foreign investments legal in China. Although the administrative and management systems have changed rapidly, there are two things that have not changed and that probably will not change in the near future. First, China has maintained its independent foreign policy. China has played a prominent role in the Third World. If China were to sign a defense treaty with either the United States or the Soviet Union, then China's importance as a third power might decline. China has also provided economic and technical aid to nonaligned countries and is not expected to give up its leadership role in the Third World.

Second, China has not changed its economic system from communism to capitalism. The Chinese authorities have frequently indicated that the means of production will always be owned by the State or by the people collectively. 1/ Authorities insist that Marxism will continue to be the basis for the economic structure in China, although there has been a visible increase in private retail trade. In the near future, significant expansion of the existing private or capitalist sector of the economy is unlikely.

1/ On June 30, 1984, Deng Xiaoping met a group of Japanese non-governmental figures led by Masayoshi Ito, the former Japanese Foreign Minister. Deng indicated that it is of great importance for China to adhere to Marxism. In addition, Deng said, "practice in the past five years shows that we are on the right track." People's Daily (Renmin Ribao), July 1, 1984, p. 1.

Recent economic advances

Since the Third Plenum, economic development in China has improved steadily. According to Chinese official statistics, gross social product of the People's Republic of China in 1983 was 1,105.2 billion yuan ($559.0 billion), 10 percent higher than it was in 1982. The preliminary estimate of the national income was 467.3 billion yuan ($236.3 billion), up 9 percent over that in 1982. For the same year, gross value of industrial and agricultural production reached 920.9 billion yuan ($465.6 billion). The annual growth rates of these three economic indicators all exceeded the 4-percent planned rate. Since the establishment of the Deng Xiaoping (Deng) administration in 1979, the real growth rate of national income has averaged a respectable 8.7 percent. In addition, China's foreign-exchange holdings increased from $2.15 billion in 1979 to $15.69 billion by the end of the first quarter of 1984. More importantly, the economic advances enhance Chinese confidence in their new economic policies and in Deng's concept of material incentives.

Effects of Mao's development strategies

This study evaluates China's economic development plans and performance and points to some policies that resulted in very serious setbacks to China's economic development. Two of these policies are the Great Leap Forward (1959-61) and the Great Cultural Revolution (1966-76). During the Great Leap Forward, Mao aimed at a high growth rate, stressed development of heavy industry, and overlooked light industry and agriculture. This unbalanced growth strategy contributed to a famine in 1960.

This study uses a simple statistical method to estimate the economic losses of these two movements. It finds that the Great Leap Forward caused China to fall short of its expected output by 30.68 billion yuan ($9.10 billion at 1960 prices) annually. It also finds that the Great Cultural Revolution lowered China's national income by 17.10 billion yuan ($5.07 billion at 1960 prices) annually. These losses not only reduced consumption, but also slowed technological progress by reducing new investment.

Deng Xiaoping's development strategies and reforms

China has had six 5-year plans, but only one of them, the First Five-Year Plan (1953-57), was completely and successfully implemented. Thousands of Soviet advisors and technicians assisted China in formulating and implementing that plan. The Second, Third, Fourth and Fifth Five-Year Plans were abandoned before completion of their implementation. It is quite likely that the Sixth Five-Year Plan (1981-85) will be the first workable plan that was formed and implemented without significant foreign assistance. Several production targets set in the plan were already achieved by the end of 1983.

Deng's strategies have been fully implemented since 1979. His two important strategies are to increase imports of technology and to make wages match productivity, that is, compensate each worker according to his productivity. This, of course, conflicts with Mao's concept of "Large Wok

Rice," or Maoist egalitarianism, which implies an equal compensation for each worker regardless of his actual productivity. Economic results in recent years reveal that Deng's material incentives work better than Mao's spiritual incentives.

The long-term economic development objective

The first long-term development objective of China is to quadruple the gross value of industrial and agricultural production from 710 billion yuan in 1980 to about 2,800 billion yuan in the year 2000. The Sixth Five-Year Plan was finalized in accordance with this long-term objective. Western economists have different views about the possibility of China attaining this objective. Its attainment depends in large measure on the definitions used in China's national income accounting system. Until these definitions are clarified, it is difficult to determine whether the quadrupling objective can be reached.

Another factor affecting the attainment of the long-term objective is the Hong Kong issue. Hong Kong, the world's third largest financial center, is scheduled to return to the People's Republic in 1997, when the 99-year lease expires. Since the founding of the People's Republic, Hong Kong has contributed a great deal to China's economic development. According to Chinese trade statistics, during 1950-82, China earned some $87.3 billion in foreign exchange by trading with Hong Kong. Even during the Korean conflict, Hong Kong provided hard currency and military supplies to China. In the near future, Hong Kong will probably continue to play its important role in China's economy development.

China's Foreign Trade

This study finds that China's economic reforms and its recent open-door policy have had positive effects on its national income as well as on its foreign trade. In 1983, China's gross value of industrial and agricultural production increased by 10.2 percent over that of the previous year, or by more than 2.5 times the planned rate. This study estimates that China's national income will continue to grow at annual rates above 7 percent during 1984-87. Since 1978, China's foreign trade has increased rapidly. Both exports and imports are expected to continue to increase for the next 4 years. Through this trade, China can consume more commodities than it could in a closed economy, and it can also acquire foreign technology, which is badly needed for modernization.

China's major trading partners

Japan has for years been China's largest trade partner and has actively participated in China's economic development programs. Hong Kong is China's second largest trade partner. Under Deng's administration, significant changes in bilateral trade between China and Hong Kong are not expected. The United States is China's third largest trade partner and will probably continue to be so for the next few years.

China's trade with the United States

Since 1978, bilateral trade between China and the United States has quadrupled. China's strategy to develop the infrastructure of the economy during 1979-82 resulted in increases in its imports of transportation equipment, power stations, mining equipment, telecommunications equipment, and other capital goods. China also increased its exports to the United States in order to pay for imports. In particular, China's exports of gasoline and textiles to the United States increased dramatically. The new economic strategy combined with changes in U.S. trade policy toward China caused a 72.4-percent annual increase in China's exports to the United States and a 120.5-percent annual increase in China's imports from the United States. This study estimates that the increases in exports and imports will continue, but at a decreasing rate. Using a simple statistical model, this study forecasts that the United States will have a total trade surplus of $38.3 million in its trade with China during 1984-87. However, the net effects of trade with China on U.S. domestic employment will be unfavorable, because the labor requirements for imports from China will be greater than the labor requirements for U.S. exports to China. The net employment loss during the 4 years will be about 41,150 work-years. This study finds that the effects on both U.S. domestic production and employment are insignificant compared with the aggregate values of these variables.

Issues of U.S.-Chinese trade

There are a number of issues that may affect the level of U.S. trade with China. This study evaluates the importance of three of these issues: the growing competition posed by Chinese imports in the U.S. textile market, China's dual exchange-rate system, and U.S. export controls. The study concludes that China's growing textile exports to the United States will be the most important source of problems for U.S.-Chinese trade relations in the near future.

CHAPTER 1. INTRODUCTION

After a long period of serious economic difficulties, China's leaders acknowledged the impracticality of Mao Zedong's economic ideology and instituted changes in China's economic management system. Mao's ideology was supposed to provide unchangeable guidelines for all workers in the People's Republic of China (China). Two main concepts of his ideology, "speed" and "struggle," were part of the economic development programs that he initiated: the People's Commune Movement (People's Commune), the Great Leap Forward, and the Great Proletarian Cultural Revolution (Cultural Revolution). Although workers struggled to make the programs succeed, these attempts to speed development actually moved the Chinese economy backward rather than forward. The unsuccessful implementation of these development programs attracted a series of criticisms, including those from the Central Committee of the Chinese Communist Party (CCP), 1/ the ruling elite of China. More importantly, the undesirable economic situation provided the Deng Xiaoping faction of the party with the opportunity to carry out its political and economic reforms.

In December 1978, the Third Plenum of the Eleventh CCP Central Committee rejected Mao's thought and entered China into a new era. Participants of the session explicitly repudiated the "two-whatever" policy, under which they were obliged to "resolutely uphold whatever policy decision Chairman Mao made, and unswervingly follow whatever instructions Chairman Mao gave." 2/ The participants also cautiously corrected the "leftist mistakes," and briefly introduced the "eight-character" program. The eight characters refer to the Chinese characters representing four principles: tiao-zheng (adjustment), gai-ge (reforming), zheng-den (reorganizing), and ti-gao (elevation). They are four management principles or guidelines rather than projects or plans.

The repudiation of the two-whatever policy marked the end of the absolute obedience to Mao's instructions. The correction of leftist mistakes meant changing the party leadership from the left to the Deng faction. The

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1/ For example, in its editorial entitled "Haste Makes Waste," People's Daily (Renmin Ribao), June 12, 1980, p. 1, stated that the result of high speed and high quotas was not real progress, but waste and disaster. Chen Yun, a leading economic planner, criticized Mao at the Central Party Work Conference, November-December 1978, by contrasting his earlier revolutionary successes with his later economic failures. See Ming Pao (Bright Daily) Hong Kong, Jan. 15, 1979, p. 1.

Unless stated otherwise, titles of materials published in China are referenced in Chinese.

2/ For a more detailed explanation of the two-whatever policy, see the joint editorial entitled "Study the Documents Well and Grasp the Key Link," of People's Daily, Red Flag (Honggi), and Liberation Daily (Jiefan Ribao), Feb. 7, 1971. Deng Xiaoping repeatedly attacked the policy. One of his criticisms entitled "The Two-Whatever Policy Does Not Accord With Marxism," was published in Selected Works of Deng Xiaoping (1975-82) (Beijing: People's Publishing House, 1983), pp. 35 and 36.

eight-character program specified four major tasks for economic reform. These were important political and economic policy decisions, and they marked a major turning point in the history of the People's Republic. 1/

On June 18, 1979, Premier Hua Guofeng officially announced the eight-character program in his "Report on the Work of the Government" at the Second Session of the Fifth National People's Congress (NPC). Aimed at a sustained, proportionate, high-speed development, the eight-character program called for adjusting the disproportionate growth of the economy, reforming the structure of economic management, reorganizing the existing enterprises, and elevating the levels of production, technology, and management. At the same session, Hua requested the Congress to give him 3 years to make the necessary adjustments to his ambitious 10-year development plan (1976-85). The Congress did not give him 3 years as he requested, and instead, removed him from the premiership in September 1980. Zhao Ziyang, a supporter of Deng's pragmatic economic program, took over the post.

On December 1, 1981, Premier Zhao unveiled his first economic policy in a speech delivered at the Fourth Session of the Fifth National People's Congress. In addition to the eight-character program, he stressed an open-door policy, export expansion, and technology exchange. 2/ He did not mention any long-term development objective. However, on September 2, 1982, Hu Yaobang, the CCP General Secretary, spelled out the long-term economic development objective, which was to quadruple the gross value of industrial and agricultural production from 710 billion yuan in 1980 to about 2,800 billion yuan in the year 2000. 3/ The Sixth Five-Year Plan (1981-85) was put in final form with this long-term objective. 4/ It is the first comprehensive economic and social development plan that the People's Republic has ever published and made freely available to all interested readers.

Purpose of the Study

The primary purpose of this study is to assess China's economic development plans and their effects on U.S.-Chinese trade. More specifically, the study evaluates the economic development strategies and targets set forth

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1/ Beijing Review, Aug. 30, 1982, p. 5. Many China experts in the United States labeled those significant changes as the change of administration or the change of dynasty. The review was originally named Peking Review. Its name was changed to Beijing Review after China changed its romanized spelling system from "Wade-Gibes" to "Pinyin" in 1979. For many years, Chinese and Westerners had used the Wade-Giles system to romanize Chinese proper nouns including names of persons and places. This study uses both systems in order to keep original titles of publications. The periodical has always been published in English and also in other languages.

2/ The full text of Zhao's speech was published in Beijing Reveiw, Dec. 21, 1981, pp. 6-36.

3/ The full text of Hu's report was published in Beijing Review, Sept. 13, 1982, pp. 11-40.

4/ The complete title of the plan is "The Sixth Five-Year Plan (1981-85) of the People's Republic of China for National Economic and Social Development." The Sixth Five-Year Plan was adopted by the Fifth Session of the Fifth National People's Congress on Dec. 10, 1982. The full text of the plan was published by People's Publishing House, Beijing, in February 1983.

in the Sixth Five-Year Plan and in other national economic plans. From these strategies and targets, aggregate outputs of China's economy are projected. Changes in the bilateral trade between the United States and China resulting from the Sixth Five-Year Plan and other economic plans are then estimated from the projected changes in output and other variables.

A secondary purpose of this study is to describe recent changes in China's political and economic policies. This information is useful for understanding the economy of China and for further research on China's economic problems.

Contents of the Study

This study contains five chapters and three appendixes. Chapter 2 presents a brief review of China's economic development strategies and plans, including the First Five-Year Plan through the Sixth Five-Year Plan. Chapter 3 shows major changes in China's foreign sector during 1950-83. Chapter 4 contains estimates of the economic effects of China's development strategies on U.S.-Chinese trade. Conclusions are given in chapter 5. Appendix A includes the notice and relevant documents for this investigation. Appendix B contains the Chinese economic terms used in this study and statistical tables (tables B-1 through B-21). A statistical model of the People's Republic of China, from which statistical analyses and estimates of this study were derived, is presented in appendix C.

CHAPTER 2. ANALYSIS OF CHINA'S ECONOMIC DEVELOPMENT PLANS

This chapter describes and analyzes China's economic development plans. The first section is a brief review of the First Five-Year Plan through the Fifth Five-Year Plan. It provides background information that helps explain why China has included new economic strategies in its Sixth Five-Year Plan. The second section examines the Sixth Five-Year Plan. Together, the two sections cover the evolution of China's economic development strategies since the founding of the People's Republic in 1949. The third section discusses some problems in China's national income accounting.

Economic Development Plans, 1950-80

It is difficult to analyze the course of the Chinese economic development since 1950 for several reasons. First, there have been significant changes in the institutional structures in China, so it is difficult to construct a single model of the Chinese economy that would apply to the entire period. In particular, economic development was profoundly influenced by political and ideological developments within the Communist party. Second, public information and statistics for the period are limited and conflicting. Publication of Chinese official statistics virtually ceased in 1959. Researchers had to rely on their own estimates. It was not uncommon for different agencies of the People's Republic Government to make conflicting estimates for the same economic statistics. Sometimes, the differences between the estimates were considerable. 1/ Third, the Chinese economic statistics differ from those used by the United States. For example, China's national accounting system differs from that of the Western countries, and the term "national income" is defined differently in China. 2/ Adding to these difficulties, the Chinese writing style follows the party's direction and makes documents difficult to read. Economic plans tend to be phrased like parables, and they are heavily overlaid with Marxist and Maoist ideology. 3/ In spite of these difficulties, the attempt is made here to analyze China's economic development plans using the best available information.

1/ For instance, in November 1971, Vice Premier Li Xiannian told a correspondent of a Cairo newspaper that different Government departments had given him estimates of the population ranging from 750 million to 830 million. However, Li indicated that the State Planning Commission insisted that the number was less than 750 million. See Colin Clark, "Economic Development in Communist China," Journal of Political Economy, April 1976, p. 240.

2/ The term National income refers to the sum total of net output, in value terms, created during a year in the following material production sectors: industry, agriculture, construction, transport, and commerce. Apparently, the foreign sector and some services are not included. Since U.S. economic terms differ from those of the People's Republic of China, this study uses China's terms unless stated otherwise. Definitions of China's economic terms used in this study are given in app. B. For other Chinese terms, see Statistical Yearbook of China 1981, English edition, (Hong Kong: Economic Information & Agency, 1982), pp. 507-521. All statistics in the yearbook were compiled by the State Statistical Bureau, the People's Republic of China.

3/ Every Government economic plan or work report includes the following sentence or a similar one in its concluding paragraph: "Let us hold aloft the banner of Marxism-Leninism and Mao Zedong thought."

The period of rehabilitation (1950-52)

In December 1949, the Chinese Communists designated 1950-52 as the period of rehabilitation of the national economy. They planned to restore productive facilities and transportation systems that were damaged or destroyed during the Sino-Japanese War (1937-45) and the Civil War (1946-49). The newly established Government also attempted to restore heavy industry, especially the industrial base in Manchuria. 1/ However, the attempt was severely hampered by the increasing demand for military supplies that resulted from amphibious landing operations against the offshore islands held by the Nationalists and from the direct military involvement in the Korean conflict. Nevertheless, a number of plants in light industry recovered to their full capacity during the period.

Smooth recovery in the industrial sectors.--When the Chinese Civil War reached its peak in 1949, China's industrial production fell to its lowest level since 1945. Production of pig iron fell to only 10.9 percent of its historical high, crude steel 15.8 percent, cement 30.9 percent, and coal 44.5 percent. 2/ Facing these low production levels, the Government reluctantly postponed the attainment of its main political objective, public ownership of production means, in order to use the talents of experienced non-Communist technicians, businessmen, factory owners and workers, and administrators. It adopted a liberal policy toward the industrial sector and provided incentives to owners and workers. Some private enterprises were allowed to survive throughout the whole period of rehabilitation.

The policy produced improved economic results, as shown in table 1. By 1952, many factories attained their 1947 level of production capacity. Production of crude steel increased from 0.3 million metric tons (tons) in 1947 to 1.3 million tons in 1952, 3/ and production of pig iron increased from 0.3 million to 1.9 million tons over the same period. Output of the cement industry increased from 1.2 million tons in 1948 to 2.9 million tons in 1952. Production of cotton fabrics doubled, from 1.9 billion meters in 1949 to 3.8 billion meters in 1952. The textile industry has been important in China for centuries, and the liberal policy toward the industrial sector no doubt contributed to the rapid restoration of the industry. Many entrepreneurs in the industry stayed in Shanghai to run their businesses during the period. Another factor in the quick recovery was the availability of transportation. Most cotton textile mills were located in large cities on the east coast, such as Shanghai, Tianjin, and Tsingtao. They could easily get their raw and intermediate materials from inland or abroad, because railroads connecting the major coast cities and inland cities were almost completely repaired during the period.

1/ Known as Northeastern China, Manchuria consisted of three provinces--Liaoning, Jilin, and Heilongjiang.

2/ The figures were cited from "The Current Situation of China's Industries and the Directions of Our Future Work," a report to the Third Session of the First People's Political Coordination Conference read by Li Fuchun, Vice Chairman of Committee on Finance and Economy, the State Council, on Oct. 31, 1951. The full text of the report was reprinted on New China's Economic Achievements During the Past Three Years (Peking: People's Publishing House, 1953), pp. 83-92. Li did not mention the years in which production of the selected products reached their historical highs.

3/ China uses mainly the metric system. Measurements in this study are in the metric units unless stated otherwise.

Table 1.--Estimated production of selected items in China, pre-1949 peak, 1947, 1949, and 1952

Item	Pre-1949 peak	1947	1949	1952
Cultivated area------million hectares--	-	-	97.929	107.974
Rice----------million tons--	57.4	-	48.7	68.5
Wheat----------do------	23.3	-	13.8	18.1
Cotton----------do------	.85	-	.45	1.31
Cotton cloth ----------million meters--	-	-	1,890	3,830.0
Coal----------million tons--	-	-	32.43	66.5
Steel----------do------	-	0.30	.16	1.3
Pig iron----------do------	-	.30	2.52	1.9
Cement----------do------	-	1.20	.66	2.9
Electric power----------million kWh--	-	5,301	4,310	7,260

Source: Figures in the pre-1949 peak, 1949, and 1952, compiled from the State Statistical Bureau, People's Republic of China, Ten Great Years, Peking, Foreign Language Press, 1960. Figures in 1947, compiled from Almanac of China 1948, Nanking, Government Information Service, the Republic of China, 1948.

Note.--Although the table presents official Chinese statistics, it is possible that these figures may differ from other official statistics issued by China.

Agricultural sector problems.--The restoration of agricultural production also proceeded rapidly since it required little of China's scarce capital equipment. Most farmers ploughed and sowed using only human labor. Only a fraction of farmers possessed ploughing animals, such as oxen, water buffaloes, or horses. Farming tractors were rare at that time. The most significant action the Government took for agriculture was land reform. Under the land reform program, landlords' properties were confiscated and redistributed to the peasants. At the same time agricultural "mutual aids teams" and cooperatives were formed to enhance productivity by pooling resources. 1/ On September 21, 1952, Liao Luyuan, Vice Secretary General of the State Council, reported that the distribution of land to peasants was successfully accomplished. 2/

1/ John K. Fairbank, The United States and China, 4th edition, (Cambridge: Harvard University Press, 1976), pp. 373-375.

2/ Liao's report entitled "The Great Victory Over the Land Reform Movement During the Past Three Years" was reprinted in New China's Economic Achievements During the Past Three Years, pp. 111-118. The land reform movement was not accomplished without violence. The provisions of the land reform law were very harsh. Article 10 of the land reform law specifically provided that landlords who acted improperly to their tenants could either be executed or laboriously reformed. Estimates of the loss of lives (of landlords) ranged from 800,000 to 2 million. For details on these estimates, see A. G. Ashbrook, "China: Economic Policy and Economic Results, 1949-71," in People's Republic of China: An Economic Assessment, A Compendium of Papers, published by the Congress of the United States, Joint Economic Committee, May 18, 1972, p. 16.

The impact of the land reform movement on China's economy is difficult to evaluate. According to official Chinese statistics, wheat production amounted to 18.1 million tons in 1952, and rice production reached 68.5 million tons, exceeding the pre-1949 peak level of 57.4 million tons. The area of cultivated land increased from 1,468.2 million mu (Chinese acres) in 1949 to 1,618.8 million mu in 1952. 1/ The gross value of agricultural production increased from Y38.4 billion in 1950 to Y46.1 billion in 1952.

Estimates of production.--Without a meaningful base year, the overall economic growth during the period of rehabilitation cannot be accurately expressed. 2/ Estimates of production and capacity of major sectors in different years are shown in table 1.

China's economic restoration was slowed by participation in the Korean conflict. The industrial sector had been seriously damaged by the Civil War and by war reparations imposed by the Soviet Union after World War II. 3/ Thus, much of the industrial sector was unable to resume production at full capacity within the 3 years from 1949 to 1952. The agricultural sector achieved roughly its 1936 level of output by 1952, but there was a considerable backlog of repair and maintenance to be done on river control and irrigation installations. 4/ The economy of China had not fully recovered by the end of 1952.

The period of the First Five-Year Plan (1953-57)

In late 1952, the CCP Central Committee decided to undertake long-term economic development. To be successful, economic development in a planned economy requires the formulation of a number of well-conceived and highly interrelated policies in pursuit of a particular objective. Due to a lack of experience in economic planning, and to a lack of advanced technology, Chinese leaders had to rely heavily on foreign aid for their economic development. At that time the Soviet Union was the only country that was willing and able to

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1/ 1 mu = 7,174.3 square feet = 0.1647 acre = 0.0667 hectare.

2/ In 1947, most of Mainland China was controlled by Nationalist China; in 1949, most was controlled by the People's Republic of China. During World War II, there were three governments in China--the Republic of China, with its capital in Chungking; Japanese-occupied China, with its capital in Nanking; and Japanese-occupied Manchuria, with its capital in Mukden. Manchuria was established in 1921, and Mongolia has been independent since World War II. Thus, it is difficult to select a base year after 1921 that can be used for meaningful comparisons of national statistics for China.

3/ In 1945, apparently operating on the likelihood that the Nationalist Government would reestablish its authority in China, Moscow ordered the dismantling of many key installations in Manchuria and their removal to Russia as Japanese reparations. For more details on the war reparations, see A. Eckstein, China's Economic Development: the Interplay of Scarcity and Ideology, (Ann Arbor: University of Michigan Press, 1975), p. 185.

4/ Ibid., p. 183.

provide China with economic and technical assistance. With little alternative, Chairman Mao adopted the Soviet model for China's economic development. 1/

A Soviet-supported plan.--The second session of the Second National People's Congress formally adopted the First Five-Year Plan on July 30, 1955, after one-half of the period to be covered by the plan had already passed. 2/ The fundamental tasks of the plan were to implement 156 development construction projects which were designed with Soviet assistance. 3/ Since the plan was based on the Soviet model, it stressed the industrial sector. Thus, its application to China resulted in a significant increase in Chinese industrial output and a sluggishness of Chinese agricultural output.

According to the plan, total investment expenditure was to be Y42.74 billion, of which Y24.85 billion, or 58.1 percent, was to be allocated to industry. 4/ The transport, postal service, and telecommunications

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1/ The principal features of the Soviet or Stalinist model are as follows: high rates of saving and investment (or "capital construction" in Chinese terminology) institutionalized through agricultural collectivizations; heavy emphasis on the development of those industries producing raw materials and investment goods; reliance on large-scale and capital-intensive technology in industry; and relative neglect of investment in agriculture, in consumer goods industries, and in social overhead. This Stalinist prescription results in rapid industrial expansion at the expense of agricultural productivity and standards of living in rural areas. The First Five-Year Plan, both in its conception and execution, had all the earmarks of a Stalinist strategy of economic development. For a detailed discussion of the Soviet development model, see S.H. Cohn, Economic Development in the Soviet Union, (Lexington: D.C. Heath, 1970), ch. 4; also D.W. Treadgold, ed., Soviet and Chinese Communism: Similarities and Differences, (Seattle: University of Washington Press, 1967), pp. 327-363.

2/ The complete title of the plan is The First Five-Year Plan of the People's Republic of China for Developing the National Economy. The plan was prepared by the CCP Central Committee with assistance from Soviet advisers, accepted unanimously by the CCP National Congress on Mar. 31, 1955, and passed by the State Council on June 18, 1955. The Chinese edition of the plan was published by People's Publishing House, Peking, August 1955, and the English edition, by Foreign Language Press, Peking, 1956.

3/ See ch. 1 of the plan. During the 5-year period, 145 out of the 156 construction projects were planned to start or be completed, and 11 other projects were scheduled to start during the period of the Second Five-Year Plan (1958-62).

4/ See ch. 2 of the plan. The total planned expenditure for the period was Y76.64 billion, consisting of the State appropriation (Y74.13 billion), and the local appropriation (Y2.51 billion). Y stands for Chinese currency denomination yuan. The official exchange rate in June 1984 was $1 = 2.2122 yuan according to official statistics of the International Monetary Fund.

sectors were to share 19.2 percent of the investment expenditure. Only Y3.26 billion, or 7.6 percent, was to be distributed to the agricultural sector, including agriculture, forestry, and water conservation. The actual investment expenditure during the period was Y55.00 billion, or 28.7 percent more than the planned figure. 1/ The annual investment in the 5-year period was fairly steady at Y11.00 billion. The high investment spending in the industrial sector resulted in a high rate of industrial growth. During the 5-year period, the annual growth rate of industry was 20.6 percent, whereas the rate for agriculture was only 5.5 percent. Within the industrial sector, the annual growth rate of steel output was 31.8 percent, and for pig iron, 27.7 percent, as shown in table 2. In contrast, the annual growth rate of grain output was only 4.0 percent.

Table 2.--Comparison between planned and actual outputs in China of selected items, 1952, 1953, and 1957, and annual growth rates, 1953-57

Item	1952 actual output	1953 actual output	1957 planned output	1957 actual output	1953-57 annual growth rate
					Percent
Steel----------million tons--	1.349	1.774	4.120	5.350	31.8
Pig iron----------do------	1.929	2.234	-	5.936	27.7
Coal----------do------	66.490	69.680	113.000	130.000	16.9
Electric power---------million kWh--	7,260	9,200	15,900	19,340	20.4
Crude oil--------1,000 tons--	463	622	-	1,458	23.7
Chemical fertilizers----------do------	181	226	-	631	29.3
Cement----------do------	2,860	3,880	6,000	6,860	15.3
Grain----------million tons--	163.92	166.83	226.73	195.05	4.0
Cotton----------1,000 tons--	1,303.50	1,174.50	2,050.25	1,640.00	8.7

Source: Actual figures, compiled from the Ten Great Years, English edition, pp. 95, 99, and 119. Planned figures, compiled from the report on The First Five-Year Plan of the People's Republic of China for Developing the National Economy, (1953-1957), delivered July 5, 1955, to the Second Session of the First People's Congress, by Li Fuchun, Vice Primier and Chairman of the State Planning Committee. A full text of Li's report was included in the First Five-Year Plan, pp. 159-238.

Socialization of the industrial and agricultural sectors.--There was significant progress in the period toward attaining China's main political objective--public ownership of the means of production. In the industrial sector, the share of joint State-private industrial enterprises in China's gross industrial output (exclusive of handicrafts) increased from 5 percent in 1952 to 16.1 percent in 1955. By the end of 1956, about 7,000 private

1/ Ten Great Years, English edition, (Peking: Foreign Languages Press, 1960), pp. 45, 88, and 101.

industrial establishments came under joint State-private management. 1/ The gross output of these joint enterprises accounted for 99.5 percent of the total output of the formerly private establishments, 2/ so that the socialization of the industrial sector was virtually complete. Similar action was taken in the agricultural sector. In 1952, there were only about 3,600 agricultural producers' cooperatives. By the end of 1956, 120 million peasant households, or 96 percent of all the peasant households in China, had joined cooperatives, and the Socialist transformation of agriculture was basically complete. By the end of 1957, the Communist party had placed both industrial and agricultural sectors under tight control. At that time, Chairman Mao believed that the country was ready for his more ambitious Second Five-Year Plan.

The period of the Second Five-Year Plan (1958-62) and the Three Red Banners

An unaccomplished plan.--The five fundamental tasks of the Second Five-Year Plan were (1) the continuation of industrial development with emphasis on heavy industry; (2) the expansion of the Socialist, collective ownership system; (3) further development of light industry, agriculture, handicrafts, transportation, and commerce; (4) intensification of education and scientific research to satisfy the needs of Socialist economic and cultural development; and (5) increased national defense and improved living standards. The Second Five-Year Plan set the growth rate for industry and agriculture combined at 75 percent, much higher than the targeted rate of 51.2 percent set in the First Five-Year Plan. 3/ According to Premier Zhou Enlai's estimate, the total planned expenditure for the Second Five-Year Plan was to be Y120 billion, of which Y72 billion, or 60 percent, was budgeted for development of the industrial sector. As in the First Five-Year Plan, heavy industry was still the core of the economic development program, because, as explained by Zhou, it was the foundation for strong economic power and national defense. High growth rates were set for different subsectors in heavy industry. Planned production of steel for 1962, for instance, ranged from 10.5 million to 12.0 million tons, double the actual 1957 production of 5.4 million tons. Planned petroleum production ranged from 5.0 million to

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1/ The transformation of the ownership of private enterprises to joint State-private enterprises did not cost the Communist government anything. According to Xue Muqiao, a well-known Chinese economist, the owners of private enterprises voluntarily requested the Government to share their properties. The Government automatically got those shares of enterprises which were originally owned by members of the Kuomintung (the National People's Party, founded by Dr. Sun Yet-San). For details, see Xue's book entitled Economic Problems in Socialist China, (Beijing: People's Publishing House, 1979), p. 201.

2/ All figures in this paragraph are derived from the Ten Great Years, pp. 26-31.

3/ The complete title of the second plan was The Second Five-Year Plan of the People's Republic of China for Developing the National Economy, (1958-62). On Sept. 16, 1956, Premier Zhou delivered his report on proposals for the Second Five-Year Plan at the Eighth CCP National Congress. Based on Zhou's proposals, the Eighth CCP National Congress prepared more specific proposals for the Second Five-Year Plan. Both proposals were published by People's Publishing House, Peking, 1956. The five fundamental tasks were translated from Zhou's proposals. The full text of the Second Five-Year Plan has never been published.

6.0 million tons, 10 times more than the 1957 actual production of 0.5 million tons. 1/

Shortly after the plan was launched, a more vigorous movement, the Great Leap Forward, was launched under the direction of Chairman Mao. The Great Leap Forward paralyzed the Second Five-Year Plan and resulted in chaos in the Chinese economy.

The Great Leap Forward.--The Great Leap Forward began in early 1958, when the Communist party hung out the "three red banners," which represented "the General Line for Socialist Construction," "the Great Leap Forward of Production," and the "People's Commune Movement." The General Line was merely a set of four party slogans for Socialist construction--abundance, speed, goodness, and economizing. The Great Leap was a policy aimed at accelerating economic growth. 2/ Chairman Mao adopted the policy, because he believed that the growth rate of China's production could be immediately increased significantly and that it was not necessary to wait for slow, steady growth. The People's Commune Movement attempted to pave the way for the transition of the People's Republic from a Socialist to a Communist country. The movement shared a common objective, an accelerating economic growth, with the Great Leap Forward.

Mao spelled out his strategies for achieving the objective of the Great Leap in two simple, easy-to-remember parables: "walking on two legs" and the "five dualities." 3/ Walking on two legs meant that there should be balanced growth in industry and agriculture. The five dualities was a plan to spur economic development through the total mobilization of the labor force. The duality strategy relied on the use of lagged (outdated) technology and small enterprises. In 1958, for instance, 700,000 small blast furnaces were built for producing steel and 100,000 small coal pits were also set up. 4/ These blast furnaces and coal pits were manned by inexperienced workers who used old production processes. Mao knew that in order to build modern steel mills, it would take several years and huge amounts of capital investment. He attempted to substitute labor for capital by using the lagged technology.

1/ Actual production figures in 1957 were compiled from the Ten Great Years, English edition, and the planned figures for 1962, compiled from People's Daily, Jan. 25, 1960.

2/ Zhou Enlai divided the growth rates of industrial output into three categories: "leap forward," "great leap forward," and "exceptionally great leap forward." An annual increase from 20 to 25 percent is a leap forward; above 25 percent and below 30 percent is a great leap forward; and 30 percent or above is an exceptionally great leap forward. For details on his definitions, see his "Report on the Adjustment of Major Targets in the National Economic Plan for 1959 and Further Development of the Campaign for Measuring production and Practicing Economy," printed in New China Semi-monthly, Peking, No. 17, 1959, p. 22.

3/ The five dualities are (1) to develop industry and agriculture simultaneously; (2) to develop light industry and heavy industry simultaneously; (3) to develop large enterprises, and medium and small enterprises simultaneously; (4) to develop State industry and local industry simultaneously; and (5) to use traditional production technology and modern production technology simultaneously.

4/ See the report written by Zhang Zhidong, Minister of the Ministry of Mines, published in Red Flag, Dec. 1, 1958.

Problems in the steel industry.--In the spirit of the Great Leap Forward, the Communist party set its production targets at unattainable levels. For example, in accordance with the 1958 annual economic plan, the production target for steel was 6.2 million tons. The Politburo of the CCP Central Committee raised the target to 8.5 million tons in May 1958 and to 10.7 million tons in August 1958. The central authorities believed that the increase in production could be accomplished by using more labor. Using the slogan "all people joining steel production," the Communists attempted to transform peasants into steel workers overnight. Several million people joined the steel industry each month during the first 9 months of 1958, and the number of nonprofessional steel workers, who employed the lagged technology, reached 50 million or 18.8 percent of total labor force, in October 1958. 1/ The central authorities gave extremely high production quotas to local Communist authorities. In order to meet assigned quotas, these unskilled steel workers worked day and night. The quality of the steel made through the old-fashioned furnaces was much inferior to that of steel made in modern steel mills. According to Premier Zhou's report, 5 million tons of steel produced in 1958 was useless because of its poor quality. 2/ In addition to problems of quality control, the high quotas encouraged unreliable reports on production. In cases where the assigned quotas could not be filled, some local Communist authorities may have falsified production figures. The central authorities later revised the reported figures and corrected the previously announced achievements of the Great Leap Forward. For instance, the originally reported production of steel in 1958 was 18 million tons, which was revised to 11.08 million tons (table 3). The problems caused by quotas were not limited to the steel industry; they were also widespread among other industries and in the agricultural sector.

Table 3.--China's actual production of selected items, 1957, and reported and revised production, 1958

Item	Actual production in 1957	Originally reported production in 1958	Revised production in 1958
Grain----------million tons--	195.1	375.0	250.0
Cotton----------do------	1.640	3.326	2.100
Soybeans----------do------	10.050	12.450	10.450
Peanuts----------do------	2.562	4.011	2.800
Steel----------do------	5.35	18.00	11.08
Coal----------do------	130	380	270
Electric power-------million kWh--	19,340	-	27,530

Source: Actual production figures in 1957, compiled from the Ten Great Years; originally reported figures, compiled from the 1958 national economic development report printed in the People's Daily, Apr. 15, 1959; all revised figures, compiled from a report on revision of production statistics printed in the People's Daily, Aug. 27, 1959.

1/ See Bo Yibo's report, printed in People's Daily, Oct. 1, 1958; for China's population and labor force, 1952-83, see table 1-B in app. B.

2/ See Zhou's report, printed in People's Daily, Aug. 29, 1959.

Unlike the Second Five-Year Plan, the Great Leap Forward was not carefully planned and was rashly implemented. The Great Leap Forward caused a huge waste of both material and human resources. 1/

Establishment of the commune system.--In April 1958, China started its People's Commune Movement, the most dramatic institutional change in Chinese history. Within a few months, more than 740,000 agricultural cooperatives were under the movement. These cooperatives were run by over 26,000 people's communes which functioned dually as productive units and local governments. The communes were responsible for managing industry, agriculture, trade, education, and military affairs within their respective regions. They embraced 120 million peasant households, or over 99 percent of all peasant families in China. 2/ The motivation behind establishing the commune system was based on ideological, economic, and military considerations. According to an official statement, the people's communes were established in response to the demands of broad masses of peasants throughout the country. The stated reason for expanding the basic agricultural unit from an average size of 200 families (the cooperative) to 4,000 to 5,000 families (the commune) was that the larger unit could undertake added functions. Some scholars believed that the real reason for the expansion was that the communes made it easier to insure proper party control, since only 26,000 communes had to be individually staffed, instead of the previous 740,000 separate cooperatives. 3/ Others thought that the reason for establishing the communes was to accelerate the transition from socialism to communism and to lay the cornerstone of collective life. 4/

The immediate result of the implementation of the People's Commune System was turmoil, accompanied by revolts in the rural districts. According to newspaper reports, some resentful peasants responded to the implementation with work slowdowns, slaughter of livestock, and damage to public properties. 5/ One possible cause of the peasants' resentment to the system was the elimination of their traditional family life. 6/ The result of such

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1/ The estimated loss during the 3 years of the Great Leap Forward, 1958-60, amounted to Y100 billion ($66 billion), as reported by the People's Daily, Apr. 9, 1981. By using a simple statistical method, the Commission staff found that each year during the Great Leap Forward period, China's national income was reduced by Y30.68 billion ($9.10 billion at 1960 prices) from its expected output. See, equation 2 in app. C.

2/ Ten Great Years, English edition, p. 31. The total number of agricultural cooperatives in 1957 was 752,113. Of these, more than 740,000 were run by the communes. According to the definition given by the Eighth CCP Central Committee, "The People's Commune is the basic unit of the social structure of our country, combining industry, agriculture, trade, education, and military. At the same time, it is the basic organization of social power." This definition was printed in New China Bimonthly, No. 24, December 1958, p. 8. For composition of Chinese people's communes, 1958-82, see table B-2.

3/ Dwight H. Perkins, Market Control and Planning in Communist China, (Cambridge: Harvard University Press, 1966), pp. 83 and 84. Perkins put the number of cooperatives at 700,000.

4/ C.Y. Cheng, China's Economic Development Growth and Structural Change, (Westview Press: Boulder, CO, 1982), p. 102.

5/ Da Gong Newspaper, Peking, Oct. 25, and Dec. 7, 1958.

6/ In the initial stage of communalization, the peasants were required to dine together in public mess halls, to place their children in communal nurseries, and in some cases, to live in communalized dormitories. In some

revolts was a reduction in the food supply. Premier Zhou's report of August 1959 disclosed that because the work of reaping, threshing, gathering, and storing the 1958 autumn harvest had been done so poorly, a great part of the crops had perished. 1/ Although Zhou's report blamed the shortage of agricultural labor for the waste of crops, some analysts believe that peasant sabotage was an important factor. 2/ The harvests were even worse in 1959 and 1960 than they were in 1958, causing the food shortage to become severe. Although it is not clear whether the bad harvests were the result of the commune system or natural disasters, the resultant famine in 1960 definitely intensified resentment of the commune system and contributed to the increasing death rate reported in 1960. 3/

Mao's unsuccessful strategy.--The unsuccessful People's Commune Movement and the Great Leap Forward led to the first open split within the top Communist leadership. Mao believed his speed strategy, which had been successful in the guerrilla warfare against the nationalists, should be workable in economic development. He preferred a high growth rate to a low growth rate. While economic planners were trying to lower the target of 1959 steel production at the Shanghai Conference, Mao made the criticism: "I doubt that you comrades in economic work really know any economics." 4/ Unfortunately, the actual production figure was closer to the planners' target than to Mao's target. Although many people were dissatisfied with the commune system, none dared to criticize either the system or Mao openly. Marshal Peng

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1/ People's Daily, Aug. 19, 1959.

2/ Cheng, op. cit., p. 104.

3/ According to the Chinese demographic records, the number of deaths in China increased from 7.5 million in 1957, the year before the People's Commune Movement, to 17.8 million in 1960. The famine in 1960 was probably the main factor responsible for the increase. For a detailed discussion of the changes in deaths, see World Journal, New York, Apr. 24, 1981. According to a news dispatch sent by a Reuter correspondent from Peking on Dec. 23, 1983, about 12 million to 24 million people died of hunger in 1960 and 1961. This estimate was based on population figures in Statistical Yearbook of China 1983, (Hong Kong: Economic Information & Agency, 1983), sec. 2 (Population and Labor Force). According to the U.S. Bureau of Census estimate, the loss of life due to the famine during the Great Leap Forward was as high as 30 million. For details on the U.S. Bureau of Census estimate, see S. Broening, "The Death of 30 million Chinese," in The Sun, Baltimore, Apr. 26, 1964, p. A19.

4/ Xue Muqiao, Current Economic Problems in China, translated by K.K. Fung, (Boulder: Westview Press, 1982), p. 6. The target for 1959 steel production was a hot issue at the Shanghai Conference held at the end of March 1959. In the winter of 1958, the planned output of steel for 1959 was set at 30 million tons. Chen Yun thought it was too high. Finally, the decision was to adopt an externally announced figure of 18 million tons and an internal reference figure of 20 million tons. The figure was reduced to 16.5 million tons at the conference. Chen recommended a further reduction to 13 million tons and displeased Mao. In August 1959, Premier Zhou changed the planned figure to 12 million tons in his report to the Standing Committee of the National People's Congress. For a detailed discussion of differences between Mao and the economic planners, see Xue's book and Chen's letter to Mao concerning problems in the steel target, May 1959. The letter was reprinted in N.R. Landy and K. Lieberthal, ed., Chen Yun's Strategy for China's Development: A Non-Maoist Alternative, (New York: M.E. Sharpe, Inc., 1983), pp. 127 and 128.

Denhuai, then Defense Minister, made the first criticism of Mao's speed strategy. He characterized the commune as "petty bourgeois fanaticism," and endorsed the common complaint that the introduction of the communes was "too early, too fast, and too rude." 1/ The chaotic situation existing in China's economy was exacerbated by the unexpected withdrawal of all Soviet economists and technicians working in China in August 1960. 2/ Facing growing criticism, Mao reluctantly resigned from the presidency of the People's Republic of China and gave the position to Liu Shaoqi, who was later called the "No. 1 capitalist roader" in the party. After the 3-year Great Leap Forward, the economy needed some adjustment of the output proportions among heavy industry, light industry, and agriculture. Some Chinese economists believed that if the Second Five-Year Plan had been implemented, development of the national economy during 1958-62 would have been even better than under the First Five-Year Plan period. 3/

The period of adjustment (1961-65)

The 1960 nationwide starvation resulted in the flight of thousands of hungry people from China to Hong Kong, Macau, and other cities situated near the border. At this time, Mao realized that his economic development strategies, which called for a high growth rate in heavy industry, were impractical. To deal with the severe food shortage, the Communist authorities had to import a huge amount of grain from abroad. In addition, they had to reconsider their development strategies. In January 1961, the Ninth Plenum of the Eighth CCP Central Committee formulated four guidelines for economic recovery--adjustment, consolidation, enrichment, and elevation. 4/

Changes in development strategy.--Under the guideline of adjustment, the order of sectoral priorities of heavy industry, light industry, and agriculture was reversed. During this period, the guiding policy of economic development was "agriculture as the foundation and industry as the leading factor." The most important tasks of industry were to support the development of agriculture and to provide essential industrial consumer goods.

The guideline of consolidation aimed at eliminating the chaotic situation resulting from the People's Commune Movement and the Great Leap Forward. Although the commune system was not abolished, its functions and the peasant's life style were changed substantially. The peasant was now allowed to dine at home and to have an individual cultivated plot.

1/ Peng submitted his 10,000-word letter to Mao at the Politburo Conference of the CCP Central Committee held in Lushan in July 1959. Copies of the letter were distributed to all participants in the conference. The letter was reprinted in Newsletters of Mass Criticism and Repudiation, Red Guards, Tianjin, 1968. Peng was prosecuted and died in prison during the Cultural Revolution.

2/ The withdrawal of Soviet technicians also delayed China's first nuclear test, which took place in October 1964. After 1960, "self-reliance" became a new catchword in China's economic plans.

3/ Xue, op. cit., p. 7.

4/ In Chinese, these four guidelines are formed by eight Chinese characters. Sometimes, they are referred to as the "old eight-character" program in order to distinguish it from the current eight-character program.

The guideline of enrichment was meant to strengthen the weak links among different economic units and to correct the false production reports that occurred during the Great Leap Forward. The guideline of elevation purported to elevate the levels of production technology and the quality of products.

On the basis of these guidelines, central planners prepared two sets of more specific economic policies known as the "60 Articles of the People's Commune" and the "70 Articles of Industry," which were designed to put the economy on the right track. 1/ Starting from 1961, adjustment work on the national economy under the leadership of Premier Zhou and Chen Yun went smoothly. Chen was actually in charge of economic planning by that time.

Results of the "Agriculture First" Policy.--A substantial drop in heavy industry production in 1961 and 1962 was reported, as expected. Grain production also dropped in 1961 due to severe natural calamities. However, the economy showed signs of recovery in 1963, and by 1965, grain production almost reached the 1957 level (tables 2 and 4). The results achieved during the period of adjustment revealed that Zhou and Chen's economic policies were practical at that time. 2/

1/ In March 1961, the CCP Central Committee promulgated the Draft Regulations concerning the Rural Communes commonly referred as the "60 Articles;" it was then revised and finally put into effect in September 1962. Significant changes made by the revised regulations included (1) the team owned the major means of production and replaced the brigade as the basic accounting unit; (2) 7 percent of each team's cultivated area was given to the peasants as private plots; and (3) peasants could sell their surplus goods in a free market. The regulations governing industry development and management consisted of 70 articles and aimed at correcting the errors made during the Great Leap Forward. For instance, under art. 13, all industrial units that operated in the red must be deactivated unless instructed otherwise by an appropriate authority. Art. 34 set up a quality control requirement and banned all disqualified products from being shipped out from the producing units. Under these regulations, many inefficient industrial units, including many small and obsolete blast furnaces, were closed. For a more detailed discussion of the revised regulations on the commune system, see K.C. Yeh's "Agricultural Policies and Performance," Yuan-li Wu, ed., China: A Handbook, (New York: Praeger, 1973), pp. 487-532.

2/ Learning from the Great Leap Forward, the Chinese authorities adopted the "agriculture first" policy. This was consistent with Chen Yun's strategy, i.e., the first need is food and the second need is development. According to Chen, the economy, like a caged bird, should have very limited freedom and must be under strict control. Chen's "bird cage" policy excluded him from the Deng faction. Basically, Chen is a Stalinist and advocates the traditional planned economy. His economic thoughts and policies are included in his recently published book entitled Selected Works of Chen Yun, Vol. II, (1949-56). Highlights of the second volume were printed in People's Daily, July 15, 1984, pp. 1 and 4. Chen's economic policy was outmolded after Deng adopted the open-door policy and delegated some planning authorities to enterprises. Chen earned his reputation by asking Mao for reduced steel production during the Great Leap Forward. Nobody dared to argue with Mao at that time. Without Chen's persistent suggestion for reduced industry output, it is possible that the famine would have been more severe than it was.

Table 4.--Estimated, planned, and actual production in China of selected items, 1959, 1962, and 1965

Items	1959, estimated	1962		1965	
		Planned	Estimated	Estimated	Actual
Grain----------million tons--	165.0	250.0	75-180	190-195	194.6
Cotton----------do------	1.6	-	.9	1.5	2.1
Steel----------do------	10.0	10.2-12.0	8.0	11.0	12.2
Coal----------do------	300.0	190.0-210.0	180.0	220.0	232.0
Crude oil----------1,000 tons--	3,700	5,000	5,000	8,000	11,310
Cement----------do------	11,000	12,500-14,500	5,500	11,000	16,340
Cotton cloth---million meters--	7,500	7,290-8,000	4,200	5,400	6,280
Electric power----million kWh--	42,000	40,000-43,000	30,000	42,000	67,000

Source: All estimated figures are from the tables on pp. 83, 121, and 124 of People's Republic of China: An Economic Assessment, the Congress of the United States, Joint Economic Committee, May 18, 1972. All planned figures are from People's Daily, Peking, Jan. 25, 1960. All actual figures are from section VI: China's Economic Statistical Data of Almanac of China's Economy 1981, English edition, (Hong Kong: Modern Cultural Co., 1982), distributed in the United States by Ballinger Publishing Co., Cambridge, MA.

By 1965, the last year of the 5-year period of adjustment, the Chinese economy had fully recovered from the Great Leap Forward, and outputs of different sectors of the economy reached the targets set forth in the proposals of the Second Five-Year Plan.

The shares of the three major sectors (agriculture, light industry, and heavy industry) in total gross output of industry and agriculture fluctuated substantially during the First Five-Year Plan, the 3-year Great Leap Forward, and the 5-year adjustment, as shown in table 5. The share of agriculture decreased from 58.53 percent in 1952 to 20.10 percent in 1960, whereas the share of heavy industry increased from 14.75 to 53.30 percent over the same period. The implicit changes in resource allocation were partially responsible for the famine in 1960.

Table 5.--Percentage distribution of China's agriculture, light industry, and heavy industry, in the gross value of industrial and agricultural production, 1952, 1957, 1960, and 1965

Sector	1952	1957 1/	1960	1965 1/
Agriculture----------percent--	58.53	43.27	20.10	29.74
Light industry----------do----	26.72	30.14	26.60	35.43
Heavy industry----------do----	14.75	26.59	53.30	34.83
Total----------do----	100.00	100.00	2/ 100.00	100.00
Total---------billion yuan--	82.70	124.10	183.75	198.40

1/ Data are in terms of 1957 constant prices.
2/ Calculated on the basis of 1952 actual values and 1960 indexes.

Sources: Almanac of China's Economy 1981, pp. 960, 966, and 971.

The agriculture, light industry, and heavy industry shares in 1965 were 29.7, 35.4, and 34.8 percent, respectively. For China, these shares were more desirable than those of 1960. Thus, during the 5-year period of adjustment, the allocation of China's resources improved.

The period of the Third Five-Year Plan (1966-70) and the first phase of the Cultural Revolution

There were few Chinese economic reports and statistics published after 1959 and before 1977. Although the first official statistical yearbook was published in 1981, its contents are insufficient for a comprehensive study of China's economy. Not much was reported on the contents of the Third Five-Year Plan. It is merely mentioned that "in the period of the Third Five-Year Plan (1966 to 1970), the growth rates of industrial and agricultural outputs, although higher than those of the previous eight years, were markedly lower than those of the First Five-Year Plan period." 1/ This was due partially to the Cultural Revolution. 2/

Initiation of the Cultural Revolution.--Mao's underlying goal in starting in the Cultural Revolution was to strengthen his control over the party as well as the Government. 3/ When Mao placed Liu Shaoqi in the Presidency, the highest position of the Government, he did not foresee that Liu would revise

1/ Xue, op. cit., p. 33. It seemed the growth rates are the actual rates rather than the planned rates. Xue did not write anything more about the Third-Five-Year Plan in his book.
2/ The complete name is the Great Proletarian Cultural Revolution.
3/ Cheng, op. cit., pp. 42 and 43.

or reject his policy and ideology. 1/ Mao and Liu also had different views on economic management. The former stressed spiritual incentives, and the latter emphasized material incentives and permitted a partially capitalistic economy. The split between the two men grew over time. By the end of 1964, Mao had decided to remove Liu from the Presidency. Mao said, in an interview with Edgar Snow in January 1965, that he felt a concern that was even stronger and broader than his desire to remove Liu and curb the "revisionists" of the Party leadership. 2/ As pointed out by H. C. Hinton, "Mao's worry was that the future of (the) revolution in China might be in danger if its youth were insufficiently revolutionary. He believed that the young people should be ideologically energized." 3/ According to John K. Fairbank, Mao believed that the revolution was endangered by a "struggle between two lines" -- either a conventional development of stale industry and elitist bureaucracy or another attempt to achieve egalitarian Socialism, Chinese style. 4/ Finally, Mao expanded the Rural Socialist Education Movement to the Cultural Revolution.

The Politburo meeting of the CCP Central Committee in May 1966 officially marked the launching of the Cultural Revolution, which was defined as a struggle against the revisionist line. 5/ In the early stage, the movement mounted a struggle against the so-called antiparty clique, including Liu Shaoqi, Deng Xiaoping, Peng Zhen, and Luo Ruiqing. 6/ At this stage, organizations of militant Maoist students, known as Red Guards, were first activated at universities and secondary schools in Peking, and later throughout the country. The Red Guards denounced and demonstrated against the

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1/ For instance, Liu did not take any action to stop an anti-Mao movement initiated by a group of writers and ideologists who criticized Mao's policy and ideology in November 1961. In late 1962, the socialist education movement began, aiming at the elimination of bourgeois influence, cadre corruption, and other misconducts. In May 1963, the party adopted a "Draft Resolution on Some Problems in Current Rural Work," which was known as the First Ten Points and was reportedly drafted by Mao. In September 1963, the party issued a new directive entitled "Some Concrete Policy Formulations Concerning the Rural Socialist Education Movement (Draft)," which was reportedly drafted by Liu. The new draft shifted Mao's original focus of the movement in a subtle way. Apparently Mao lost his control over Liu. For a detailed discussion on the Socialist Education Movement, see Wu, op. cit., pp. 519 and 520.

2/ H.C. Hinton, "History," H.C. Hinton, ed., The People's Republic of China: A Handbook, (Boulder: Westview Press, 1979), p. 78.

3/ Ibid., p. 78.

4/ Fairbank, op. cit., p. 418.

5/ In ideology, Mao generally supported Joseph Stalin. After Khrushchev's de-Stalinization compaign in 1956, Mao designated Khrushchev and his followers as "Revisionists." Later the term was used by the Red Guards to criticize non-Maoists.

6/ For other members of the antiparty clique, see the "Resolution on Certain Questions in the History of Our Party Since the Founding of the People's Republic of China," adopted by the Sixth Plenary Session of the 11th CCP Central Committee. Written under the leadership of Deng Xiaoping, the resolution was published in both Chinese and English. One English version was printed in Almanac of China's Economy 1981, pp. 77-104. Peng Zhen was then the mayor of Peking, and Luo Ruiqing was the Chief of Staff of the PLA.

"power holders" in their own institutions and in the party leadership. They attacked many capable and accomplished intellectuals and paralyzed the entire educational system. Fighting between the guards and peasants or workers was reported in many places.

In response to the violence, Mao sent the army to maintain order. However, many further disorders were created by the guards. The increasingly important role which the People's Liberation Army played in the Cultural Revolution strengthened the relationship between Mao and Lin Biao, then Defense Minister.

By the summer of 1968, the Red Guards had outlived their usefulness in helping Mao remove major figures of the antiparty cliques. Thus, Mao authorized their suppression at the end of July 1968. 1/ Mao had to resort to using the People's Liberation Army to stop Red Guard activities. By 1969, the first phase of the Cultural Revolution had come to an end. With Lin's support, Mao successfully purged Liu, Deng, Peng, Luo, and other revisionists. Mao made Lin the vice chairman of the CCP Central Committee and apparent heir as a reward for his support.

Although the Cultural Revolution was basically a political power struggle, it had some adverse effects on the Chinese economy. The Cultural Revolution caused relatively moderate damage in the agricultural sector. In 1966, its activities were mainly restricted to large cities, so the Cultural Revolution did not cause any severe damage to agricultural production in that year. On November 14, 1967, Premier Zhou stated that grain output in 1967 increased by 5 to 6 percent compared with that of 1966. However, as more Red Guard activities spread from the cities to the rural communes, grain output began to decline. In 1968, this output declined by 2.5 percent from the 1967 level. The levels of agricultural output increased again in 1969 and 1970 after the suspension of the Red Guards. 2/ During 1966-70, the average growth rate of the agricultural sector was 3.9 percent.

The Red Guards caused relatively serious damage in the industrial sector. In September 1967, Premier Zhou told demonstrators in Peking that a serious shortage of coal would develop in the winter of 1967 if workers did not go back to coal mines and increase their production. 3/ The reduction in coal production in 1967 forced the Government to ration coal for private

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1/ Hinton, op. cit., p. 83.

2/ The total grain output exceeded the previous record in 1970, as reported by Peking Review, Jan. 8, 1971. Xue Muqiao did not trust figures of agricultural production reported by newspapers. In his book, Current Economic Problems in China, (pp. 20 and 21), Xue stated: "There were several ups and downs in agricultural production during the Cultural Revolution. Newspapers claimed that agricultural output grew every year for more than ten years. These were lies. Food grain output increased from 400 billion jin in 1958 to 570 billion jin in 1976. Because of population increase, the average per capita food grain consumption was only 383 jin, still lower than 1956." 1 jin = 0.5 kilogram = 17.66 ounces.

3/ The demonstrators included the Red Guards, workers, and peasants from different provinces. Some of the demonstrators were coal mine workers. Generally, Zhou did not support the Red Guard movement.

consumption and to cut power supplies. Outputs of other industries were also affected by the energy reduction. According to estimates by R. M. Field, production of steel decreased by 23 percent from 1966 to 1967. Production of chemical fertilizer decreased by 27 percent, cement, by 17 percent, and cotton cloth, by 20 percent. 1/ Outputs of these selected products reached their peak levels before the Cultural Revolution. During the 5-year period (1966-70), the average annual industrial growth rate was 11.7 percent. The effects of the Red Guards can be seen by examining the production index numbers in table 6. The gross values of industrial production and agricultural production both increased substantially after the suspension of the Red Guards in 1968.

Table 6.--Production indexes of agriculture, and heavy and light industry, 1965-70

(1952=100)

Year	Agriculture	Industry		
		Total	Light	Heavy
1952	1/ 100.0	2/ 100.0	3/ 100.0	4/ 100.0
1965	137.1	452.6	344.5	650.6
1966	148.9	547.4	394.3	829.2
1967	151.3	471.8	366.4	663.6
1968	147.5	448.0	348.3	629.8
1969	149.2	601.6	436.1	906.6
1970	166.4	786.0	514.9	1,289.9
Annual growth rates (1952-70)	2.87%	12.14%	9.53%	15.27%

1/ Y46.1 billion at 1952 prices.
2/ Y34.9 billion at 1952 prices.
3/ Y22.5 billion at 1952 prices.
4/ Y12.4 billion at 1952 prices.

Source: Almanac of China's Economy 1981, pp. 960, 966, and 971.

During the period of the Third Five-Year Plan, heavy industry grew faster than agriculture and light industry. The suspension of the Third Five-Year Plan did not mean that the Government had terminated its economic planning function. The Government prepared the Fourth Five-Year Plan as scheduled.

1/ Field's estimates were printed in the People's Republic of China: An Economic Assessment, p. 83. It was also reported that the coal production was decreased by an estimated 40 percent. Since most Chinese power plants were energized by coal, the reduction in coal production meant a reduction in power supply. For production of selected agricultural and industrial products, 1952-82, see tables B-3 and B-4.

The Period of the Fourth Five-Year Plan (1971-75) and the second phase of the Cultural Revolution (1971-76)

Like the Third Five-Year Plan, the full text of the proposal of the Fourth Five-Year Plan has never been published. During the period of the Fourth Five-Year Plan, the Cultural Revolution and the power struggle continued. Lin Biao, Mao's designated successor, died in 1971, and Premier Zhou took over the day-to-day management of the Government. 1/ In 1974, the "Gang of Four" launched an all-out attack on Zhou Enlai and Deng Xiaoping. 2/ The impact of these political events on the economy was unfavorable. During the same period, two new economic policies, the open door and the four modernizations, were formulated.

Formulation of the four modernizations.--In 1971, Mao had charged Premier Zhou with the responsibility of accelerating development of the national economy. Zhou realized that economic development required modernizing the aging machinery and equipment used by Chinese industry. In particular, he realized that Chinese industry could not be modernized without imports of foreign technology. Zhou decided to import the needed foreign technology and to improve China's economic relations with Western countries, especially with the United States. In February 1972, President Nixon paid a historic visit to Peking and signed the Shanghai Communique, which paved the way for China to import U.S. technology. On the basis of his outward looking strategy, Zhou prepared his four modernizations proposal which was designed to develop the nation's economy through modernizing China's agriculture, industry, science and technology, and national defense. 3/ This proposal constituted the top guideline for subsequent economic plans.

Growth rates.--The economic growth was relatively stable in the Fourth Five-Year period compared with that in the Third Five-Year Plan period. According to Xue, during the period of the Fourth Five-Year Plan, the growth rate of agricultural output was 3.96 percent, about the same as in the previous 5 years, and the growth rate for industrial output was 9.13 percent,

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1/ The official report of Lin's death is that Lin tried to flee to the Soviet Union after an unsuccessful attempt at assassinating Mao, but was killed in a plane crash.

2/ Led by Jiang Qing, wife of Mao Zedong, the Gang of Four included Wang Hongwen, Zhang Chunqiao, and Yao Wenyuan. All of them became members of the CCP Politburo in 1973. In the Politburo, Wang at age 39 was ranked third in power, only after Mao and Zhou.

3/ In 1964, Zhou Enlai first mentioned his four modernizations concept at the Third National People's Congress. The concept had enjoyed the support of the party leadership for years. In January 1975, Zhou reported to the Fourth National People's Congress his Four Modernizations Program, which was introduced in China Reconstructs (monthly), Special Supplement 24:3, Peking, English edition, March 1975.

lower than that of the Third Five-Year Plan period. 1/ The proportional relations among agriculture, light industry, and heavy industry did not improve. In 1975, the shares of agriculture, light industry, and heavy industry in total gross output were 28.53, 30.93, and 40.54 percent, respectively. Although the plan included years when there were fundamental changes in China's top leadership (such as the fall of Lin Biao and the rehabilitation of many of those who fell from favor earlier), output of agriculture and industry did not fluctuate nearly as much as in those years in which the Red Guard activities were reported. However, the economic planning never ceased, even though most economic plans were not implemented.

The effects of the Cultural Revolution.--The Cultural Revolution was another disaster for the People's Republic of China. As pointed out by Deng Xiaoping, it was a complete mistake. He predicted that its adverse effects would last for more than a generation. 2/ The effect of the Cultural Revolution on China's economy and educational system was very serious. The present study estimates that China fell short of its expected output by 17.10 billion yuan ($5.05 billion at 1960 prices) each year during the Cultural Revolution. 3/ In addition, the well-established higher education system in China was virtually destroyed during the 10-year period of this revolution, and the education of an entire generation was seriously interrupted.

The period of the Fifth Five-Year Plan (1976-80) and the Ten-Year Plan (1976-85)

The Fifth Five-Year Plan has never been published. Unlike the Fourth Five-Year Plan, the fifth plan has rarely been cited in either Chinese or

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1/ Xue, op. cit., p. 33. Xue explained economic development during 1971-75 in terms of ideology or power struggle. On the same page he stated that "In the first few years of the Fourth Five-Year Plan, Premier Zhou proposed to critize extreme leftist thought: Industrial and agricultural output developed relatively smoothly. In 1974, the Gang of Four used the campaign to criticize Lin Biao and they used Confucius to point their evil spear at Zhou in an attempt to usurp the Party and seize power. Once again, industrial and agricultural output suffered serious setbacks. In 1975, Deng Xiaoping assisted Zhou to thoroughly implement Chairman Mao's instruction relating to building up the economy. In that year, industrial output rose by 15.1 percent and agricultural output also increased over the previous year." This is a typical Chinese interpretation of China's economic growth, in which an individual or a faction rather than the Government or the party is responsible for economic results. The two growth rates were calculated from the production indexes printed in Almanac of China's Economy 1981.

2/ Deng blamed Lin Biao and the Gang of Four for the Cultural Revolution. As a victim of the Cultural Revolution, Deng denounced the movement in his writing entitled "Suggestions on the Drafting of the Resolution on Certain Questions in the History of Our Party Since the Founding of the People's Republic of China," Red Flag, vol. 425, July 1, 1983, pp. 2-15.

3/ For explanations, see the Great Cultural Revolution variable in app. C.

English publications. 1/ Several studies used the targets set forth in the Ten-Year Plan as the Fifth Five-Year Plan's targets for their economic development analysis. It is believed that the Fifth Five-Year Plan (or its outline) was developed under the leadership of Zhou and Deng. In 1974 and 1975, while Zhou suffered a long illness, Deng took care of the daily routines of the State Council and gained power. The ideological difference between Mao and Deng had already long existed. For years, Deng was under Zhou's protection. After the death of Zhou on January 8, 1976, Deng was, once again, exposed to criticism from the radicals. 2/ The newly selected Premier, Hua Guofeng, assessed the national economy between 1974 and 1976 and termed it as being on the brink of collapse. For political reasons, he attacked Deng's pragmatic economic ideas. 3/ Hoping to stay in power for a decade, Hua prepared an economic development plan for 10 years rather than the traditional 5-year period.

The Ten-Year Plan (1976-85).--The Ten-Year Plan was prepared in accordance with Zhou's concept of the four modernizations and Mao's policy of high-speed development. A new feature of the Ten-Year Plan was a more open and liberal attitude toward foreign trade and investment in China. According to the Ten-Year Plan, the annual growth rate of gross agricultural output for the period 1978-85 was planned to range from 4 to 5 percent, and the target rate of growth of gross industrial output was set above 10 percent. 4/ In these 8 years (1978-85), State revenues and investments for capital construction were both planned to equal the total for the 28 previous years. The shares of new investment expenditures going to industry, agriculture, and

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1/ In the China's Statistical Yearbook of China 1981, the growth rates of agriculture and industry in the Fifth Five-Year Plan period were presented.

2/ In a speech delivered at the Banquet in Honor of King Birendra of Nepal, Premier Hua Guofeng said that great victories have been won in the struggle initiated and led personally by the great leader Chairman Mao. Hua criticized Deng Xiaoping's counterrevolutionary revisionist line and repulsed the Right deviationist's attempt to reverse correct verdicts. The excerpts of Hua's speech were printed in the Peking Review, June 11, 1976, pp. 6 and 7. Other published criticisms on Deng's economic ideas in 1976 included (1) "Grasp the Crucial Point and Deepen The Criticism of Deng Xiaoping," People's Daily, editorial, Peking, Aug. 23, 1976; (2) Li Chang, "Deng Xiaoping's Total Betrayal of Marxism," Red Flag, No. 5, 1976; and (3) Kao Lu, "Comments on Deng Xiaoping's Economic Ideas of the Comprador Bourgeoisie," Red Flag, No. 7, 1976. The English version of Li Chang's article was printed in Peking Review, June 18, 1796. The death of Mao terminated the second purge of Deng and marked the end of the Cultural Revolution.

3/ Peking Review, Mar. 10, 1978, pp. 7-40..

4/ All figures in this paragraph are from the Outline of the Ten-Year Plan for the Development of the National Economy, 1976-85, which was endorsed by the First Session of the Fifth National People's Congress on Mar. 5, 1978. Premier Hua included the outline of the plan in his Report entitled "The Work of the Government," delivered at the Fifth National People's Congress on Feb. 26, 1978. Full text of the report was printed in Peking Review, Mar. 10, 1978, pp. 7-40. For a more detailed analysis of the Ten-Year Plan, see Cheng, op. cit., pp. 274-278.

communications were planned at 54.8, 11.0, and 13.5 percent, respectively. Compared with the investment shares set in the First Five-Year Plan, the share of industry decreased by 3.3 percent and the share of agriculture increased by 5.9 percent.

The slogan--"Agriculture is the foundation of the national economy"--was included in the plan. The Ten-Year Plan called for an 85-percent mechanization in all major processes of farm work, including improved water conservation, and an increase in the area of cultivated land. According to the plan, by 1985, the country would produce 400 million tons of grain. Only 284.5 million tons was produced in 1975. This meant that the annual growth rate for grain was targeted at 3.47 percent. On the basis of the 1982 production figure, 353.43 million tons, the planned target for the 1985 grain output seems attainable. 1/

In industry, the plan called for substantial strengthening of the national defense and basic industries, and for rapid expansion of output of power, fuel, raw materials, and semifinished products. More specifically, the State planned to build or complete 120 large-scale projects, including 10 iron and steel complexes, 9 nonferrous metal complexes, 8 coal mines, 10 oil and gas fields, 30 power stations, 6 new trunk railways, and 5 key harbors. 2/ These projects were very costly and had proved to be beyond China's financial capabilities. According to Deng's estimate, China was about $300 billion short of the capital needed to finance the Ten-Year Plan. 3/ The shortage of capital forced the Chinese leadership to drop its ideological opposition to borrowing from abroad and to set up incentive laws and regulations governing foreign investments in China. Since the targets were too high, the plan could not be fully implemented.

More than 100,000 construction projects of different sizes were launched within 1 year after Hua's announcement of the Ten-Year Plan in February 1978. The rate of capital accumulation in 1978 was officially given as 36.6 percent of the national income, and investment spending amounted to as much as Y61.97 billion, or approximately $36.0 billion at the prevailing exchange rate. Even with this high investment spending, many projects could not be fully financed. Due to the lack of modern technology, material, and available funds, many projects failed to be completed on schedule and resulted in a huge waste of human and capital resources. Facing these problems, the Third Plenum of the Eleventh CCP Central Committee decided to significantly revise the Ten-Year Plan in December 1978 and introduced the new eight-character program. 4/ In addition, they substituted a new 3-year adjustment plan (1979-81) for the Ten-Year Plan.

The Three-Year Adjustment Plan.--Under the 1979-81 adjustment plan, capital expenditures and planned output targets were lowered substantially compared with those in the Ten-Year Plan. For instance, the 1980 output

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1/ The 1982 grain figure is from U.S. Department of Agriculture, China, World Agriculture Regional Supplement: Review of 1982 and Outlook for 1983, June 1983, p. 1.

2/ Peking Review, Mar. 10, 1978, pp. 21 and 22.

3/ The New York Times, Feb. 8, 1979, p. A12.

4/ People's Daily, Nov. 23, 1979. For discussion of the new eight-character program, see p. 1.

target for steel was set at only 33 million tons, 1.4 million tons less than the target for 1979. 1/ In the new plan, the output of steel in 1985 was expected to be 45 million tons, 15 million tons less than the Ten-Year Plan's target. On implementation, construction of 348 large- and medium-sized projects was suspended, and 4,500 small projects were scrapped. 2/ Most suspended projects were in the metallurgical, chemical, and machine-building industries. As a result of the decision made by the Third Plenum of the Eleventh CCP Central Committee in December 1978, the budgets for consumption goods and for capital investment in textile and light industries were not cut. 3/ On the contrary, state loans for textile and light industry increased to Y2.0 billion ($1.2 billion). In addition, $300 million was allocated for importing machinery and raw materials. Before the completion of the adjustment plan period, Deng Xiaoping elevated one of his long time comrades--Zhao Ziyang-to the premiership in September 1980. By that time, the State Planning Commission had already completed an outline of the Sixth Five-Year Plan.

Economic growth and investment.--Overall, the economic results during the period of the Fifth Five-Year Plan were good. The annual growth rate for the gross value of industrial and agricultural production was 8.0 percent. The annual growth rates of agriculture and industry were 4.9 percent and 9.2 percent, respectively. National income increased from Y250.5 billion ($161.6 billion) in 1979 to Y366.7 billion ($246.1 billion) in 1980. 4/ The annual growth rate of agriculture was higher than that of the Fourth Five-Year Plan period. The increase in the growth rate might have resulted from the new agricultural policies implemented during 1976-80. 5/ The share of agriculture in gross value of industrial and agricultural production declined slightly from 25.6 percent in 1975 to 24.6 percent in 1980. For the same period, the share of light industry rose from 30.9 percent in 1975 to 35.4 percent in 1980. The decision to increase consumption goods, which was made at the Third Plenum, seemed to contribute to the increase in the share of light industry. The abandonment of the Ten-Year Plan apparently did not have any adverse effects on economic growth.

1/ New China News Agency, Beijing, Apr. 15, 1980.

2/ Ibid.

3/ Actually, textiles are a part of China's light industry. However, in any Chinese economic literature, textiles and light industry are listed separately.

4/ The values of national income are in current prices. Figures in this paragraph are from the Statistical Yearbook of China 1983.

5/ A number of new agricultural policies were promulgated and implemented during the 5-year period. In 1979, for instance, the proportion of surplus grains required to be sold to the State was reduced from 90 to 70 percent. For a complete list of new agricultural policies, see various issues of the U.S. Department of Agriculture, Agricultural Situation: People's Republic of China.

The Period of the Sixth Five-Year Plan, 1981-85

Late in 1979, after the Ten-Year Plan was discredited, the State Planning Commission began to prepare the Sixth Five-Year Plan. After several revisions, it was finally approved by the Fifth Session of the Fifth National Congress on December 10, 1982. 1/ It is the first plan under the leadership of Deng Xiaoping, Hu Yaobang, and Zhao Ziyang, who established the guidelines for the planners. Compared with the previous plans, the Sixth Five-Year Plan is characterized by moderate growth targets, comprehensive coverage of sectors of the economy, and reliance on foreign capital and technology. The plan stresses quality control, consumers' needs, and energy conservation. It appears that most targets in the plan can be fulfilled.

Planned growth rates

Macroeconomic targets.--The long-term development objective of the People's Republic of China, as given by the CCP General Secretary Hu Yaobang, is to quadruple the gross value of industrial and agricultural production by the year 2000. According to Premier Zhao's two-stage strategy for attaining the objective, the first stage (1981-90) is to lay a solid foundation for economic development. During this stage a relatively low growth rate is planned. Zhao believes that after completing the solid foundation, a high growth rate will be achieved in the second stage (1991-2000). In accordance with Zhao's strategy, the Sixth Five-Year Plan calls for a 4-percent growth rate for gross social product, which consists of production of agriculture, industry, construction, transportation, and commerce. 2/ The growth rates for national income, and gross value of industrial and agricultural production are also set at 4 percent, as shown in table 7. However, the growth rate for light industry is set at 5 percent, and the growth rate for heavy industry is set at 3 percent. It is expected that in 1985, the gross output value of light industry will exceed that of heavy industry.

Microeconomic targets.--In addition to the growth rates for the major sectors of the economy, the plan also sets the targets for selected industrial and agricultural commodities as shown in table 8. The target for grain output by 1985 is 360 million tons, which represents a yearly increase of 2.3 percent from the 321 million tons in 1980 (see table 8). The high growth rates for textiles reflect the Government's policy of increasing the output of consumption goods. A total of 3.59 million tons of yarn and 15.3 billion kilometers of cloth will be produced in 1985, up 22.5 and 13.6 percent, respectively, from outputs in 1980. The target for steel output by 1985 is 39 million tons, representing an increase of 5 percent over output in 1980. The

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1/ English excerpts of the plan were printed in Beijing Review, May 23, 1983, pp. I-XVI. The plan consists of two main parts: economic development and social development. This study deals mainly with the part on economic development.

2/ For definitions of gross social product, national income, and other Chinese economic terms, see the explanatory notes in app. B. In Chinese terminology, gross value of production includes both input and output values.

Table 7.--Planned annual growth rates of selected sectors of China's economy during the Sixth Five-Year Plan

Item	1980 actual output	1985 planned output	Planned annual growth rate	1983 actual output
	---Billion yuan--		Percent	Billion yuan
Gross social product	1/ 850.0	1,030.0	2/ 4.0	1,105.2
National income	366.7	445.0	4.0	467.3
Gross value of industrial and agricultural production	715.9	871.0	4.0	920.9
Agricultural production	218.7	266.0	4.0	312.1
Industrial production	497.2	605.0	4.0	608.8
Light industry	233.3	298.0	5.0	295.4
Heavy industry	263.9	307.0	3.0	313.4

1/ All outputs are in billions of yuan at 1980 constant prices. There are small differences between the announced planned growth rates and growth rates calculated from actual 1980 output and announced planned output for 1985. For instance, the calculated growth rates for gross social product and for heavy industry are 3.91 and 3.07 percent, respectively.

2/ Definitions of the Chinese economic terms used in this report are given in app. B.

Source: The 1980 actual and 1985 planned figures are from the Sixth Five-Year Plan. The 1983 actual figures are from People's Daily, Apr. 30, 1984, p. 2. The State Statistical Bureau released the 1983 figures on Apr. 29, 1984. Gross values of agricultural and industrial production, 1952-83, are included in table B-5 in app. B.

energy industry complex (coal, petroleum, natural gas, and electricity) is the core of the development plan. The planned total national output of standard coal in 1985 is 682.9 million tons. This represents an increase of 45.7 million tons over output in 1980 and an annual growth rate of 1.4 percent. However, the negative growth rates of crude oil and natural gas could be a major obstacle to the long-range objective of quadrupling output. The volume of railway freight by 1985 is expected to be 660 billion ton-kilometers, which represents a 15.6-percent increase over the volume in 1980 (table 8). According to the plan, concentrated efforts will be made to strengthen telephone services in cities, especially downtown telephone lines, and to raise the international telecommunications capacity.

Table 8.--Actual output in 1980, planned output in 1985, and growth rates for selected commodities

Item	1980 actual output	1985 planned output	Planned annual growth rate	1983	
				Actual output	Share of output fulfilled
			Percent		Percent
Grains--------million tons--	320.56	360.00	2.3	387.28	108
Cotton----------do----	2.71	3.60	5.8	4.64	129
Oil-bearing crops-----do----	7.69	10.50	6.4	10.55	101
Sugar crops----------do----	29,110	46,700	9.9	40,323	86
Cigarettes---million cases--	15.15	20.00	5.7	-	-
Cotton yarn----------do----	2.93	3.59	4.1	3.27	91
Cotton cloth billion meters--	13.47	15.30	2.6	14.88	97
Wool fabric million meters--	101.12	180.00	12.2	143.00	79
Beer million tons--	0.69	2.00	23.7	1.63	82
Energy industry complex:					
Coal, raw---million tons--	620	700	2.5	715.00	102
Crude oil----------do----	106	100	-1.2	106	106
Natural gas million cubic meters--	14,276	10,000	-7.4	12,210	122
Power--------billion kWh--	300.6	362.0	3.8	351.4	97
Total---million tons of standard fuel and coal----------	637.2	682.9	1.4	-	-
Steel---------million tons--	37.14	39.00	1.0	40.02	103
Pig iron----------do----	38.0	34.5-35.1	-(7.7-9.3)	37.38	
Alloy steel----------do----	1.84	3.00	10.3	-	
Chemical fertilizer do----	12.3	13.4	1.7	13.80	103
Ethylene----------do----	0.49	0.70	7.4	0.65	93
Plastics----------do----	0.90	1.05	3.1	1.12	107
Synthetic rubber------do----	0.12	0.17	7.2	-	-
Cement--------million tons--	79.7	98.0	4.2	108.25	110
Building construction million square meters--	-	700	-	-	-
Railroad freight billion ton/km--	570.9	660.0	2.9	664.6	101
Ship freight----------do----	473.3	566.1	3.6	578.8	102
Freight handled by coastal ports-------million tons--	217	260	3.7	250	96
Highway freight million ton/km---	538	650	3.9	-	-
Air freight million ton/km--	429	800	13.3	-	-
Postal and telecommunication service million yuan--	1,860	2,370	5.0	2,230	94

Source: The 1980 actual and 1985 planned figures are from the Sixth Five-Year Plan, Chinese edition. The 1983 actual figures are from People's Daily, Apr. 30, 1984. The State Statistical Bureau released the 1983 figures on Apr. 29, 1984, p. 2.

Planned investment

In order to achieve the growth rates given in the plan, the Government will increase its expenditures from Y121.2 billion in 1980 to Y130.4 billion in 1985. In the 5 years, State expenditures will total Y609.8 billion, including Y583.6 billion from domestic sources and Y26.2 billion from foreign sources. These expenditures will be allocated to the basic development projects. About 59 percent of the total expenditure, or Y360 billion, is being spent for investment in fixed assets. The total investment expenditure includes Y230.0 billion for capital construction and Y130.0 billion for updating and rebuilding equipment and facilities. 1/

The capital construction for different sectors is listed in table 9. Of these sectors, energy, communications, and transportation are high priorities. Other sectors that will receive special attention are agriculture, textiles and other light industries, the metallurgical industry, the chemical industry, the building material industry, education, science, culture, public health services, urban public utilities, commerce, and foreign trade. The investment funds are distributed in accordance with the following established priorities. The energy-industry complex will receive Y58.63 billion, or 25.5 percent, of the total capital construction expenditure. Communications and transportation services will receive Y29.83 billion, or 13.0 percent, of which Y17.29 billion is earmarked for railroads. The textile and other light industries will receive Y13.98 billion, or 6.1 percent. As in the First Five-Year Plan, the agricultural sector is given relatively little attention. Only Y14.13 billion, or 6.2 percent, of the total investment expenditure is earmarked for agriculture.

The Y130 billion investment program for equipment updating and facility rebuilding is aimed at improving industry structure and product quality, replacing aged equipment and technology of the existing enterprises, and reducing pollution problems. The industries included in the equipment-updating and facility-rebuilding program are coal, petroleum, electric power, textiles, metallurgy, chemicals, building materials, communications, and transportation.

Planned construction projects

During the 5-year period, a total of 890 large- and medium-sized construction projects will be undertaken, of which 400 are to be completed. The remainder will be carried over for continued construction during the Seventh Five-Year Plan period (1986-90). The new construction projects for the energy industry complex include 101 coal pits, 10 hydroelectric power

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1/ This investment expenditure includes depreciation and replacement. By using a simple statistical method, this study found that the cumulative multiplier coefficient of China's economy is 5.41, i.e., a typical Y1.00 investment results in an increase of Y5.41 in national income within a 5-year period.

Table 9.--Capital construction for selected sectors during the Sixth Five-Year Plan period

Item	Distributed fund	Share of total investment fund
	Billion yuan	Percent
Energy industry complex:		
Coal	17.93	7.80
Petroleum	15.47	6.73
Electric power	20.73	9.01
Energy-saving activities	4.50	1.96
Total	58.63	25.50
Communications and transportation:		
Railroad	17.29	7.52
Civil aviation	.58	.25
Other transportation facilities	9.61	4.18
Post and telecommunications services	2.35	1.02
Total	29.83	12.97
Agriculture 1/	14.13	6.14
Textile and other light industry	13.98	6.08
Lumber and building material industries	7.28	3.17
Metallurgical industry	17.51	7.61
Chemicals	11.43	4.97
Geological explorations	1.49	.65
Machine-building	2.89	1.26
Other industries	8.46	3.68
Science, education, and health services	9.43	4.10
Development of Commerce and foreign trade	6.26	2.72
Housing for workers, urban public utilities and environmental protection	17.88	7.77
Earthquake rehabilitation, support for underdeveloped areas and other projects	30.80	13.39
Grand total	230.00	100.00

1/ Agriculture means the entire agricultural sector, including agriculture, forestry, water conservation, and meteorological services.

Source: The Sixth Five-Year Plan.

stations, 27 thermal power stations, 1/ and a number of oil drilling facilities that will increase production capacity for crude oil by 35 million tons. In the textile industry, 12 chemical fiber projects, 6 cotton-spinning plants, and 6 wool-spinning plants will be built or completed. In the building materials industry, 25 cement factories will be built. In the metallurgical industry, priority will be given to the first stage construction of the Baoshan steel complex. The blast furnaces of this complex will start operation in 1985 with an initial production capacity of 3 million tons of iron, 3 million tons of steel, and 0.5 million tons of seamless steel tubes. For the railroad industry, the plan provides for laying 2,067 kilometers of rails, electrifying 2,511 kilometers of rails, and double tracking 1,689 kilometers of existing railways. Although the plan calls for expansion of production capacities of the chemical and other light industries, it does not mention whether new plants will be established. The planning authorities are not sure whether the Y230 billion investment in capital construction is sufficient for these 890 large-sized and medium-sized projects. Therefore, they selected 120 out of the 890 projects as key construction projects which have the first priority in receiving building materials and other resources.

Key construction projects

Of the 120 key construction projects, 70 were under construction in 1983, and the rest will be started in 1984. Of these 70 projects, 21 will be built either with foreign capital or with complete sets of equipment introduced from abroad. All the projects will be provided with new equipment and advanced technologies, and one-third of this technical equipment will be imported from foreign countries. Most key projects involve energy and transportation, which have been major priorities on Premier Zhao's list of strategic industries in the Sixth Five-Year Plan. There are 22 key projects which support the increase in energy output and 17 key projects that aim at the expansion of transportation facilities (table 10). Every key project is costly. For each of 33 projects, investment has exceeded Y500 million ($260 million at 1982 prices), and in 10 of these, it exceeded Y1.0 billion ($521 million in 1982 prices) each.

1/ The new nuclear power plant project to be located in Guangdong Province, which is still under negotiation between China, France, and the United Kingdom, is not included in the plan. For a detailed analysis of China's energy industry complex, see Edmond Chin's "China: Overview of the Mining Industry," an unpublished paper of the U.S. Bureau of Mines, July 1984.

Table 10.--Types and locations of China's 70 key construction projects under the Sixth Five-Year Plan

Industry/ project number:	Location (Province/principles)	Nature of project
Coal:		
1	Shanxi Province	Gujiao mining area.
2	Shanxi Province	Datong mining area.
3	Inner Mongolian Autonomous Region.	Huolinhe mining area.
4	Liaoning Province	Tiefa mining area.
5	Anhui Province	Huainan mining area.
6	Anhui Province	Huaibei mining area.
7	Shandong Province	Yanzhou mining area.
8	Henan Province	Pingdingshan mining area.
Petroleum:		
9	Heilongjiang Province	Daqing ethylene petrochemical complex.
Power:		
10	Jilin Province	Baishan hydropower station.
11	Hubei Province	Gezhouba hydropower station.
12	Hunan Province	Dongjiang hydropower station.
13	Qinghai Province	Longyangxia hydropower station.
14	Guizhou Province and Guangxi Zhuang Autonomous Region.	Tianshengqiao hydropower station.
15	Shanxi Province	Datong thermal power plant.
16	Hebei Province	Third phase project of the Douhe thermal power plant
17	Inner Mongolian Autonomous Region.	Tongliao thermal power plant.
18	Liaoning Province	Jinzhou thermal power plant.
19	Heilongjiang Province	Hulan Ergi No. 2 thermal power plant.
20	Zhejiang Province	Taizhou thermal power plant.
21	Beijing-Datong	500,000 extra-high-voltage transmission and transformer project.
22	Yuanbaoshan-Haicheng	500,000 extra-high-voltage transmission and transformer project.
Railways:		
23	Lanzhou-Zhengzhou	Electrification of the line.
24	Beijing-Baotou	Electrification and double tracking the line.
25	Taiyuan-Jiaozuo	Electrification and double tracking the line.
26	Guiyang-Kunming	Electrification of the line.
27	Beijing-Qinhuangdao	Electrification and double tracking the line.
28	Qingdao-Jinan	Double tracking the line.
29	Anhui-Jiangxi	A new railway.
30	Taiyuan-Fenglingdu	Double tracking the line.
31	Yanzhou-Shijiusuo	A new railway.

Table 10.--Types and locations of China's 70 key construction projects under the Sixth Five-Year Plan--Continued

Industry/ project number	Location (Province/principles)	Nature of project
Ports:		
32	Hebei Province	Qinhuangdao port.
33	Tianjin	Tianjin port.
34	Liaoning Province	Yingkou port.
35	Shanghai	Shanghai port.
36	Jiangsu Province	Lianyun port.
37	Shandong Province	Shijiusuo port.
38	Guangdong Province	Huangpu port.
39	Guangdong Province	Zhanjiang port.
Post and telecommunications:		
40	Beijing	Beijing International Telecommunications Bureau.
41	Beijing	Dongdan Urban Telephone Bureau.
42	Beijing-Wuhan-Guangzhou	Medium-sized concentric cable.
Textiles:		
43	Beijing	Beijing chemical fiber plant.
44	Shanghai	Second phase construction of Shanghai petrochemical complex.
45	Jiangsu Province	Yizheng chemical fiber plant.
Light industry:		
46	Shandong Province	Yantai synthetic hides factory.
47	Yunnan Province	Kunming sodium triphosphate factory.
Iron and steel:		
48	Shanghai	First phase of the Baoshan iron and steel complex project.
Nonferrous metals:		
49	Shanxi Province	Shanxi aluminium plant.
50	Jiangxi Province	Yongping copper mine.
51	Guizhou Province	Guizhou aluminium plant.
Chemical industry:		
52	Beijing	Dongfang chemical plant.
53	Shanxi Province	Shanxi chemical fertilizer plant.
54	Zhejiang Province	Zhejiang Chemical fertilizer plant.
55	Xinjiang Uygur Autonomous region.	Xinjiang chemical fertilizer plant.
56	Guangdong Province	Yunfu sulphur mine.

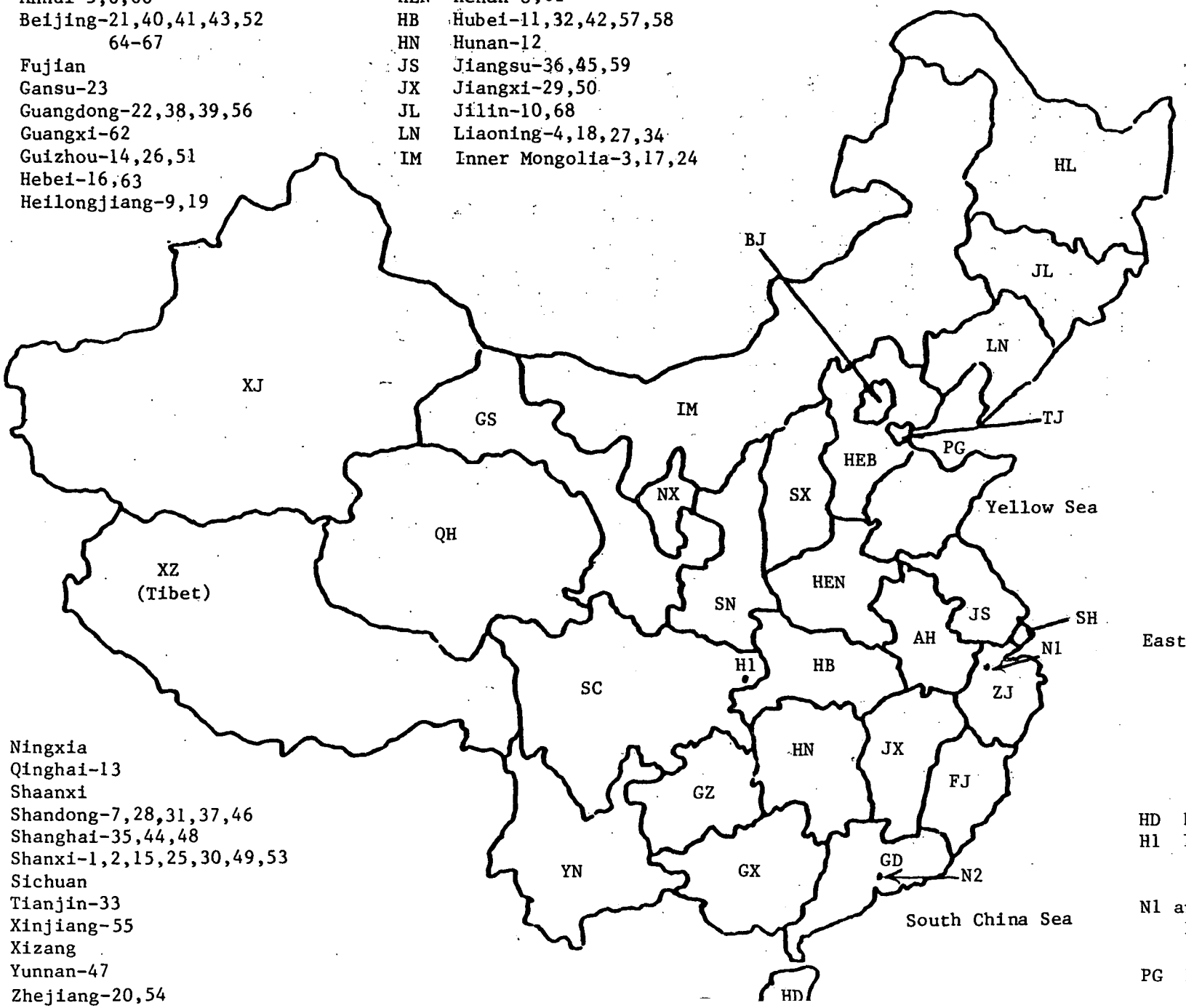
Table 10.--Types and locations of China's 70 key construction projects under the Sixth Five-Year Plan--Continued

Industry/ project number	Location (Province/principles)	Nature of project
Building materials:		
57	Hebei Province	Jidong cement plant.
58	Hebei Province	Yaohua glass factory.
59	Jiangsu Province	Huaihai cement plant.
60	Anhui Province	Ningguo cement plant.
61	Henan Province	Luoyang glass factory.
62	Guangxi Zhuang Autonomous region.	Nanning glass factory.
Water conservation:		
63	Hebei Province	Southern water diversion project of the Luanhe River.
Meteorology:		
64	Beijing	Meteorological satellite ground receiving and processing system.
Culture:		
65	Beijing	New Beijing Library.
Public health:		
66	Beijing	Sino-Japanese Friendship Hospital.
Broadcasting:		
67	Beijing	Beijing color TV center.
Motor-vehicle industry:		
68	Jilin Province	Changchun No. 1 motor-vehicle plant.

Source: Lin Fatang, "Key Projects During Sixth Five-Year Plan," Beijing Review, Jan. 9, 1984.

Note.--Lin did not give the locations of the two projects listed as others in his article. For geographic sites of the key projects, see the figure on p. 36.

Figure.--Location of China's key development projects and planned power plants.



Of the 13 dams under construction, the Longyangxia hydropower station on the upper reaches of the Huanghe (Yellow) River will be the highest in China. The planned station will stand 177 meters tall and will generate 6 billion kilowatt hours annually. 1/

The expansion and modernization of harbors are in response to the rising volume of foreign trade. More than Y100 million in foreign loans has been spent to import special equipment for construction work on the Shanghai harbor alone. Foreign loans and equipment have also been used for projects in other industries.

One of the six projects in the building materials industry is the Jidong cement plant. The major equipment for the plant was imported from Japan. With its planned production capacity of 1.55 million tons per year, the plant will be the largest in the country. Of the five projects in the chemical industry, three will produce chemical fertilizers. The Dongfang chemical plant will produce mainly acrylic and acid esters. A new chemical fertilizer unit that is expected to produce an annual output of 300,000 tons of synthetic ammonia and 520,000 tons of urea will be added to the Zhenhai petrochemical plant. The key project in the downstream sector of the petroleum industry is the Daqing ethylene petrochemical complex. According to the plan, the complex will be able to produce 300,000 tons of ethylene a year and will increase China's ethylene production capacity by 54 percent.

It is questionable whether the planned production capacities of the industries can be realized after completion of the key construction projects. A major problem is that production of the inputs which are needed to produce the outputs of the expanding industries, such as raw materials and fuel, must be increased at greater rates than outputs. 2/ All of these production targets are designed to quadruple the gross annual value of industrial and agricultural production by the end of this century. Some planners privately doubt whether the objective can be achieved. The quadrupling has become a common goal for all industries. As announced by Chen Muhua, Minister of Foreign Economic Relations and Trade, the total volume of foreign trade will also be quadrupled by the year 2000. This objective is relatively easier to achieve than the quadrupling of the gross value of industrial and agricultural production.

1/ Lin, op. cit., p. 23.

2/ For instance, if the output of steel is quadrupled, the total requirement for fuel to produce steel must be more than quadrupled, because fuel is also needed to produce fuel. According to The Input-Output Structure of the U.S. Economy, 1972, published by the U.S. Department of Commerce in February 1979, $0.04132 of crude oil and natural gas is expended in producing 1 dollar's worth of crude oil and natural gas for final demand.

Some Problems in China's National Income Accounting

An understated income

The Chinese national income accounting system is mainly a reproduction of the Soviet system. It has three major economic indicators: gross social product, gross value of industrial and agricultural production, and national income. 1/ Each of these measures is concerned with material output. Like other Communist countries, China does not include the services of lawyers, teachers, barbers, and other nonproductive workers as defined by Karl Marx. Tourist services are also not included. 2/ Exclusion of services from its national income means that the Chinese per capita income is understated. In particular, for purposes of international comparisons, the Chinese national income should be adjusted by these services, and the per capita income should be inflated accordingly.

Artificial price indexes

Another problem is measuring prices. Virtually all prices are set by the different departments of the Government. These prices do not reflect relative costs or relative scarcities. The set prices may be higher or lower than those that would prevail if China had a free-market economy. In the agricultural sector, the Government purchases the surplus output (the portion of output exceeding the required quota) at prices higher than the price paid by Chinese consumers. In the industrial sector, the Government subsidizes producers. The Government spends billions of yuan each year to support its pricing policy. 3/ Another result of the pricing policy is that price indexes are independent and not correlated with each other. For instance, the general index of purchase prices of farm and sideline products increased from 100 in

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1/ Gross social production refers to the sum total of gross output of China's economy, in value terms, created during a year in the following material production sectors: industry, agriculture, construction, transport, and commerce. Gross value of industrial and agricultural production refers to the sum of gross output value of industry and gross output value of agriculture. Both are parts of gross social product. National income refers to the newly created value (value added or net value) in a given period by workers engaged in material production sectors of the country. It is the sum of the net output value of agriculture, industry, construction, transport, and commerce obtained by deducting material consumption of those sectors from the gross social product.

2/ For other nonproductive services, see Guangyuan Yu's article entitled "Ought Service to be Included in the Statistics of Social Production Results or Not," in Economic Research (Jingji Yanjiu), July 1983, pp. 24-37. Yu interpreted Marx's nonproductive labor and the surplus value and reached the conclusion that the services should not be included in national income accounts.

3/ In the summer of 1984, Xue Muqiao suggested elimination of this spending by permitting price changes. On Oct. 20, 1984, the CCP Central Committee decided to relax price controls. For details on China's recent decision on price controls and economic reform, see Foreign Broadcast Information Service, Daily Report: China, Oct. 22, 1984, pp. K1-K9.

1950 to 307.8 in 1982. For the same period, the general index of ex-factory prices of industrial products decreased from 100 to 83.4. 1/ Caution should be used when using these price indexes for research.

A stagnant technology

The problem of price setting in a nonmarket economy is understandable. A problem which is hard to understand is the increasing ratio of China's gross value to net value of the national output. According to Chinese official statistics, the ratio of gross value of national output to net value of national output increased from 1.556 in 1949 to 2.365 in 1983. 2/ There are a number of factors that may affect the ratio, such as changes in product quality, production specialization, technology improvement, and depreciation methods. In particular, technological progress should tend to reduce the ratio. During the past years, the growth rates of gross social product and gross value of industrial and agricultural production were higher than those of national income, as shown in table 11. Thus, the ratio of gross value to net value has been increasing.

Table 11.--Annual growth rates of China's major economic indicators, by planning periods, 1953-80

(In percent)

Period	National income	Gross social product	Gross value of industrial and agricultural production
First Five-Year Plan, 1953-57	8.9	11.3	10.9
Second Five-Year Plan, 1958-62	-3.1	-0.4	0.6
Adjustment Period, 1963-65	14.7	15.5	15.7
Third Five-Year Plan, 1966-70	8.3	9.3	9.6
Fourth Five-Year Plan, 1971-75	5.5	7.3	7.8
Fifth Five-Year Plan, 1976-80	6.2	8.0	8.0

Source: Shuguang Zhang, "On the Synchronous Increases of National Income With Gross Social Product, and Gross Value of Industrial and Agricultural Production," Economic Research, March 1984, pp. 26-31.

1/ See China's price indexes in table B-6.

2/ According to Yichu Ma's estimates in 1957, net value, or value added, of China's industrial production was 34.3 percent of its gross value; and net value of China's agricultural production was 73.5 percent of its gross value. For the method of his estimation, see his article entitled "New Essays on Population," People's Daily, July 5, 1957. For China's gross social product, 1952-82, see table B-5.

In its Sixth Five-Year Plan, China adopted the concept of synchronous increases, which call for the same growth rate for gross social product as for net national income. 1/ The concept has been discussed by Chinese economists for years. China has also adopted the four modernizations, which require technological progress. However, such technological progress would tend to cause a decrease in the ratio of gross social product to net national income. Thus, the goal of sychronous increases in gross social product and net national income appears to conflict with the goal of technological progress.

As the economic development plan calls for foreign investment and technology importation, an understanding of the foreign sector of the Chinese economy is essential for assessing the economic effects of the plan on U.S.-Chinese trade.

1/ For explanations of the synchronous increases, see Shuguang Zhang, op. cit.

CHAPTER 3. FOREIGN TRADE OF THE PEOPLE'S REPUBLIC OF CHINA

This chapter analyzes foreign trade of the People's Republic of China, with special emphasis on bilateral trade between the United States and China during 1978-83. The chapter consists of three sections. Section 1 examines China's foreign trade for the period from 1949 through 1978, and section 2 examines China's foreign trade since 1979. Section 3 provides a discussion of the problems involved with U.S.-Chinese bilateral trade.

The Chinese authorities have for years accepted the idea that trade is the engine of economic growth. 1/ However, various international events and domestic disputes have hampered development of China's political and economic relations with other countries. The Korean conflict reduced the volume of trade between China and the West to a very low level. The long-time ideological disputes and border controversy between China and the Soviet Union in the Heilongjiang and Xinjiang areas resulted in a termination of economic cooperation between the two countries. Policy disputes among the leadership also at times have been an obstacle to economic development and foreign trade. The radicals do not trust any management systems used in a capitalist economy, 2/ and are wary that financial dependence upon foreign countries could lead to political dependence as well. They doubt that the open-door policy advocated by the Deng administration could result in any meaningful economic growth in a socialist economy. Before the death of Mao in 1976, they attacked the Deng faction vigorously. As a result of their efforts, under Mao's administration, foreign trade did not play a major role in the development of China's economy.

The situation has changed since December 1978, when Deng and his supporters successfully gained control of the Third Plenum of the Eleventh CCP Central Committee and decided to use foreign technology and loans for economic development. Since then, the volume of China's foreign trade has grown dramatically. This does not imply that Government authorities were previously unaware of the close relation between economic growth and trade. In fact, the Government assigned foreign trade a critical role in industrialization through the importation of machinery, equipment, and materials in their First Five-Year Plan. However, owing to political considerations, they did not allow trade to fulfill this role. Instead, their commercial policy was strongly influenced by political goals. 3/ Their policy of integrating

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1/ As pointed out by the late Minister of Foreign Trade, Yeh Chi-chung, in his speech delivered at the Second Session of the First National People's Congress in July 1955, "Export is for the sake of import, which, in turn, is for the socialist industrialization of our country." Zhou Enlai also repeatedly indicated that foreign technology was needed for the four modernizations.

2/ While visiting Japan in November of 1983, General Secretary Hu Yaobang indicated in a press conference that over 98 percent of the Chinese people supported China's current policies. It meant that fewer than 20 million people did not support the policies. For details on the press conference, see Foreign Broadcast Information Service, Daily Report: China, Nov. 29, 1983, pp. D2 and D3.

3/ The Government did not give up this policy although it was eased to some extent. Before leaving New York on Jan. 15, 1984, Premier Zhao said: "Americans often say business is business. But you would probably also agree that it is very difficult to separate completely economic relations from political relations between the two countries. While the two can promote each other, they can also impede each other."

foreign commercial and diplomatic relations hampered trade and delayed economic development, especially during the period 1950-1972.

China's Foreign Trade, 1950-71

Even though Chinese Communists accept Ricardo's labor theory of value, they have not accepted Ricardo's concept of comparative advantage. 1/ Also, although they believe that foreign trade is necessary to the development of the Chinese economy, they link foreign trade with the international political struggle. 2/ The Korean conflict damaged China's diplomatic and trade relations with the West. As a result, China's international trade during the 1950's was restricted mainly to trade with other Communist countries.

The lean-to-Communist-bloc period (1950-59)

In response to continuous military and economic aid from the Soviet Union, Mao Zedong announced his lean-to-one-side policy in June 1949 by saying "we belong to the side of the anti-imperialist front headed by the Soviet Union and so we turn only to this side for genuine and friendly help." 3/ With the help of Stalin, whom he admired and trusted, Mao acquired virtually all of mainland China by December 1949. In October 1950, he sent hundreds of thousands of Chinese to fight against the United Nations forces in Korea. This act resulted in termination of China's trade relations with most Western countries. 4/ With little alternative, Mao strengthened his ties with Stalin and continued his lean-to-one-side trade policy, which made the Soviet Union China's top trade partner throughout the 1950's.

Trade with Communist countries.--During 1950-59, the total trade turnover of the People's Republic amounted to $27.55 billion, of which $13.16 billion, or 47.8 percent, was the amount of the bilateral trade between China and the

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1/ For a detailed explanation of Ricardo's theory of comparative advantage, see Ricardo, Principles of Political Economy, 1817, reprinted by Penguin, New York, 1971, ch. 7.

2/ In his book entitled The Foreign Trade of China: Policy, Law, and Practice, (Berkeley and Los Angeles: University of California Press, 1977), p. 9, G.T. Hsiao stated: "As a Chinese textbook relates, foreign trade is also a weapon of international political struggle. The ruling class of each nation always uses foreign trade to protect its own interests, with the result that the conduct of foreign trade expresses itself in various forms of political and economic struggles."

3/ In his speech, "On People's Democratic Dictatorship," delivered to the Sixth Session of the seventh CCP Central Committee in June 1949, Chairman Mao ruled out the possibility of British or American aid and emphasized a dependence on the Communist bloc leader. The speech was included in his Selected Works, vol. 4, p. 417.

4/ In December 1950, the U.S. Government imposed a total embargo on American trade and payment transactions with China. In May 1951, the U.N. General Assembly adopted a resolution recommending that every country impose an embargo on shipments of military weapons and strategic materials to areas under the control of China and the Democratic People's Republic of Korea.

Soviet Union. 1/ This bilateral trade volume increased from $338 million in 1950 to $2.08 billion in 1959. China's exports to the Soviet Union rose from $153 million in 1950 to $1.1 billion in 1959, and its imports increased from $185 million to $979 million for the same period. Except for 1957, 1958, and 1959, the Soviet Union ran a surplus in its trade with China. According to the First Five-Year Plan, the Soviet Union agreed to help China build 156 construction projects. Thus, the deficit in China's trade balance with the Soviet Union is understandable. More than 70 percent of China's exports were primary and processed agricultural commodities, and more than 80 percent of China's imports were capital goods. The commodity composition of China's world trade was similar to that of China's bilateral trade with the Soviet Union.

In addition to the Soviet Union, China traded with eight other Communist countries during the 1950's--East Germany, Czechoslovakia, Poland, the Democratic People's Republic of Korea, Hungary, Romania, Yugoslavia, and Albania. During the decade, the volume of China's bilateral trade with Romania, Yugoslavia, and Albania was less than 1 percent of China's total foreign trade. The trade share of East Germany was 5.5 percent, Czechoslovakia 4.4 percent, Poland 2.4 percent, the Democratic People's Republic of Korea 2.1 percent, and Hungary 2.0 percent. In all, the nine Soviet bloc nations accounted for 65.3 percent of China's total trade. The relatively high level of trade with the Soviet bloc nations was part of the First Five-Year Plan.

According to the First Five-Year Plan, the three main goals of foreign trade were (1) to strengthen economic cooperation with the socialist bloc headed by the Soviet Union; (2) to expand China-Soviet bilateral trade; and (3) to steadily increase the volume of trade with other Communist countries besides the Soviet Union. 2/ The plan set the increase for China's trade with Communist countries at 65.5 percent over the 5 years. China's trade with these countries actually increased from $1.95 million in 1952 to $4.38 million in 1957, or by 223 percent. The actual increase thus exceeded the planned increase by more than threefold. The plan also called for trade with Asian countries under conditions that were consistent with China's foreign policy.

Trade with Asian countries.--Hong Kong was China's second largest trade partner, next to the Soviet Union. During the 10-year period, bilateral trade between the Hong Kong-Macau area and China accounted for 9.6 percent of

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1/ All trade figures of this chapter are from the Statistical Yearbook of China 1981 and the Statistical Yearbook of China 1983, unless stated otherwise. For the composition of China's imports and exports and exchange rates, 1950-82, see tables B-7 and B-8; for bilateral trade between China and the Soviet Union, 1952-82, see table B-9; for China trade with selected Communist countries in the same period, see table B-10.

2/ The First Five-Year Plan, Chinese edition, p. 109. The plan indicated that economic cooperation would enable China to obtain huge technical aid from the Soviet Union and insure China's socialist industrialization. The plan was a significant step in China's economic development.

China's total trade. 1/ The Korean conflict seemed to have no adverse effect on this bilateral trade, which increased from $164 million in 1950 to $304 million in 1951. Allied trade with China, particularly through the British colony of Hong Kong, triggered the embargo controversy between the United States and the United Kingdom. It was the British position throughout the war period that trade with China was essential for the survival of Hong Kong. 2/ The embargo was most effective in 1952, when imports from Hong Kong-Macau dropped to $135.1 million. After the Korean conflict, imports from the two cities declined sharply, from $122 million in 1953 to $20.5 million in 1959. This decline of imports was caused mainly by a decrease in China's demand for war supplies. The annual amount of China's exports to the cities ranged from $130 million in 1953 to $214 million in 1958. It is clear that China was able to circumvent the allied blockade to some extent and to obtain hard currency by trading with these two cities in the 1950's.

In 1954, China announced its first formal trade policy, the Five Principles of Peaceful Coexistence, by signing a trade agreement with India. The five principles are mutual respect for each other's territorial integrity and sovereignty, nonaggression, noninterference in each other's internal affairs, equality and mutual benefit, and peaceful coexistence. Although India had never been an important trading partner for China (the largest annual two-way trade occurred in 1952 and was less than $40 million), China took the opportunity to make clear its trade policy to the world. The Five Principles of Peaceful Coexistence underlie China's political and economic relations with other countries. Some scholars believe that by developing these principles, China was able to take a leading role in the 1955 Asian-African Conference at Bandung, Indonesia, which helped to improve its trade relations with the developing nations and to give China a leadership role among them. 3/

1/ Macau is a Portuguese colony near Hong Kong. In Chinese official statistics, Hong Kong and Macau are combined into one area. It is estimated that about 6 percent of the bilateral trade between China and Hong Kong-Macau was trade with Macau. The recently published values of this bilateral trade are higher than the earlier estimates. In 1951, for instance, Hong Kong exports to China amounted to HK$1,602 million (equivalent to $267 million), according to Hong Kong Trade Statistics (monthly), published by Hong Kong Census and Statistics Department. In an International Cooperation Administration report to the U.S. Congress, entitled Survey on East-West Trade, p. 80, the value of Chinese imports from Hong Kong and other Asian countries was estimated at $385 million, which was smaller than China's official value of imports from Hong Kong and Macau ($430 million).

2/ Alexander Eckstein, ed., China Trade Prospects and U.S. Policy, (New York: Praeger, 1971), pp. 16 and 17. In his famous "Old Soldier" speech to a joint meeting of Congress in April 1951, General Douglas MacArthur called for an intensification of the U.S. economic blockade against China and further called for the imposition of a naval blockade against the China coast. This desire for a blockade was not shared by the British Government. For bilateral trade between China and the Hong Kong-Macau area, 1952-82, see table B-9.

3/ Hsiao, op. cit., p. 31.

Although these five principles sound as though they are widely accepted, they are not the central concern of trade policies for all developed countries. For example, the Japanese trade policy is "separation of political affairs from economic affairs." The different policies were a major obstacle to Chinese-Japanese bilateral trade in the 1950's. For the period 1950-59, bilateral trade between China and Japan totaled $517 million, accounting for only 1.9 percent of China's total trade. 1/ The bilateral trade decreased from $47.2 million in 1950 to $4.4 million in 1952, before rising to a peak of $128.4 million in 1956. On May 2, 1958, the Nagasaki flag incident occurred. Two Japanese youths destroyed a Chinese flag at a Chinese postage stamp and paper-cutting exhibition sponsored by the Nagasaki chapter of the Japan-China Friendship Association. In response to the incident, the Chinese Government announced in May 1958 that they had no choice but to suspend trade relations with Japan to maintain the dignity of an independent sovereign state and to protect its rights. 2/ The announcement terminated official trade between the two countries. 3/

China also traded with a number of other Asian countries. During this period, the trade share of Sri Lanka was 1.79 percent, Malaysia 0.95 percent, Pakistan 0.92 percent, Singapore 0.51 percent, and Burma 0.48 percent. It was estimated that trade with Asian countries and non-Communist countries accounted for 25 to 28 percent of China's total trade. 4/

Trade with Western countries.--During the 1950's, the level of Chinese trade with Western countries was low compared with Chinese trade with Communist or Asian countries. The volumes of Chinese trade with Italy, France, Canada, Australia, and Switzerland were less than 1 percent of Chinese

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1/ For bilateral trade between China and Japan, 1952-82, see table B-9; for bilateral trade between China and other Asian countries, 1952-82, see table B-11.

2/ People's Daily, May 20, 1958.

3/ According to Chinese statistics, exports to and imports from Japan were zero in 1959. According to the United Nations' Yearbook of International Trade Statistics 1959, Japan's exports to China in 1959 were $3.6 million and imports were $18.9 million. These figures apparently came from Japan's Bureau of Statistics, the Office of the Prime Minister, Japan Statistical Yearbook, 1960. For 1956, China reported $63.7 million and Japan reported $67.3 million in Japanese exports to China. For 1957, China reported $55.1 million and Japan reported $60.6 million in Japanese exports to China. The U.N. reported zero Japanese exports to China for 1956 or 1957. The 1959 trade figures in the official Chinese statistics may have resulted from improper reporting by Chinese traders or from official policy not to recognize the existence of trade with Japan. For a detailed analysis of the Nagasaki flag incident and Chinese-Japanese trade, see G.T. Hsiao, "Nonrecognition and Trade: A Case Study of the Fourth Sino-Japanese Trade Agreement," Jerome A. Cohen, ed., China's Practice of International Law, (Cambridge: Harvard University Press, 1972), pp. 129-153.

4/ Based on official Chinese statistics.

total trade. The bilateral trade with West Germany accounted for 2.0 percent and the United Kingdom 3.7 percent of China's total trade. Chinese-U.S. bilateral trade declined from $238 million in 1950 to $0.2 million in 1953. 1/ Owing to the U.S. embargo, the bilateral trade between the two countries ceased during 1954-59. The U.S. embargo continued through the 1960's.

The self-reliance period (1960-71)

Ideological disputes and disagreements between Mao and Khrushchev over political and economic policies in the late 1950's culminated in an open break in relations between China and the Soviet Union. In August 1960, Moscow suddenly called back all of its technicians and advisers and suspended the supply of equipment and materials required for Chinese economic development projects. After losing its most valuable friend in the Communist world, China changed its foreign and economic policy to one of self-reliance. In foreign trade, the self-reliance policy meant balanced trade. The large trade deficit financed by Soviet loans in the 1950's did not occur again in the 1960's. Although self-reliance never meant autarky, it meant a reduced effort to seek foreign cooperation for economic development.

Trade with Communist countries.--Compared with the lean-to-Communist-bloc period, China's trade with the nine Communist bloc countries in 1960-71 declined sharply. China's total trade during the 12-year period amounted to $46.35 billion, of which 24.6 percent was trade with these nine Communist bloc countries. Bilateral trade with the Soviet Union accounted for 11.7 percent of China's total trade during this period, which was much lower than the 47.9 percent achieved during the 1950's. Despite their ideological differences, the two largest Communist countries have never completely suspended their trade. However, China's dependence on the Soviet Union for economic development was reduced substantially during the self-reliance period. Machinery and equipment needed for economic development projects were imported mainly from Japan and Western Europe.

China's trade with the other eight Communist bloc countries was also at a low level during the 12-year period. China's two-way trade with these countries amounted to $5.99 billion over the period, which was 12.9 percent of China's total trade. Shares of total trade with the Democratic People's Republic of Korea, Romania, and Albania increased and were 3.7, 1.8, and 1.8 percent, respectively, during this period, whereas the shares with the five other Communist bloc countries dropped sharply. Cuba, a new member of the bloc, was the second largest Communist trading partner during the 12-year period. During 1960-71, their bilateral trade reached $1.84 billion and accounted for 4.0 percent of China's total trade.

Trade with Asian countries.--Although China's trade with the Communist bloc contracted, its trade with Asian countries, especially with Japan, expanded. Since China was in need of Japanese capital goods for economic

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1/ For bilateral trade between China and the United States, 1952-82, see table B-9; for China's trade with other Western countries, see table B-12. During 1952-82, China's major Western trade partners included the United States, West Germany, the United Kingdom, Australia, Canada, France, Italy, and Switzerland.

development, Chinese-Japanese trade suspension begun in 1959 did not last long. The Chinese attitude began to soften in September 1960, when Premier Zhou Enlai laid down the Three Trading Principles and the Three Political Principles for Sino-Japanese Trade. 1/ Although his terms were not acceptable to the Japanese Government at that time, due to Japanese economic interests in Taiwan, Zhou opened the trade door by permitting trade through agreements with private firms friendly to China. Theoretically, the Chinese did not give up their Five Principles of Peaceful Coexistence, even though in their view Japan violated these principles by having diplomatic relations with Nationalist China in Taiwan. Trade between the two nations was private and not on an official basis. In December 1962, the two countries signed a semiofficial trade agreement providing trade in the amount of $50 million each way over the 5-year period (1963-67). 2/ According to official Chinese statistics, bilateral trade with Japan resumed in 1960, and it amounted to $0.19 million for that year. The bilateral trade during 1963-67 totaled $2.03 billion, much higher than the amount set in the trade agreement. In 1971, the bilateral trade soared to $876 million. During the self-reliance period, China's total imports from Japan amounted to $3.08 billion, and its exports to Japan were $1.87 billion. This bilateral trade accounted for 10.7 percent of China's total foreign trade. During this decade, Japan helped China develop the chemical fiber industry by exporting two complete sets of equipment for producing manmade fibers.

During the self-reliance period, the bilateral trade between China and the Hong Kong-Macau area was more stable than that of China and Japan. 3/ China's total trade with this area was $5.39 billion, or 11.6 percent of

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1/ The Trading Principles called for the conclusion of both governmental agreements and private contracts, and for special consideration in individual cases involving friendly Japanese firms. The Three Political Principles required the Japanese Government not to adopt a hostile attitude toward the Chinese Government, not to follow the United States in the "two China plot," and not to obstruct the normalization of Sino-Japanese relations. Premier Zhou unveiled these principles during an interview with Managing Director K. Suzno of the Japan Association for the Promotion of Japan-China Trade on Sept. 10, 1960. For a more detailed description on the trade agreement, see Hsiao, op. cit., pp. 50-59.

2/ Known as the Liao-Takasaki Memorandum, the trade agreement involved actions by both Governments. In August 1963, for instance, the Ikeda cabinet instructed the Government-owned Export and Import Bank of Japan to guarantee repayment by a Chinese textile company. The Japanese Government's involvement in the transaction caused a strong protest from the Nationalist Government in Taipei.

3/ Like in the lean-to-Communist-bloc period, about 6 percent of the bilateral trade occurred with Macau. The greater part of trade occurred with Hong Kong. In 1962, for instance, Hong Kong's trade with China amounted to $227 million, whereas Macau's trade was valued at $12.9 million.

China's total trade for the 12-year period. Annual exports to these two cities increased from $198 million in 1960 to $659 million in 1971, but imports from them decreased from $16.6 million to $11.6 million. Within the 12 years, China earned $5.07 billion from its trade surplus with this area. Hong Kong was a significant source of China's foreign exchange during this period, owing both to the huge trade surplus and to the remittances of overseas Chinese. Since China was the major food supplier to Hong Kong and Macau, the huge trade surplus is understandable.

During 1960-71, the volume of China's trade with other Asian countries (except Malaysia) increased compared with that of the lean-to-Communist-bloc period. The trade share of Singapore was 2.6 percent, Sri Lanka 1.7 percent, Pakistan 1.1 percent, Burma 0.7 percent, and Malaysia 0.5 percent during this period. China's imports from the five Asian countries were mainly consumption goods. Trade with these Asian countries had only a moderate effect on China's economic development.

Trade with Western countries.--Although its trade with Communist countries declined, China's trade with Western countries, except the United States, increased steadily over the self-reliance period. The embargo imposed by the United States made U.S.-Chinese trade almost impossible. The top five Western trade partners of China were the United Kingdom, West Germany, Canada, France, and Italy, which accounted for 6.7, 4.2, 4.0, 3.2, and 1.2 percent of China's total foreign trade, respectively. China's trade balances with these five countries were always unfavorable. One restriction on trade with Western countries was the amount of China's foreign reserves. Under the self-reliance policy, China would not allow a huge deficit in its overall balance of payments.

The United Kingdom has had a traditional interest in trading with China and in 1957 became the first country to relax the embargo policy toward China. As a result, bilateral trade between the United Kingdom and China rose rapidly from $102.3 million in 1957 to $204.0 million in 1958 and then fell continuously from $197.0 million in 1959 to $92.2 million in 1962. The total value of this bilateral trade for the whole period amounted to $3.10 billion, of which $1.25 billion was China's exports.

During the self-reliance period, China shifted a portion of its purchases from East Germany to West Germany. The volume of the bilateral trade between China and West Germany was relatively stable in the early 1960's after a great surge in 1958. The trade deficit accumulated to $757.7 million as a result of the high level of imports, which totaled $1.35 billion for the whole period. The large trade deficit occurred largely because China needed West German machinery and equipment to modernize its industrial sector.

Bilateral trade between China and France increased from $59.9 million in 1960 to $1.77 billion in 1971. Annual values of China's imports from France were always higher than those of its exports to France except in 1969.

China's cumulative trade deficit with France was $415 million over the period. China's trade balance with Italy was also negative for the whole period. Imports from Italy totaled $601 million, and the exports to Italy totaled $327 million. China's trade accumulated deficit with the four European countries was $2.06 billion over the period.

Two-way trade between China and Canada rose dramatically, from $17.5 million in 1960 to $202.3 million in 1971. The volume of two-way trade totaled $1.85 billion, of which $1.68 billion was China's imports. Annual import values varied from $13.8 million in 1960 to $230.2 million in 1966. For the period, the accumulated trade deficit was $1.45 billion, the highest deficit with any single country. The deficit was due to the large amount of agricultural commodities China purchased from Canada in the late 1960's. At one point, China was forced to sell its silver in the London market in order to finance wheat imports.

Changes in commodity composition.--The commodity composition of China's imports and exports changed over time, although China imported mainly capital goods. During the lean-to-Communist-bloc period, capital goods accounted for 90.5 percent of China's imports, and consumption goods accounted for 9.5 percent. 1/ In the self-reliance period, the import share of capital goods declined to 72.1 percent, and consumption goods increased to 27.9 percent. The industrialization in the 1950's, especially the First Five-Year Plan period, might be at least partially responsible for the high import demand for capital goods during the period. The increase in grain imports in the 1960's contributed to the upsurge in the share of consumption goods. China's exports were mainly farm products. The export share of primary and processed farm and sideline products declined from 78.5 percent in the lean-to-Communist bloc-period to 71.5 percent in the self-reliance period, but the export share of industrial and mineral goods increased from 21.5 to 28.5 percent. The composition of China's exports was relatively stable over the two periods compared with imports. 2/ However, in the 1960's exports of textiles and other manufactured goods increased steadily.

It is possible that the Great Cultural Revolution slowed the growth of foreign trade. The volume of trade reached a peak of $4.62 billion in 1966 and then dropped to $4.03 billion in 1969.

1/ In China's official statistics, imports are divided into two major groups: means of production and means of subsistence, which are synonymous with capital goods and consumption goods. Exports are divided into three major categories: industrial and mineral products, processed farm and sideline products, and farm and sideline products. For simplicity, the two categories of farm products can be combined into a single category--agricultural commodities. Products included in each of the categories are specified in the notes under table B-8. For the definitions of terms "primary and sideline products," and "processed farm and sideline products," see the explanatory notes in app. B.

2/ For China's major export and import commodities, see tables B-13 and B-14.

In 1971, a new policy line began to emerge that modified the self-reliance doctrine. A group of high-ranking cadres, led by Zhou Enlai, believed that importation of foreign technology was essential for attaining the goal of accelerating development and modernization. Zhou decided to reactivate the Technical Import-Export Corporation, which was deactivated in the late 1960's, and to import large amounts of new equipment and whole plants from Western countries. Zhou's decision made China's foreign trade lean toward the West.

The volume of China's trade with Communist countries increased rapidly in the 1950's, then declined in the 1960's as a result of the Sino-Soviet ideological dispute. The estimated share of China's trade with Western countries increased, as shown in table 12. The share of China's trade with Asian countries also increased during the two periods.

Table 12.--Estimated shares of China's foreign trade, by periods and by country groups, 1950-71

(In percent)

Period	Communist bloc	Western countries	Asian countries and others
Lean-to-Communist-bloc period (1950-59)	65.3	5.8	28.9
Self-reliance period (1960-71)	24.6	19.3	56.1

Source: Official statistics of the Chinese State Statistics Bureau.

China's Foreign Trade, 1972-83

In the early 1970's, Premier Zhou Enlai decided that China should play a more active role in international affairs. In September 1971, China joined the United Nations, paving the way for closer technological cooperation with Western countries. The Zhou-Tanaka communique in 1972 and the Zhou-Kissinger communique in 1973 cleared most obstacles to China's bilateral trade with Japan and the United States. 1/ Although he never officially abandoned the Five Principles of Peaceful Coexistence, Zhou did permit trade with these two technically advanced countries, even though both countries diplomatically recognized the Nationalist Government on Taiwan. Facing aging machinery and

1/ The Chou-Tanaka communique facilitated trade expansion between China and Japan. In July 1972, Prime Minister Kakuei Tanaka overturned the publicized stipulations of the Yoshida letter by approving the use of State funds to finance China's purchase of a $48 million plant to manufacture ethylene gas. Dated Apr. 4, 1964, the Yoshida letter was written by former Prime Minister Shogera Yoshida, who promised the Nationalists in Taiwan that Mainland China-Japanese trade would be limited to private circles. For a more detailed description of the Yoshida letter, see Hsiao, op. cit., pp. 54-59. The Chou-Kissinger communique of Nov. 14, 1973, stated: "The two countries held that it is in the interest of both countries to take measures to create conditions for further development of trade on the basis of equality and mutual benefit. . . ."

increasing demand for foreign technology, Zhou reinterpreted the self-reliance doctrine. As Zhou's chief assistant, Deng Xiaoping explained that self-reliance in no way means "self-seclusion" and rejection of foreign aid. 1/ The reinterpretation of the self-reliance doctrine was an ideological prerequisite for a trade expansion that might result in large deficits for China's trade balance. Both Zhou and Deng believed that China could save time and expense by acquiring certain portions of critically needed technology from the technologically advanced countries. Their views were not shared by their political rivals, especially the Gang of Four. Although China's foreign trade expanded substantially during 1972-78, their open-door policy could not be fully implemented until 1979, when Deng gained support of a majority of participants at the 1978 Third Plenum of the Eleventh CCP Central Committee.

The expansion period (1972-78)

The value of China's foreign trade in 1971 reached $4.85 billion, of which $2.64 billion was exports. In 1972, the value increased to $6.30 billion, of which $3.44 billion was exports. The annual value continued to rise until 1975, when it reached $14.75 billion. In 1976, the value of trade declined to $13.44 billion. In 1977, the level of trade resumed its upturn and increased from $14.80 billion in 1977 to $20.64 billion in 1978. The total Chinese trade during the 7 years amounted to $95.48 billion, of which $47.67 billion was the value of China's exports. The trade deficit, $0.14 billion, was small compared with that of the self-reliance period. Increasing exportation of crude oil and petroleum products played an important role in expanding and balancing China's trade. The average annual growth rate

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1/ In his speech to the Sixth Special Session of the United Nations General Assembly on the problems of raw materials and development, Apr. 10, 1974, Vice Premier Deng redefined self-reliance as: "By self-reliance we mean that a country should mainly rely on the strength and wisdom of its own people, control its own economic lifelines, and make full use of its own resources. Self-reliance in no way means self-seclusion and rejection of foreign aid. We have always considered it beneficial and necessary for the development of the national economy that countries should carry on economic and technical exchanges on the basis of respect for state sovereignty, equality and mutual benefit, and the exchange of needed goods to make up for each other's deficiencies. . . . " On the basis of this definition, Deng enunciated a set of principles concerning international economic and trade relations. These were, among others, that all developing nations are entitled to permanent sovereignty over their national resources and to the control and management of all foreign capital, particularly "transnational corporations," including nationalization; all countries have the right to participate in the decisions that effect international economic affairs, such as trade, shipping, and monetary matters; improvement must be made in the terms offered developing nations for their raw materials, primary products, and semimanufactured and manufactured goods; economic aid to the developing countries must be free of political strings, and loans to them must be either free of interest or carry low interest rates; deferred payment of capital and interest should be allowed, as well as reduction or cancellation of debts granted if necessary; and technology transferred to the developing nations must be practical, efficient, economical, and convenient for use. Deng's views were shared by Zhou and well received by the Third World.

of China's trade was 23.0 percent over the period. The annual growth rates of China's exports and imports were 20.5 and 25.6 percent, respectively. Increases in the volume of China's trade with Western countries contributed substantially to the high growth in trade.

Trade with Western countries.--During the 7-year period of expansion, China's two-way trade with eight Western countries (West Germany, France, the United Kingdom, Italy, Canada, Australia, Switzerland, and the United States) increased rapidly, from $1.52 billion in 1972 to $5.89 billion in 1978, or by 289 percent. The share of these eight countries in China's total trade also rose, from 24.1 percent in 1972 to 28.5 percent in 1978. The trade shares of Italy and Switzerland were low compared with those of the six other Western nations. Each of the two countries accounted for, on an average, 1.7 percent of China's total trade. The average trade shares of West Germany, the United Kingdom, France, Canada, and Australia were 5.7, 4.0, 3.9, 3.7, and 3.3 percent, respectively. As a new trade partner, the United States accounted for 3 percent of China's foreign trade during this period. The resumption of U.S.-Chinese trade contributed to the trade expansion.

By relaxing travel and trade restrictions in 1969, the United States indicated its intention to resume commercial relations with the People's Republic of China. On April 14, 1971, President Nixon formally announced his intention of relaxing the 21-year-old embargo, saying that he had asked for a list of items of nonstrategic nature which would be placed under general license for direct export to China, and on February 14, 1972, on the eve of his departure for China, he announced a decision to accord China, for export-control purposes, the same treatment applicable to the Soviet Union and certain Eastern European countries. The signing of the Shanghai Communique marked an official resumption of the commercial relations between the two countries. 1/ In order to improve these relations, the National Council for U.S.-China Trade was created on March 22, 1973, with the encouragement of the U.S. Government. 2/ An improvement in commercial relations was evidenced by a rapid increase in the level of bilateral trade during this period.

After resumption of trade relations in 1972, U.S.-Chinese trade experienced a 3-year upturn, from $129 million in 1972 to $475.7 million in 1974. Then, the value of trade started its downtrend in 1975 and declined to $294.3 million in 1977. In February 1978, following the announcement of the ambitious Ten-Year Plan (1976-85), which pushed up demand for foreign equipment and machinery substantially, there was a new euphoria about the Chinese market, and many U.S. business executives rushed to Peking hoping to capture a share of that market. As a result, two-way trade between the United States and the People's Republic increased to a new high of $991.8 million in 1978, or by 237 percent over such trade in the previous year. The huge increase in bilateral trade was caused by an unprecedented amount of imports of agricultural commodities from the United States.

1/ For a more detailed description on restoration of U.S.-Chinese trade, see W. Clarke and M. Avery, "The Sino-American Commercial Relationship," in China: A Reassessment of the Economy, the Congress of the United States, Joint Economic Committee, July 10, 1975, pp. 500-534.

2/ The National Council for U.S.-China Trade is a private organization and is financed by its members.

In 1972, the value of Chinese imports from the United States was only $3.3 million. After reaching a new high of $372.9 million in 1974, the value trended downward from $341.8 million in 1975 to $114.6 million in 1977. The value increased to $721.1 million in 1978, or by 529 percent over that of the previous year. The commodity composition of the Chinese imports varied over this period. Grain, cotton, machinery, transport equipment, and crude materials were at the top of China's import items. In 1973 and 1974, China bought large quantities of grain from the United States, but made no further purchases in 1975-77 despite significant imports from other sources. 1/ The value of grain imports from the United States increased from $27,000 in 1977 to $362.3 million in 1978. Within 2 years, inedible crude materials increased from $52.3 million to $223.9 million, and machinery and equipment increased from $51.9 million to $93.0 million. 2/ The changes in manufactured goods imported from the United States were small compared with those of imported agricultural commodities. In 1973-78, the value of imported machinery and transport equipment ranged from $51.9 million in 1977 to $118.8 million in 1973. In 1972-78, China imported a total of 1.94 billion dollars' worth of goods from the United States.

China's exports to the United States increased continuously from $9.6 million in 1972 to $270.7 million in 1978. China exported mostly manufactured goods and inedible crude materials, except fuel. Crude oil exports were insignificant. The largest increase in exports was reported in 1978, when the value of exports increased to $270.1 million, or by 50.7 percent over that of the previous year. During the 7-year period, China exported a total of $887.4 million to the United States. U.S. net foreign exchange earnings from the bilateral trade amounted to $1.05 billion.

In the post-1950 period, Chinese trade with West Germany, the United Kingdom, France, and Italy was never suspended, not even during the Korean conflict. These four European countries were among China's 12 leading trading partners in 1972-78. The commodity composition of Chinese-Western European trade was fairly constant over time. Generally speaking, China exported processed food, hides and skins, textiles, and manufactured goods to Western Europe in exchange for machinery and equipment, chemicals, and finished steel products. China's bilateral trade balance with each of these four countries was in deficit, the deficit with West Germany being the largest.

China's imports from West Germany increased from $183.5 million in 1972 to $721.0 million in 1976. These imports then decreased to $529.8 million in 1977 before reaching a new high of $1.03 billion in 1978. Premier Zhou Enlai's decision to import a modern steel plant and mining equipment from West Germany contributed to the increases in imports in the early 1970's. From 1972 to 1978, China's exports to West Germany increased from $90.4 million to

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1/ The Chinese trade statistics were published either by countries or by major commodity groups, but not by both. In this subsection, the import values of different commodity groups were the actual values of U.S. exports to China from official trade statistics of the U.S. Department of Commerce. There are differences in reported values of U.S. exports to China and of China's imports from the United States. This study ignores these differences.

2/ Commodity groups are based on the Standard International Trade Classification (SITC) commodity codes. For a more detailed analysis for commodity compositions of the U.S.-Chinese trade, see official trade statistics of the U.S. Department of Commerce.

$325.9 million. Over the entire period, the value of exports totaled $1.48 billion and the value of imports totaled $3.92 billion, for a total deficit of $2.43 billion.

The value of China's trade with the United Kingdom surged from $319.9 million in 1972 to $725.9 million in 1974 and then declined to $436.6 million in 1976. The value of trade in 1978 was $666.7 million. China's imports from the United Kingdom increased from $185.9 million in 1972 to $443.8 million in 1974. The value of imports reached a low of $169.9 million in 1976 before turning up to $296.3 million in 1978. British motors, generators, and other machines were among the imported items. Chinese exports to the United Kingdom rose from $134.0 million in 1972 to $282.1 million in 1974, and then declined to $241.7 million in 1975, before rising to $370.4 million in 1978. The bilateral trade balance was unfavorable to China except for the years 1976 and 1978. During 1972-78, China's cumulative trade deficit with the United Kingdom was $288.9 million, a much smaller deficit than that of bilateral trade with West Germany.

The volume of Chinese-French trade was very close to that of Chinese-British trade. Chinese-French trade rose from $217.7 million in 1972 to a high of $914.5 million in 1974. After that year, the value of this trade declined. By 1978, it amounted to only $425.5 million. During the 7-year period, China's exports to France ranged from $85.9 million in 1972 to $180.1 million in 1974, and China's imports from France ranged from $131.8 million in 1972 to $724.4 million in 1974. 1/ For all 7 years, China's trade deficit accumulated to $1.68 billion. A number of high-technology devices and equipment were among China's imports from France.

The level of two-way trade between China and Italy was relatively stable compared with those of the three other European countries, ranging from $162.7 million in 1972 to $356.4 million in 1978. The volume of China's exports to Italy grew from $83.8 million in 1972 to $165.5 million in 1978, and imports grew from $77.8 million in 1973 to $190.9 million in 1978. For the entire 7 years, Italy earned on net only $86.7 million in foreign exchange by trading with China.

Trade with Asian countries.--During the expansion period, Japan, Hong Kong-Macau, Singapore, Malaysia, Sri Lanka, Pakistan, and Burma were China's major trade partners in Asia. The trade shares of Malaysia and Singapore were 1.2 percent and 2.0 percent, respectively. The volume of China's trade with Japan and Hong Kong-Macau accounted for 35.77 percent of China's total trade. By trading with Asian countries, China earned a large amount of foreign exchange, amounting to $8.16 billion during 1972-78.

1/ According to Series C of Organization for Economic Cooperation and Development (OECD) Statistics of Foreign Trade, in 1974, France's exports (f.o.b.) to China were $159.7 million, and France's imports (c.i.f.) from China were $181.9 million. Thus, France had a bilateral trade deficit of $22.2 million in that year. According to the Statistical Yearbook of China 1981, in 1974, China's exports (f.o.b.) to France amounted to $180.1 million, and China's imports (c.i.f.) from France amounted to $734.4 million. Thus, China had a bilateral trade deficit of $554.3 million in that year. Usually, the difference between the f.o.b. value and the c.i.f. value, which represents insurance and freight costs, is about 10 percent. Reasons for the large statistical discrepancy between China's imports from France and France's exports to China are unknown.

Japan was the largest trade partner of China in 1966, regained the lead position in 1970, and maintained it thereafter. China's trade with Japan expanded significantly during the expansion period. Chinese exports to Japan rose from $411.8 million in 1972 to $1.72 billion in 1978, and Chinese imports from Japan surged from $627.4 million to $3.11 billion. China's exports to Japan traditionally consisted of soybeans, raw silk, and mineral products. Beginning in 1974, however, crude oil emerged as China's leading export product, contributing substantially to bilateral trade expansion between the two countries. In return, China imported from Japan mainly chemicals, machinery and equipment, and steel products, which were needed for its economic development projects. China's trade balance with Japan had always been in an unfavorable position and experienced a total deficit of $5.04 billion during 1972-78.

After Japan, Hong Kong or Hong Kong-Macau was China's second largest trading partner in 1972-78. Trade with Hong Kong-Macau over the period accounted for 13.6 percent of China's total trade. 1/ China's exports to Hong Kong-Macau rose rapidly from $891.8 million in 1972 to $2.67 billion in 1978. For the same period, China's imports increased from $20.3 million to $74.7 million. China supplied most of the foodstuff needed by people in the two cities and imported limited amounts of goods (mostly manufactured products) from them. The average ratio of China's exports to its imports in this trade was 22 to 1. In the 7-year period, China accumulated a trade surplus of $11.75 billion, and Hong Kong became the prime source of China's foreign exchange.

Singapore and Malaysia were the only other Asian countries whose trade shares exceeded 1 percent of China's total trade. China's exports to Singapore rose from $117.8 million in 1972 to $247.9 million in 1978. China's imports from Singapore ranged from $34.8 million in 1975 to $140.9 million in 1974. Each year China enjoyed a trade surplus, which accumulated to $965.4 million in 1972-78. During this period, China earned $449.0 million in foreign exchange by trading with Malaysia.

Trade with Communist countries.--During the 7-year period of expansion, the volume of China's trade with Communist countries declined in absolute terms and declined sharply in relative terms. Trade with the Communist bloc decreased from $13.24 billion in the self-reliance period to $13.15 billion in the expansion period. For the two periods, the Communist countries' share of China's total trade declined from 24.6 to 13.7 percent. The Communist countries' share of trade was lower than the share of bilateral trade between China and Japan and close to that of China's trade with Hong Kong-Macau. Romania replaced the Soviet Union as China's largest trade partner in the Communist bloc during this period. The Democratic People's Republic of Korea replaced Cuba at the second largest position. Trade with Romania, the Democratic People's Republic of Korea, the Soviet Union, East Germany, and Cuba accounted for 3.1, 2.8, 2.4, 1.4, and 1.2 percent in China's total trade, respectively. 2/ This low trade level suggests that China did not depend on Communist countries for its four modernizations.

1/ During this period, about 94 percent of China's trade with Hong Kong-Macau was with Hong Kong.

2/ The trade shares of Albania, Czechoslovakia, Hungary, Poland, and Yugoslavia were less than 1 percent of China's total trade.

China's two-way trade with Romania increased continuously from $205.9 million in 1972 to $761.5 million in 1978. China's exports to Romania also rose every year from $88.7 million in 1972 to $396.3 million in 1978. During this period, China's imports grew from $117.1 million to $368.9 million, and it lost, in total, 200 million dollars' worth of foreign exchange to Romania.

China's trade with the Democratic People's Republic of Korea also grew steadily during this period. The two-way trade increased from $283.1 million in 1972 to $454.3 million in 1978. Exports to the Democratic People's Republic of Korea ranged from $164.4 million in 1972 to $284.1 million in 1978, and its imports ranged from $118.4 million in 1973 to $223.6 million in 1978. China's trade balance with the Democratic People's Republic of Korea was in surplus throughout the period, and it accumulated to $580.2 million.

After the Soviet Union withdrew its economic aid and technical advisors from China in 1960, bilateral trade between the two Communist countries dropped sharply and reached the lowest level, $47 million, in 1970. The two-way trade started its uptrend in 1971, reaching $250.3 million in 1972 and $436.5 million in 1978. China remembered the difficulty it experienced paying back the large trade debt to the Soviet Union in the 1950's and wanted its trade balance with that country to be in a balanced or close to a balanced position. In 1972-78, China's exports to the Soviet Union ranged from $133.4 million in 1973 to $229.7 million in 1978, and China's imports ranged from $116.8 million in 1972 to $246.4 million in 1976. During the 7-years, China experienced a small surplus of $6.7 million from its trade with the Soviet Union.

China's trade with East Germany grew relatively slowly compared with its trade with West Germany. The two-way trade between China and East Germany rose from $105.6 million in 1972 to $314.7 million in 1978. In the same period, China's exports to East Germany increased from $45.3 million to $162.2 million, and China's imports increased from $60.4 million to $152.5 million. For the whole period, China suffered a trade deficit of $47.9 million. China's trade with Cuba declined from $1.84 billion in the self-reliance period to $1.11 in the expansion period. During 1972-78, China's exports to Cuba ranged from $48.8 million in 1976 to $106.7 million in 1974, and imports ranged from $53.4 million in 1972 to $111.7 million in 1974, resulting in an accumulated deficit of $77.7 million.

Commodity composition.--The commodity composition of China's exports changed moderately during 1972-78. The share of industrial and mineral goods in China's exports increased from 28.5 percent in the self-reliance period to 34.3 percent in the expansion period, but the share of primary and processed farm and sideline products declined from 71.5 to 65.7 percent. The increases in crude oil production and exportation contributed to the increases in industrial shares in China's exports, especially exports to Japan. The commodity composition of China's imports also changed. An increase in exports of manufactured goods enabled China to import more capital goods. The share of capital goods in China's imports rose from 72.1 percent in the self-reliance period to 81.2 percent in the expansion period; the share of consumption goods in imports decreased from 27.9 to 19.8 percent. The change in China's import composition is understandable. Demand for foreign capital goods soared as a result of implementation of the modernization projects.

The open-door period (1979-present)

Two years after Mao's death, Deng Xiaoping successfully gained control over the CCP Central Committee and immediately implemented his open-door policy. In 1979, the People's Republic of China implemented a set of new economic policies. The Communist authorities realized that China needed foreign technology and capital in order to attain a high rate of economic growth. In 1982, they adopted a new Constitution to make foreign investments legal and secure. In addition, they established a new joint venture law and special economic zones to facilitate foreign investments and technology transfer. Thus, the door was opened to imports of foreign capital and technology. New construction projects also pushed up the level of Chinese trade. The value of China's foreign trade rose from $29.33 billion in 1979 to $43.66 billion in 1983, or by 90 percent. China's trade with technologically advanced countries increased more rapidly than its trade with developing countries. The annual value of China's bilateral trade with the United States, Japan, or West Germany has exceeded $1 billion.

Trade with the United States.--On January 1, 1979, President Carter normalized diplomatic relations with the People's Republic of China. This action provided the basis for strengthening trade and economic relations between the two countries. A comprehensive trade agreement between the two, including the granting of most-favored-nation (MFN) status, was signed 6 months later. As a result of the agreement, U.S.-Chinese trade accelerated. 1/ Two-way trade between the United States and China rose from $992 million in 1978 to $2.45 billion in 1979, representing a 147-percent increase. This trade increased to $4.81 billion in 1980 and reached a record high of $6.85 billion in 1981. 2/ The success of Chinese agricultural reforms resulted in a significant increase in grain production in 1982. Production for the year was 353.43 million tons, or an increase of 9 percent over that of 1981. The increase in Chinese domestic production lowered the demand for U.S. grain. Consequently, the value of bilateral trade declined to $6.17 billion in 1982. The unsuccessful negotiations on a new textile agreement caused U.S.-Chinese trade relations to deteriorate and pulled the level of bilateral trade

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1/ Congress voted approval in mid-January 1980, and the trade agreement took effect Feb. 1, 1980. For the impact of the agreement, see P.T. Lincoln and J.A. Kilpatrick, "The Impact of Most-Favored-Nation Tariff Treatment on U.S. Imports From the People's Republic of China," in Chinese Economy Post-Mao, the Congress of the United States, the Joint Economic Committee, Nov. 9, 1978, pp. 812-839.

2/ There are differences in bilateral trade figures between U.S. and Chinese statistics. For instance, in 1981, Chinese trade statistics showed that two-way trade amounted to $6.85 billion of which $4.37 billion was the value of China's imports from the United States. In U.S. trade statistics, the two-way trade amounted to $5.43 billion, of which $3.60 billion was the value of U.S. exports to China. The deficit in the Chinese trade balance was $3.23 billion and the surplus in the U.S. trade balance was only $1.77 billion. The differences in trade figures are probably due to statistical errors and discrepancies and to the disparity between f.o.b. and c.i.f. values.

down to $4.42 billion in 1983. 1/ In 1979-82, U.S.-China bilateral trade totaled $10.20 billion, and made up 13.3 percent of China's total trade.

During the 5 years of the open-door period, China tried hard to expand its exports to the United States. This would have helped China pay for its imports from the United States, which were needed for its economic development projects and food consumption. China's exports to the United States rose rapidly each year, from $595.0 million in 1979 to $2.24 billion in 1983. Before 1979, China exported mainly manufactured goods and crude materials. 2/ Leading manufactured exports were textiles and apparel. Unwrought tin and tungsten products were also included in exported manufactured goods. Important items in crude material exports were feathers, tungsten ore, and raw silk. In 1979, China started to export crude petroleum and petroleum products to the United States, including gasoline, crude oil, and petroleum-derived naphtha. Gasoline exports became the leading item of the Chinese exports in the early 1980's, increasing from $21.6 million in 1979 to $336.9 million in 1982. 3/ Textiles, apparel, and gasoline contributed substantially to China's export expansion. In addition, some processed agricultural commodities, such as canned mushrooms and shelled peanuts, penetrated the U.S. market at increasing rates. Within 5 years, Chinese exports to the United States almost quadrupled.

Chinese imports from the United States increased dramatically in 1979-83. These imports totaled $1.87 billion in 1979, representing a 157-percent increase over those of the previous year. Imports from the United States reached a high of $4.76 billion in 1981 and then trended downward, from $4.37 billion in 1982 to $2.17 billion in 1983. Before 1979, China imported mainly food and raw materials from the United States. Two grain items, wheat and yellow corn, were responsible for virtually all food imports. Cotton was always the leading item in China's raw-material imports. Other imported raw materials included polyester fibers and soybeans. Imports of machinery and transport equipment were at a relatively low level compared with those of food and crude materials. Since transport equipment and machinery are two of the strategic industries in the Sixth Five-Year Plan, China increased its imports of machinery and transport equipment from 1979 to 1983. Imports of machinery and transport equipment rose from $93.0 million in 1978 to $228.7 million in

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1/ The textile agreement expired on Dec. 31, 1982, and negotiations to renew the agreement failed in August 1982. On Jan. 13, 1983, after the fourth unsuccessful round of negotiations, the United States instituted unilateral import controls on 32 categories of Chinese textiles, adding 4 items to the 28 products already restricted under the expired agreement. Peking immediately retaliated by barring further contracts for U.S. synthetic fiber, soybeans, and cotton and announcing a reduction in planned purchases of U.S. agricultural products.

2/ Manufactured goods included under SITC category 6 (manufactured goods classified by chief material) and 8 (miscellaneous manufactured articles). Crude materials refer to those items under SITC category 2.

3/ These two figures were from official statistics of the U.S. Department of Commerce. They were U.S. imports from China. For values or quantities of Chinese major export commodities, see table B-13 in app. B.

1979. 1/ Imports of this category climbed to $582.9 million in 1983, when seven U.S.-made jet aircraft were purchased as a part of the modernization of civil aviation equipment.

During the 5-year period, China exported to the United States $7.15 billion and imported $16.99 billion in goods. Its trade balance was negative in every year except 1983. The Chinese trade deficit accumulated to $9.85 billion over the 5-year period. 2/ Apparently, the most-favored-nation treatment, U.S. firms financing arrangements, and the U.S. Eximbank credit facilities contributed to the dramatic trade expansion between the two countries. 3/

Trade with Japan.--Japan remained China's largest trade partner throughout the 5-year open-door period. China relies heavily on Japan for its modernization programs. Due to its geographic location, Japan is in a better position to trade with China than are West Germany and the United States. Transportation costs of capital goods from Japan are lower than costs from the two Western countries. In addition, maintenance costs of Japanese-made machinery are also lower. These price differences make Japanese products more attractive to China.

Two-way trade between China and Japan rose from $6.71 billion in 1979 to $9.20 billion in 1980. The value of trade turnover reached a record high of $11.12 billion in 1981 before declining. Because of its financial problems, China cut its budget substantially and reduced its funds for capital construction projects by Y30 billion, or 44 percent, of its authorized funds in 1981. Many projects were affected, especially those involving steel mills, coal mines, metallurgical plants, and petrochemical complexes. As a result, China unilaterally canceled a number of contracts with foreign companies signed in 1978, including those with Japan. These canceled contracts amounted to $1.50 billion. 4/ The cancellations slowed down trade flows between the two countries. The value of two-way trade dropped to $8.89 billion in 1982

1/ The value of imported machinery and transport equipment are those reported in SITC category 6 of U.S. official statistics.

2/ The bilateral trade figures in 1983 are not available from the Chinese side. The export and import values were from U.S. official statistics. On the basis of U.S. trade statistics, the U.S. trade surplus amounted to $6.28 billion, which is much smaller than China's reported deficit with the United States.

3/ Like MFN tariff treatment, Eximbank financing was extended to China under the President's authority to waive secs. 402(a) and (b) of the Trade Act of 1974 and was a provision in the United States-China trade agreement. For more details on Eximbank financing in 1981, see the China section of the 29th Quarterly Report to the Congress and the Trade Policy Subcommittee on Trade Between the United States and the Nonmarket Countries During 1981, USITC Publication 1236, March 1982.

4/ Cheng, op. cit., p. 467. The contracts with Japan were for purchases of plants, machinery, and equipment signed in 1978. The largest of the projects halted was the Baoshan Iron & Steel Co. which is located in the suburbs of Shanghai. The construction project of the company resumed as one of China's 70 key construction projects under the Sixth Five-Year Plan after Dec. 16, 1981, on which an agreement on a loan of $1.38 billion from Japan was signed.

and then rose to $9.76 billion in 1983. 1/ Between 1979 and 1982, the bilateral trade between the two countries accumulated to $35.92 billion, accounting for 23.5 percent of China's total trade during the period.

Chinese exports to Japan increased from $2.8 billion in 1979 to $4.91 billion in 1982. Before 1974, China exported mainly soybeans, raw silk, and mineral products to Japan. Beginning in 1974, crude oil and coal emerged as China's leading export items. In February 1978, China signed a long-term trade agreement (1978-85) with Japan and agreed to export oil and coal valued up to $10 billion during the 7 years. In the first 5 years, China exported 9.2 million tons of coal and 47 million tons of crude oil. 2/ Quantities were to rise gradually to the 1982 goal of 15 million tons of oil and 6.8 million tons of coal. The increase in China's oil production was not as high as expected, and China had difficulty carrying out the agreement. In 1979, China exported only 7.4 million tons of oil to Japan. This amounted to only 38 percent of the value of China's total exports to that country. 3/ With abundant deposits and increasing production of coal, China probably can export coal to Japan at the agreed quantities. 4/

As a result of its modernization program, Chinese imports from Japan increased rapidly from $3.94 billion in 1979 to a record high of $6.29 billion in 1981. The reduction in China's national budget and suspensions of major capital construction projects lowered import demand for capital goods and decreased the imports from Japan to $3.98 billion in 1982. This was a 63.3-percent drop from that of the previous year. The top items in the Chinese import list were machinery, equipment, rolled steel, and chemicals (mainly fertilizers). Steel imports increased over time. Between 1977 and 1979, China imported 4.45 billion dollars' worth of iron and steel from Japan, constituting 51 percent of the total imports from Japan. 5/ China's imports from Japan during 1979-82 totaled $19.40 billion, which accounted for 25.3 percent of China's total imports in the period. The deficit of China's trade balance with Japan in the 4 years accumulated to $2.82 billion. 6/ Since 1965, Japan has been the largest supplier of imports to China and has enjoyed a large surplus in its trade with China.

1/ The Chinese bilateral trade figures in 1983 are not available at present. The 1983 two-way trade figure was from Central Intelligence Agency, China: International Trade, Fourth Quarterly, 1983, May 1984.

2/ Cheng op. cit., p. 466.

3/ Ibid., p. 467.

4/ China has the third largest coal mine in the world. Its 1982 goal of 15 million tons of crude oil accounted for 14.8 percent of the total Chinese production in that year; 6.8 million tons of coal accounted for only 1.0 percent of the total production. For the Chinese annual production figures on crude oil and coal, see table B-4.

5/ This figure was calculated from trade data in Central Intelligence Agency, China: International Trade Quarterly Review, September 1979. China stopped importing pig iron in 1982.

6/ The deficit in 1983 was not included. According to CIA data, in 1983, China's exports to Japan were valued at $4.84 billion, imports were valued at $4.9 billion.

Since geographical proximity and cultural ties between the two countries gave Japan an edge in competing with Western Europe and the United States for the Chinese market, Japan has been the major beneficiary of the Chinese modernization program. In addition, the close cooperation between the Government and business in Japan and Japan's skills in trade negotiations made it difficult for U.S. businessmen to get new contracts with China. Since Japan has participated in a number of Chinese economic development projects, including the joint exploitation of offshore oil in Bahai Wan and the expansion of the Baoshan steel mills, it is quite likely that Japan will continue to be China's largest trade partner throughout the remainder of this decade.

Trade with West Germany.--Two-way trade between China and West Germany increased from $2.20 billion in 1979 to $3.29 billion in 1982 and accumulated to $9.75 billion, accounting for 12.7 percent of China's total trade during 1979-82. Chinese exports to West Germany rose rapidly from $459.2 million in 1979 to a record high of $854.2 million in 1981 and then declined to $789.2 million in 1982. Over the 4 years, China's exports to West Germany totaled $2.81 billion. 1/ The leading export items were food, crude materials, and textiles. The value of textiles exports increased dramatically. 2/ Exports of petroleum products to the European country were negligible. 3/

China's imports from West Germany reached a record high of $1.74 billion in 1979 and then declined to $1.33 billion in 1980 and to $1.36 billion in 1981. Due partly to the 1981 budget reduction in capital construction, China's imports declined further to $985.1 million in 1982. During 1979-82, these imports totaled $5.42 billion. The leading import items were organic chemicals, steel, plastic materials, and machinery and transportation equipment. More than 50 percent of the total imports were machinery and transportation equipment. 4/ With its relatively advanced technology, West Germany has sent machinery, equipment, and technicians to China and has participated in the latter's economic development projects, especially in modernizing coal mines and in steel mill projects. During the 4 years, China suffered a huge trade deficit of $3.68 billion in its trade with West Germany. Traditionally, China has shown confidence in West German-made machines and equipment. It is quite likely that West Germany will continue to be one of China's major trade partners for the remainder of the 1980's.

1/ According to CIA data, in 1983, China's exports to West Germany totaled $651.6 million, and imports from West Germany totaled $1.06 billion.

2/ According to trade data in Commodity Trade Statistics 1980, Series D, United Nations, New York, 1981, West Germany imported $102.7 million of textile yarn and fabrics from China in 1980. These textiles imports were valued at $48.3 million in 1978. The value of such imports more than doubled in 3 years.

3/ On the basis of U.N. trade statistics, in 1981, West Germany imported only 18,229 tons of gasoline and no crude oil from China. Kuwait and Saudi Arabia were two major gasoline suppliers to West Germany. The unit values of the Chinese, Kuwaiti, and Saudi Arabian gasoline were $317.73, $324.79, and $340.54, respectively.

4/ For instance, in 1981, West Germany exported 7.69 billion dollars' worth of goods to China, of which $493.5 million was machinery and transportation equipment under SITC category 7.

Trade with Hong Kong-Macau.--Ever since the rounding of the People's Republic in 1949, Hong Kong has been China's major source of foreign exchange. For the past 34 years, except in 1951, the Chinese trade balance with Hong Kong was always in surplus. Also, for each of the past 34 years, Hong Kong was China's second largest trade partner (either the Soviet Union or Japan occupying first place), except in 1965, 1968, and 1969 when Hong Kong was China's largest trade partner. In 1979-82, two-way trade between China and Hong Kong-Macau increased from $3.76 billion in 1979 to a record high of $6.95 billion in 1981 and then declined to $6.90 billion in 1982. 1/ This two-way trade accumulated to $22.80 billion, 2/ representing 14.9 percent of China's total trade in the 4 years.

Hong Kong and Macau cannot survive without food and water from China. Traditionally, China has exported mainly food, crude materials, and textiles to these two colonies. During 1979-82, China exported large amounts of petroleum products, chemicals, and machines to Hong Kong. The value of Chinese exports to Hong Kong-Macau increased from $3.55 billion in 1979 to a historic high of $5.68 billion in 1981, and then declined to $5.55 billion in 1982. The most significant gains were in petroleum products, mineral products, and textile yarn and fabrics. 3/ China's exports to these two border cities totaled $19.4 billion during the 4-year period.

China's imports from Hong Kong-Macau increased continuously each year, from $214.5 million in 1979 to $1.35 billion in 1982. New items appearing in the top import list in this period were telecommunications equipment, photographic equipment, and mineral fuels. The most significant gains were in basic manufactured goods and machinery and equipment. 4/ China's imports from the two cities totaled $3.40 billion, about 8.5 percent of its total imports in the 4-year period. China had a large trade surplus of $20.87 billion.

China needs foreign exchange to finance modernization projects. During 1950-82, China earned $90.91 billion of foreign exchange by trading with the two colonies. It is quite likely that China will continue to enjoy a large trade surplus in the next few years. However, it is not clear whether the trade surplus will be carried over into the 1990's. Since 1982, the issue of returning Hong Kong to the People's Republic of China's rule in 1997, when the

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1/ The Chinese State Statistical Bureau separated Macau from Hong Kong in its 1981 and 1982 trade reports. The values of two-way trade between China and Hong Kong in 1981 and 1982 were $6.65 billion and $6.63 billion, respectively. The values of China-Macau trade in the 2 years were $303 million and $276.1 million, respectively. China's trade with Macau accounted for less than 5 percent of its trade with Hong Kong and Macau.

2/ The value of 1983 bilateral trade was not included. According to CIA data, China's exports to Hong Kong amounted to $5.85 billion, and imports from Hong Kong amounted to $2.50 billion.

3/ According to the U.N. trade statistics, Hong Kong imported from China 3.1 million dollars' worth of petroleum products in 1978, and 400.5 million dollars' worth in 1981. Hong Kong's imports of textile yarn and fabrics increased from $456.2 million in 1978 to $1.04 billion in 1981.

4/ According to the U.N. trade statistics, Hong Kong exported to China 10.1 million dollars' worth of basic manufactured goods (goods under SITC category 6) in 1978 and 148.4 million dollars' worth in 1981. In addition, Hong Kong exported to China 91.6 million dollars' worth of telecommunications equipment in the latter year.

99-year lease expires, has surfaced and has become a major concern of Hong Kong inhabitants. The sharp devaluation of Hong Kong dollars in the money market and the unusually large fluctuations in stock prices in the Hong Kong capital market in 1983 and early 1984 might be interpreted as a sign of instability of Hong Kong's financial market. 1/ Several countries have already expressed their welcome to Hong Kong's investment and revised their investment laws to facilitate capital inflows from Hong Kong. In April 1984, Premier Zhao Ziyang and British Secretary for Foreign and Commonwealth Affairs Sir Geoffrey Howe in Peking indicated that both governments want to have a prosperous Hong Kong. 2/ The talk has not completely cleared the dark clouds over the sovereignty issue. On September 26, 1984, the two governments initialled an agreement which permits Hong Kong to keep its free-market economy for 50 more years, starting from 1997. Although the immediate reactions to the agreement from Hong Kong inhabitants were split, many of them hope that the future Chinese Government will rule Hong Kong in a way consistent with the agreement. 3/

Problems in U.S.-Chinese Trade

After resuming U.S.-Chinese trade and economic relations in 1972, bilateral trade between the two countries grew rapidly. When the volume of bilateral trade increased, the number of trade issues also increased. The different economic systems and cultures of the two countries have resulted in certain trade problems. The United States is a nation of laws and lawyers with a strong input from the legislative branch of Government. The Chinese system comes from a tradition in which a legalistic approach to matters is distrusted. Emphasis is on consultation, accommodation, and, often, common sense. 4/ The first law office in the People's Republic started practice only a few years ago. It takes time for Chinese lawyers to understand U.S. trade laws and competition in the international market. Problems in bilateral trade are inevitable. The main trade problems between the two countries are textiles, China's dual exchange rates, human rights, and export controls.

1/ According to the Jardine Matheson Co., Ltd., the relocation of their headquarters from Hong Kong to Bermuda in 1984 was not caused by Sino-British talks on Hong Kong's sovereignty.

2/ Edward Neilan, "British Giveaway Jolts Hong Kong," The Washington Times, Apr. 14, 1984, p. 1A.

3/ For highlights of the Sino-British Hong Kong agreement, see The Wall Street Journal, New York, Sept. 27, 1984, p. 34.

4/ Eugene K. Lawson, Problems and Prospects in U.S.-China Trade, a paper presented at the 1984 convention of the Association for Asian Studies, Mar. 25, 1984, Washington, DC.

Textiles

Textiles and apparel are labor-intensive goods in which China has a comparative advantage in production. With a huge labor force of 447.06 million workers 1/ and an average monthly wage of $28.60 per worker, China should be in a good position to compete internationally in all types of labor-intensive goods. Since the 1880's, China has maintained a large and efficient textile industry. The selection of textiles as one of the high-priority industries in the Chinese economic development plan was a wise act. The increasing production of the industry can raise supply available for domestic consumption, which is at a low level, and it can penetrate into foreign markets where labor costs are high. Owing to the importance of the industry in the economy, the Chinese Communists established an independent agency, the Ministry of Textile Industry, to coordinate production and research for the industry. 2/ Although textile products are classified as a part of light industry, the Ministry of Light Industry has no control over the industry.

China's textile production.--The Chinese textile industry is concentrated mainly along the coastal region. In recent years, a number of new textile mills were established in the inland provinces, such as Shaanxi, Henan, and Yunnan. Most large textile enterprises are located in Shanghai, Tianjin, and Qingdao. These three coastal cities combined produce approximately one-quarter of all Chinese textile products. 3/ As a result of the readjustment of the proportional relationships between agriculture, light industry, and heavy industry, the textile industry achieved the highest growth rate among all industries during 1978-81.

1/ This is the number of workers employed in China in 1982. The average monthly wage was calculated from the 1982 average annual wage of all collectively owned industries (Y659.00). Both figures are from official Chinese statistics. This study used the exchange rate that the Chinese Government used to convert the dollar to yuan in its trade accounts. The trade rates, which may differ from the official rate, for 1950-82 are shown in table B-7.

2/ The textile industry contributed significantly to China's economic development. In the late 1970's and into 1980, profits turned over to the State by the industry accounted for 10 percent of State revenues, sales on the domestic market accounted for 20 percent of the country's total volume of retail sales in consumer goods, and textile exports accounted for approximately 20 percent of China's total foreign-exchange earnings from exports.

3/ In 1982, Shanghai produced 17.0 percent of China's total textile production, and Tianjin produced 4.4 percent. Shandong Province including Qingdao produced 7.9 percent.

In 1979, the Chinese industry produced a total of Y60.16 billion ($38.81 billion) of textile products made from cotton, wool, flax, ramie, silk, and chemical fibers. Cotton has been the largest subsector under the textile industry. For instance, in 1979, China ranked first in the world by producing 2.63 million tons of cotton yarn and blended cotton synthetic yarn, and 12.15 billion meters of cotton fabrics. In addition, the industry produced 326,300 tons of chemical fibers and 29,700 tons of silk in that year. 1/ In 1980, the textile industry, with its 15,300 enterprises and 3.4 million workers and staff members, produced a total of Y74.70 billion ($50.13 billion) of textiles, representing a 24-percent increase over the level of the previous year. 2/ In 1981, the first year of the Sixth Five-Year Plan, production in the industry totaled Y85.60 billion ($57.45 billion), representing a 17-percent increase over that of the previous year. The annual growth rate for the year was targeted at 8 percent. The share of the textile industry in gross value of total industrial production increased from 12 percent in 1978 to 16.5 percent in 1981. The increase in output enabled per capita consumption of cloth to rise from 28 to 31 feet per year. In the same period, the share of chemical fiber in the total material input increased from 15 to 24 percent. Production capacity of the textile industry was fully utilized in 1981. 3/ The growth rate of the industry slowed down in 1982. The shortage in power supply was probably a major reason in slowing down the growth rate of the industry. Total output amounted to Y86.66 billion ($45.13 billion) in 1982, representing a 1.3-percent increase over output in 1981. 4/

1/ Annual outputs of chemical fibers, yarn, and fabrics for the period 1952-82 are shown in table B-4, app. B.

2/ Data derived from the Almanac of China's Economy 1983, (Beijing: Economic Management House, 1983) and the Statistical Yearbook of China 1983. According to the Statistical Yearbook of China 1983, workers and staff members in the textile industry in 1980, 1981, and 1982 totaled 3.40 million, 3.89 million, and 4.12 million, respectively. In official Chinese statistics, the cloth (apparel) industry is separated from the textile industry. In 1982, the cloth industry consisted of 0.8 million workers and staff members and 7,000 enterprises. The share of the cloth industry in the gross value of the combined output of the cloth and textile industries was about 2 percent.

3/ The industry took a short-run adjustment in order to increase its output. A rotary four-shift system has been put into practice as a reform of the old labor system in the cotton sector and in parts of the wool and jute sectors of the industry. This system calls for three shifts on duty and one off duty every day. Textile mills work around the clock in three shifts, fully utilizing producton capacity.

4/ The 1982 production included 517,000 tons of chemical fibers, 3,354,000 tons of yarn, 15.4 billion meters of cloth, 92,000 tons of knitting wool, 126,690 tons of woolen-piece goods, 499,800 tons of gunny bags, 37.1 tons of silk, and 913,680 meters of silk textiles. All 1983 figures were based on the State Statistical Bureau's announcement which was published in the People's Daily, Apr. 30, 1984, pp. 1 and 2.

In 1983, the textile industry resumed its two-digit growth rate (10.3 percent), and its output value amounted to Y94.42 billion ($47.21 billion). In the same year, output was 3.27 million tons for cotton yarn, 14.88 billion meters for cotton and chemical fabrics, 541,000 tons for chemical fibers, 143 million meters for woolen-piece goods, and 999 million meters for silk textiles. In developing its textile industry, China emphasized a relatively high-technology sector, i.e., chemical fibers. In recent years, a large portion of capital construction for the textile industry was used for the chemical fiber sector, 1/ but it is not certain that production of chemical fibers will reach 780,000 tons in 1985 as targeted in the Sixth Five-Year Plan.

China's textile exports.--China's textile exports consist of a large variety of goods, including cotton yarn, cotton fabrics, cotton polyester fabrics, rayon fabrics, silk and satins, raw silk, and woolen goods. Raw silk and cotton fabrics have been exported for centuries. China has exported rayon fabrics since 1959 and cotton polyester fabrics since 1963. In recent years, Chinese textile exports accounted for approximately 20 percent of the country's total foreign exchange earnings from exports. Two top foreign-exchange-earning items are cotton fabrics and cotton polyester fabrics. Between 1978 and 1982, exports of cotton fabrics increased from 1.10 billion meters to 1.12 billion meters; exports of cotton polyester fabrics increased from 133.44 million meters to 481.02 million meters, or by 260 percent. In 1963, China exported only 0.4 million meters of cotton polyester fabrics. The rapid growth of the exports encouraged China to develop its manmade fiber and petrochemical industry. During the 5-year period, exports of rayon fabrics increased from 102.30 million meters to 125.56 million meters. 2/ In the same period, exports of woolen-piece goods increased from 8,739 to 10,340 tons. In 1982, exports of cotton and polyester cotton fabrics were valued at $692.8 million and $314.4 million, respectively. 3/ China's exports of textile products go mainly to developed countries where labor costs are relatively high.

1/ China decided to develop its petrochemical industry complex in which manmade fiber is one of the main downstream products. Two manmade-fiber plants were built in recent years.

2/ For Chinese exports of cotton yarn, cotton fabrics, cotton-polyester fabrics, and rayon fabrics, 1952-82, see table B-13.

3/ In 1982, China also exported 2.96 billion yuan's worth of all types of garments which were not included in the textile exports. In official Chinese statistics, exports of major commodities are mostly in physical units, except for the years 1980-83, in which values of exported commodities are available. The CIA has estimates of China's exports of textiles and apparel for various years.

U.S. textile imports from China and bilateral textile agreement.--In 1974, U.S. imports from China reached $21.2 million, including $8.6 million in textile products. 1/ The value and commodity composition of U.S. textile imports from China changed substantially over time. The share of yarn and fabrics in textile imports decreased from 69.8 percent in 1974 to 24.3 percent in 1983. In the same period, the share of apparel increased from 10.5 percent to 74.5 percent, as shown in table 13. Most of imported textile fibers were raw silk, which grew relatively slowly compared with imports of other items. Imports of cotton yarn also grew slowly. Cotton fabrics and clothing imports grew at accelerated rates and pushed the value of textile imports up to a new high of $147.2 million in 1978. Facing the increasing imports of textile products, the U.S. textile producers expressed their serious concern and supported the negotiation of a bilateral agreement with China even though it was not a signatory to the Multifiber Arrangement (MFA). 2/ In addition, they looked for legal actions to protect their declining market shares.

Table 13.--U.S. imports of textile products from China, 1974-83

Year	Textiles, total	Fibers (SITC 26)	Yarn and fabrics (SITC 65)	Apparel (SITC 84)	Share of total U.S. imports from China
	Million dollars				Percent
1974	8.6	1.7	6.0	0.9	40.6
1975	46.3	4.4	33.1	8.8	29.2
1976	71.5	8.2	46.8	16.5	35.4
1977	69.3	7.5	36.3	25.5	34.2
1978	147.2	10.4	67.0	69.8	41.3
1979	250.4	13.0	69.2	168.2	38.3
1980	440.4	13.0	149.4	278.0	37.9
1981	733.9	19.0	257.1	457.8	35.6
1982	1/ 829.3	12.7	220.5	596.1	37.4
1983	1/ 986.3	11.8	239.3	735.2	44.5

1/ Textiles and apparel products classified in schedule 3 of the TSUS, and headwear and gloves classified in subpts. B and C, pt. 1, of schedule 7.

Source: Commodity Trade Statistics, series D, United Nations, 1974-81, and the U.S. Department of Commerce, 1982 and 1983.

1/ These two figures are from the United Nations, Commodity Trade Statistics, Series D, 1974. All figures of this paragraph are from United Nations trade statistics and the official trade statistics of the U.S. Department of Commerce, unless stated otherwise. Textile products include textile fibers (SITC category 26), textile yarn and fabrics (SITC category 65), and apparel or clothing (SITC category 84).

2/ The Arrangement Regarding International Trade in Textiles is commonly called the Multifiber Arrangement. The effective date of China's accession to the MFA was Jan. 18, 1984.

The first petition against textile imports from China was filed with the U.S. International Trade Commission by the Work Gloves Manufacturers Association of Libertyville, IL, on December 15, 1977. 1/ Following receipt of the petition, the Commission instituted an investigation (No. TA-406-1) to determine, with respect to imports of certain cotton gloves from China, whether market disruption existed. In March 1978, the Commission determined that market disruption did not exist. It was the first Commission investigation under section 406 of the Trade Act of 1974, which deals with market disruption by imports from a Communist country. 2/ As no market disruption was found, the United States imposed no restrictions on imports of cotton gloves from China.

Without trade restrictions, imports of highly competitive Chinese textiles continued to increase, despite the substantially higher tariff rates in column 2 of the tariff schedules that applied to all Chinese products prior to the extension of MFN treatment to China in July 1979. Under the circumstances, President Carter ordered unilateral quantitative restrictions on seven items of Chinese apparel in May 1979 and two additional items in October 1979. The quantitative restrictions were removed on September 17, 1980, when the first bilateral textile agreement between the two nations was signed.

The agreement was not as effective as U.S. producers expected. In coping with the quantitative restrictions provided by the agreement, China adopted an upgrading and shifting trade strategy. It improved the quality of restrained items and increased its exports of those items which were not subject to the restraint. As a result of this strategy, China was able to maintain the high growth rate of its textile exports. In 1981, U.S. textile imports from China reached $733.9 million, representing a 66.6-percent increase over those of the previous year. The increasing penetration of China's textiles into the U.S. market caused serious concern on the part of the U.S. textile industry and posed a new threat to other textile-exporting countries. The domestic industry wanted a more restrictive agreement to slow the increasing rate of textile imports. China wanted to export more textile products to the United States so that it could import more machinery and equipment for its economic development projects. The different objectives of the two sides caused difficulties in negotiating a new agreement in August 1982.

Following the expiration of the United States-China textile agreement and a breakdown in negotiations in January 1983, the United States instituted unilateral import restrictions on Chinese textiles. China immediately

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1/ For a complete list of Commission's investigations on imports from the People's Republic of China, see app. A.

2/ For details of the investigation, see Certain Gloves From the People's Republic of China: Report to the President on Investigation No. TA-406-1 . . ., USITC Publication 867, March 1978.

retaliated by barring further contracts for U.S. manmade fiber, soybeans, and cotton and by announcing a reduction in planned purchases of U.S. agricultural products. In fact, the Chinese stopped buying American wheat and did not resume these purchases until a new textile accord was reached in August 1983. 1/ It was the first major trade disagreement between the United States and the People's Republic since the resumption of bilateral trade in 1972.

The dual exchange-rate system

After the new agreement came into effect, the U.S. textile industry disagreed with its terms and filed a countervailing duty (CVD) petition claiming that China's dual exchange rate conferred a subsidy on its textile exports. 2/ This petition added a new dimension to the textile trade problem.

A number of developing countries have adopted some measures of export promotion and import restrictions to control their balance of payments. A variety of methods, such as tax incentives, foreign exchange controls, low interest rates for export credit and loans, and duty exemptions for raw materials to be used for producing exportable goods, can be used for the same purpose. In January 1981, China introduced an internal settlement rate of 2.8 yuan to the dollar for all external transactions, both export and import, in addition to its official exchange rate, which is allowed to float with other currencies in the international market. The American textile interests argued that the dual exchange-rate system aims at export promotion. 3/ For the past 3 years, the official exchange rate has been lower than the internal settlement rate. As of May 31, 1983, for instance, the official exchange rate was 1.9939 yuan to the dollar, which was 40.4 percent lower than the

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1/ For details of the new agreement, see U.S. Department of State Press Release, No. 370, dated Oct. 18, 1983.

2/ On Sept. 12, 1983, the American Textile Manufacturers Institute, joined by the Amalgamated Clothing & Textile Workers Union, and the International Ladies' Garment Workers Union, filed the countervailing duty petition with the U.S. Department of Commerce.

3/ The Government of the People's Republic of China has full authority to disapprove any importing requests. The dual-rate system may have been designed for trade promotion. The Chinese Government controls foreign exchange very strictly. According to a criminal law, illegally buying foreign currencies is one of the criminal activities that seriously endangers the State and its citizens. No commercial money markets or black markets for trading foreign currencies are known in China.

settlement rate. The difference between the two exchange rates, if fully countervailable, could have resulted in a countervailing duty of 40.4 percent ad valorem. 1/

The first CVD investigation applied to a Communist country.--After receiving the petition, the U.S. Department of Commerce instituted an investigation on October 4, 1983, and planned to make a preliminary determination on December 6, 1983, as required by law. For several reasons, the investigation soon attracted attention from countries around the world. First, it was the first countervailing duty (CVD) investigation on imports from a Communist country. Communist countries watched carefully the unprecedented issues raised by the complaint, including whether U.S. countervailing duty law could feasibly be applied to nonmarket economy countries. 2/ Second, a dual or multiple exchange-rate system is not uncommon in developing countries. 3/ Most developing countries exercise strict foreign exchange control and follow policies of export promotion. They might have changed their international monetary policies if the investigation had been affirmatively determined. For China, the situation could have been even

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1/ A countervailing duty petition can be filed under two separate provisions of law: (1) subtitle A of title VII of the Tariff Act of 1930, as added by the Trade Agreements Act of 1979 (19 U.S.C. 1671), and (2) sec. 303 of the Tariff Act of 1930 (19 U.S.C. 1303), as amended by the Trade Agreements Act of 1979. The provisions of subtitle A of title VII apply to imports from countries that have assumed the obligations (or substantially equivalent obligations) of the Multilateral Trade Negotiations agreement on subsidies and countervailing measures. Sec. 303 provisions apply to imports from all other countries. Imposition of countervailing duties for an investigation under the provisions of title VII requires affirmative determinations from both the U.S. Department of Commerce that the imports are, in fact, subsidized, and from the U.S. International Trade Commission that the imports are materially injuring a domestic industry. Section 303 investigations require only a finding of subsidization, not injury. Since the petition was filed under sec. 303 and textile imports were not duty-free articles, the Commission's participation in the investigation was not required.

2/ The U.S. Department of Commerce made its first ruling on this issue on Feb. 17, 1984, in two cases involving carbon steel wire rod from Czechoslovakia and Poland. Although Commerce made negative findings on these complaints, it ruled that "nonmarket economy countries are not exempt per se from the countervailing duty law."

3/ A number of countries used a multiple exchange-rate system in their early stage of economic development. A multiple exchange-rate system is a method of subsidizing exports and taxing imports. In a developing country, for instance, a firm needing imports of raw materials to produce an exportable product may buy foreign exchange at a lower rate than the rate set for importing consumer goods.

worse. The investigation could have resulted in an additional 40.4 percent (ad valorem) duty on Chinese textiles. Furthermore, an affirmative determination of the investigation could have set a precedent which could be applied to all imports from China, including gasoline and mineral products. China responded with concern and refused to cooperate in the Commerce Department's investigation. They argued that the exchange rate difference is an internal affair. The Chinese also reacted by again ceasing their purchase of U.S. grain.

A temporary compromise.--After negotiations between the industry and Department of Commerce, the industry withdrew the petition in return for an administration promise to provide additional protection against market disruption from textile imports worldwide. 1/ On December 16, 1983, the Administration issued new criteria for automatically reviewing textile imports to determine if they were disrupting, or threatening to disrupt, the U.S. market. 2/ The new rules, which provide additional protection, relaxed, at least temporarily, the tense trade relations between the two countries. Although China was dissatisfied with the new rules and criteria, it did not take any further retaliatory actions. 3/ The criteria are not discriminatory and apply to all textile exporting countries. At the present time, China follows the rules and criteria set by the United States.

1/ Lawson, op. cit., p. 2.

2/ The new criteria are (1) the total growth in U.S. imports in that product or category is 30 percent or more in the most recent year, or the ratios of total imports to domestic production in that product or category is 20 percent or more; and (2) imports from the individual supplier are 1 percent or more of the total U.S. production in that product or category. If these conditions apply, a call for consultations may be made on an uncontrolled import category.

3/ According to Foreign Broadcasting Information Service, Daily Report: China, Jan. 23, 1984, p. A-1, while attending the meeting held by the Textile Committee, GATT, on Jan. 19, 1984, the representative of the People's Republic of China indicated that the new U.S. criteria had the effect of increasing protectionism and was contrary to the MFA. In addition, he mentioned that shortly after the signing of the United States-China bilateral textile agreement, the United States had imposed antidumping duties on two categories imported from China and had called for consultation on nine new categories of products. The two categories under antidumping duty investigations in 1983 were cotton shop towels, and greige polyester/cotton printcloth. The Commission made affirmative determinations on these two investigations.

Human rights and trade

Another issue that might affect the bilateral trade between the United States and the People's Republic of China is human rights. The United States established a freedom-of-emigration section in the Trade Act of 1974. Section 402 of the Trade Act of 1974, the so-called Jackson-Vanik amendment, prohibits the extension of MFN treatment to the products of any nonmarket economy country that denies or severely restricts emigration by its citizens. However, it also permits the President to waive the prohibition if he determines that granting a country MFN status would promote free emigration. The President is required by law to conduct a MFN review and make recommendations to Congress for renewing or terminating the treatment at an interval of 12 months.

MFN treatment and freedom of emigration.--Since adopting an open-door trade policy in 1979, China has liberalized its emigration policies, but there are still some restrictions. For example, it is easier for a senior citizen to secure an emigration permit than for a young person of a productive age. It is also easier for an unskilled laborer to get a permit than for a skilled laborer. 1/ Nevertheless, the major obstacle to emigration from China is the inability or unwillingness 2/ of other countries to receive the large number of people who are able and willing to leave. Since the incident of Hu Na, a member of a visiting Chinese tennis team who defected to the United States in December 1982, the Chinese authorities have taken a more liberal attitude to asylum cases. 3/ In answering a question relating to the defection of a Chinese diplomatic courier, General Secretary Hu Yaobang expressed his opinion that if the defection was true it would not make much difference in his homeland; there are a billion Chinese there, Hu observed. 4/ China has been found to meet the requirement for the extension of MFN treatment set forth in section 402 of the Trade Act of 1974. In fact, MFN treatment has already been renewed three times.

Export controls

For national security reasons, the United States has imposed restrictions on the export of high-technology goods and strategic materials to Communist countries, including China. After implementing the open-door policy in 1979,

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1/ Based on several staff interviews with recent immigrants from China.

2/ According to the U.S. Department of State, Country Reports on Human Rights Practices for 1983, February 1984, p. 751, the U.S. Embassy and Consulates in China issued over 6,000 immigrant visas in fiscal year 1983, with 80,000 applicants on the waiting list.

3/ After the United States granted asylum to Hu Na, China retaliated immediately by suspending cultural exchange programs between the two countries.

4/ Hu Yaobang expressed his view to reporters at a press conference during his visit to Japan on Nov. 26, 1983. For details on the press conference, see The Washington Post, Nov. 27, 1983, p. A26.

the Chinese authorities repeatedly expressed an interest in acquiring advanced U.S. equipment and technology to modernize China's economy. They were particularly concerned about the restrictiveness of the controls. Meanwhile, American businessmen complained that uncertainty--not knowing whether their products would be licensed for export to China--seriously hampered their development of the Chinese market. As trade relations and trade volumes between the two countries increased each year, calls for a further relaxation of U.S. export controls were voiced increasingly by the Chinese Government and by the U.S. private sector.

Relaxation of export controls.--An easing of export restrictions had begun in 1980. In April 1980, the U.S. Department of Commerce removed China from the list of countries that includes the U.S.S.R. and Soviet bloc countries and designated a new export control group (country Group P) to cover only China. In July of the same year, President Carter approved a new set of export licensing criteria for China, which enabled exports to China to be treated more liberally than those to the Soviet Union and other controlled countries. In November, the licensing of dual-use goods and technology for export to China was effectively suspended pending a policy review by the incoming administration. 1/

In evaluating U.S. commercial policy toward China, the Reagan administration reviewed three types of U.S. trade restrictions: (1) controls on the export of dual-use goods and technology, (2) the regulations prohibiting the sale of arms to China, and (3) statutory restrictions based on China's previous association with the Soviet bloc. 2/ On July 8, 1981, the Department of Commerce issued a statement that described the new criteria for granting licenses for the export of dual-use goods and technology to China. Interagency reviews were eliminated; neither the Department of Defense nor the Department of State would any longer review the applications granted by the Department of Commerce. On December 29, 1981, the administration reaffirmed that the general licensing policy is to approve products of significantly higher technical levels for export to China than would be approved for export to other controlled countries. The Reagan administration has also revised regulations to permit the sale of arms to China. The International Traffic in Arms Regulations includes a provision that denies the approval of U.S. arms exports to certain enumerated countries. Effective

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1/ The dual-use goods and technology refer to those goods and related technology, including technical data and services, having both civilian and potentially significant military applications.

2/ The last group of restrictions includes provisions in the Foreign Assistance Act of 1961 (which excludes China from eligibility for U.S. development assistance), the Agricultural Trade Development and Assistance Act of 1954 (which excludes China from concessionary financing under Public Law 480), and the Trade Agreements Extension Act of 1951 (which prohibits U.S. imports of seven categories of furs from China and the Soviet Union). For a more detailed description of relaxation of export controls in 1981, see 29th Quarterly Report . . ., USITC Publication 1236, March 1982, pp. 32-34.

December 14, 1981, China was removed from this list. 1/ License applications for commercial arms sales to China will now be considered on a case-by-case basis. Thus, export controls have been relaxed substantially.

Move to category V.--Remaining guidelines were still restrictive on high-technology exports. China could not procure everything it wanted from the U.S. market. In 1983, China raised the issue in their bilateral relations with the United States. Premier Zhao told Secretary of State Shultz in Peking that China regarded U.S. policy on this issue as a test of whether the United States considered China as a friend or a potential enemy. 2/ Secretary Shultz returned and ultimately the issue was taken to the President.

When Commerce Secretary Baldrige arrived in Peking in May 1983, he was able to tell the Premier that China had been moved to a less restrictive group, category V under the export control regulations, which includes other friendly countries. However, even under category V, China cannot purchase high-technology products that can be used for military purposes. In November 1983, new guidelines implementing the President's decision on export control were published. The Chinese responded with satisfaction, and American businessmen responded with a rush of new license applications. The importance of the change in export control policy, however, transcended its commercial implications. It has been repeatedly noted by Chinese leaders as the turning point in U.S.-Chinese relations which made possible Defense Secretary Weinberger's trip, negotiations on nuclear cooperation, the Premier's visit, and the President's trip to China. 3/

However, issues of export controls have not been settled completely. China has not been treated the same as U.S. allies. The restrictions on dual-use goods are still applicable to category V countries. As indicated by their economic development plans, the Chinese authorities give top priority to developing China's energy and petroleum industries. They are particularly interested in U.S. nuclear technology. However, procedures covering the transfer of nuclear technology from the United States to any Communist country are complicated, and it takes time to negotiate terms and conditions for the transfer.

Nuclear cooperation agreement.--In order to solve its severe energy problem, Chinese authorities have decided to build 12 nuclear power plants before the year 2000. In mid-1982, when they announced construction of the first nuclear power plant (an 1,800-megawatt installation) in Shenzheng, a city near Hong Kong, U.S. companies were asked to submit cost estimates for the project. However, due to the lack of a nuclear cooperation agreement between the two countries, the U.S. companies could not participate in any

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1/ U.S. Department of State, Munitions Control Newsletter, No. 92, December 1981, 46 F.R. 60820.

2/ Lawson, op. cit., p. 2. Any further relaxation of export control is unlikely. According to the 1982 Chinese constitution, the Government must pursue an independent foreign policy. It is unlikely that the People's Republic of China would become an ally with the United States or with the Soviet Union. Also, China would lose its leadership in the Third World if it were to become an ally of one of the two superpowers.

3/ Ibid., p. 3.

nuclear plant construction. 1/ Negotiations on U.S.-Chinese nuclear cooperation began in 1981. An agreement could not be reached for two reasons. First, the Atomic Energy Act of the United States requires China to accept rigid conditions to prevent nuclear materials, components, and technology from reaching other countries. Under this requirement, the United States would inspect the waste from the fuel it supplied. Second, the Chinese authorities regarded any foreign inspection as an offense to the dignity of an independent sovereign State. Such inspections would also violate one of the principles Deng voiced at the United Nations in 1974. 2/ In addition, China has different views on the international nonproliferation treaty. Although China has had nuclear weapons since 1964, it has refused to sign the international nuclear nonproliferation treaty, considering it a means by which the United States and Soviet Union have sought to perpetuate their nuclear superiority. Also, participation in this treaty could harm China's leadership role in the Third World.

During President Reagan's trip to China in April 1984, he and Chinese Premier Zhao Ziyang initialed a bilateral agreement on peaceful nuclear cooperation. The accord must be reviewed by U.S. experts in nuclear law and, if approved for signing in its present form, will also be subject to congressional review. 3/ The accord will allow U.S. firms to bid on contracts for 12 nuclear power stations that China plans to construct with foreign equipment and technical assistance by the year 2000. The initiation of the bilateral agreement has paved the way for the transfer of nuclear technology from the United States to China.

The question of whether nuclear power is more efficient than thermal power or hydropower alternatives within China is not within the scope of this study. Energy projects are directly related to China's economic development and the volume of bilateral trade between the United States and China. Therefore, it is worth mentioning briefly the overall supply and demand conditions of China's energy industry complex, especially the electricity industry.

Energy shortage and electricity production in China.--One of the bottlenecks of Chinese economic development is energy. The energy shortage in China is a very serious one. It cannot be solved within the century unless

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1/ In March 1983, China made agreements in principle with two European companies for constructing its first nuclear power plant. These were Framatome, the State-owned French nuclear firm, which will supply the reactor and related services, and the United Kingdom's General Electric Co., which received an offer to supply the power-generating turbines.

2/ This principle indicates that all developing nations are entitled to permanent sovereignty over their national resources and to the control and management of all foreign capital, particularly "transnational corporations," including nationalization.

3/ Up to October 1984, the Reagan administration had not sent the accord to the Congress for review.

some new technology, such as efficient production of synthetic oil from coal, is acquired.

According to Li Peng, 20 percent of production capacity in all sectors of the Chinese economy cannot be fully utilized due to the shortage of electricity. There are between 300 million and 400 million peasants who have no electric power supply. 1/ The 600 million to 700 million people who have electricity are under consumption constraints, that is, their consumption is limited by either the volume of electricity or by hours of use. These constraints are also in existence in primary energy usage. 2/ For years, the Chinese Government has followed a strict energy conservation policy. Under Government orders, industries are required to reduce power consumption per unit of their output, and residents are required to ration their daily energy consumption. 3/ Due to the shortage of other sources of energy, human energy is widely used in production. 4/ Economic development requires replacing such human energy with fuel-generated power. However, any mechanization of the

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1/ Li Peng, one of four Chinese Vice Premiers, is in charge of energy development. Li wrote an article entitled "Electricity Has the First Priority in Economic Development," in Red Flag, vol. 1983-18, Sept. 16, 1983, pp. 17-22, and 29. Li estimated that more than 300 million peasants have no electric power supply. The Ministry of Water Resource and Electric Power estimated that about one-half of all rural families did not have electric power in 1979. Since Chinese authorities usually use the 800 million figure for rural population, this indicates that 400 million people did not have electric power.

2/ Energy can be divided into two categories, primary and secondary. Coal, wood, oils, and other energy-generating materials are primary energy. Electricity is a secondary energy. Hydropower and human power are both primary and secondary energy.

3/ On Apr. 15, 1981, the State Council issued the Second Order of Energy Conservation which listed all restrictions on industrial and residential use of electricity. On Apr. 16, 1981, the State Council issued the Third Order of Energy Conservation which listed all restrictions on industrial and residential use of petroleum products. For instance, art. 11 of the Third Order prohibits the use of using diesel oil for cooking or heating, and supplying agencies are required to limit their supply of kerosene to hospitals, patients, and other important field units.

4/ Many machines in China are energized by human hands (by cranking) and legs (by paddling). Most vessels in rivers move by wind (sailing) or human energy (rowing). Only a fraction of ships or other river vessels have fuel-fired engines. Labor-intensive methods are commonly utilized in farming and construction works. For instance, in his after-visit report entitled "Socialism in China," W. W. Leontief wrote: "The well known industrial exposition in Canton contained displays of foot-pedal-powered movie projectors and operating-room equipment . . . ." in The Atlantic Monthly, March 1973, pp. 74-78 and 81.

means of production would push up demand for fuel-generated energy and make the shortage problem more serious. The problem can be solved only by raising the supply of energy.

According to official Chinese statistics, output of primary energy increased dramatically from 51.92 million tons of standard fuel in 1953 to 667.72 million tons of standard fuel in 1982, or by 9.2 percent annually. 1/ Traditionally, coal has been the major energy source. Coal production increased from 70 million tons in 1953 to 666 million tons in 1982. 2/ However, its share in total energy production decreased from 96.3 to 71.2 percent within the 30-year period. Crude oil production increased from 0.62 million tons in 1953 to 102.12 million tons in 1982, and its share in total energy production rose from 1.7 to 21.9 percent. During the same period, natural gas production increased from 11 million to 11,930 million cubic meters; its share in total energy production rose from less than 0.1 to 2.4 percent. Natural gas has never been a major source of Chinese energy. During the 30-year period, the share of hydropower energy in total energy production grew moderately from 2.0 to 4.5 percent. It is expected that the share of crude oil in total energy production will decline in the future. This is due not only to the new energy source (nuclear power), but also to changes in Chinese energy policy. In the late 1970's, Chinese authorities decided to increase their exports of petroleum products and crude oil to earn the hard currency which is badly needed for the four modernizations. Under this policy, China will not build any new oil-fired thermal power stations. 3/

During the 1953-82 period, total domestic consumption of energy in China increased from 54.11 million tons of standard fuel to 619.37 million tons of standard fuel, representing an annual growth rate of 8.8 percent. 1/ The share of coal in total energy consumed declined from 94.33 percent in 1953 to 73.92 percent in 1982. The share of crude oil in the total energy consumed increased from 3.81 to 18.67 percent. It reached the record high of 23.0 percent in 1976 and then decreased in following years. A further decline is

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1/ All fuels were converted into standard fuel with thermal equivalent of 7,000 kilocalories per kilogram. For more details on the conversion, see footnotes to table B-15.

2/ For total energy production and its composition for 1952 through 1982, see table B-15. On Apr. 29, 1984, the State Statistical Bureau announced 1983 outputs of selected commodities. Production of coal, crude oil, and natural gas in 1983 totaled 715 million, 106.07 million, and 12,210 million cubic meters, respectively. The announcement was published in People's Daily, Apr. 30, 1984, pp. 1, 2, and 4.

3/ Li, op. cit., p. 19. In the 1970's, many coal-fired thermal power stations were redesigned to oil-fired power stations due to air pollution considerations. According to current oil conservation policies, these redesigned oil-fired thermal stations are being rebuilt to coal-fired thermal stations, i.e., they are being returned to their original designs.

expected. For the same period, the share of natural gas in total energy consumption increased from 0.02 to 2.56 percent, and the share of hydropower rose from 1.84 to 4.85 percent. Domestic consumption of energy is the quantity imported and supplied domestically less the amount exported. Modernization projects force China to export its energy, which is in short supply domestically. A portion of primary energy is used to generate electric power.

Output of electricity increased from 7.3 billion kWh in 1952 to 351.4 billion kWh in 1983, representing an annual growth rate of 13.3 percent. Installed capacity of the Chinese electric power industry increased from 1,850 mW in 1949 to 72,360 mW in 1982, representing an annual growth rate of 11.8 percent. As Li observed, the level of consumption of electricity is an indicator of the modernization level of a nation's economy. In 1982, Chinese electricity generation per capita was 320 kWh. 2/ A large portion of electricity is consumed by industrial sectors. Households in rural areas consume only a small portion of the total electricity output. In 1979, for instance, the structure of electric energy consumption in each sector of the economy was as follows: house consumption of power stations together with line losses, 15.1 percent of total consumption; industrial sector, 65.4 percent (55.3 percent for heavy industry and 10.1 percent for light industry); agricultural sector, 13.6 percent; transportation sector, no more than 0.5 percent; and municipal and residential sectors, only 5.4 percent. 3/ In 1979, outputs of heavy industry and light industry were Y252.5 billion and Y195.8 billion, respectively. This implies that one kWh of electricity could produce 1.62 yuan worth of heavy industry output and 6.87 yuan worth of light industry output. As far as energy consumption is concerned, a quadrupling of light industry output is relatively easier to achieve than a quadrupling of heavy industry output. 4/

To meet the increased demand for electricity derived from its long-term economic development objectives, China has tried very hard to build up the installed capacity of the electric power industry. Li is interested in nuclear power plants. He initialed a nuclear cooperation agreement with West Germany on May 15, 1984, in Bonn. China plans to build 12 nuclear power stations along the coast, where most industrial centers and special economic zones are or will be situated. Thus, these plants will not help most people who do not have electricity, since they live in mountainous and rural areas in inland provinces.

1/ For annual energy consumption and its composition, see table B-16.

2/ Li, op. cit., p. 18.

3/ These figure were from Almanac of China's Economy 1981, pp. 503 and 504. Total power production in 1979 was 282.0 billion kilowatt-hour.

4/ The long-term economic development objective is to quadruple gross value of industrial and agricultural production in 20 years. No growth rates are set for individual sectors.

It is not clear whether nuclear power is the best solution to China's energy problem. In the United States, electricity generated by nuclear fuel accounted for only 13 percent of its total electric power production. 1/ A country like China, with abundant coal mines, sufficient crude oil, and high hydropower potential, may have several solutions to the problem. 2/ China has expressed an interest in U.S. hydropower, nuclear power, and coal-mining technology, and its energy development projects will have an impact on its imports from the United States.

1/ At the end of 1983, there were 309 nuclear power reactors located in 26 countries in the world with a total installed capacity of 180 million kW. France has the highest share of nuclear power of its own total power generation, 48 percent; India has the lowest, 3 percent. The shares of Japan and the Soviet Union were 19 and 7 percent, respectively. For shares of other countries, see "Nuclear Power Plants in the World in 1983," in People's Daily, May 18, 1984, p. 4.

2/ One possible hydropower source which may help solve problems of electricity shortages in both industrial centers and rural areas is the Three Gorge Project. The Three Gorge Project was considered by the United States and China in the early 1940's. The purpose of the Three Gorge Dam is fourfold: It would increase the power supply, control Yangzi River floods, facilitate river navigation, and improve irrigation. Estimated installed capacity of this hydropower station was 25,000 mW, more than one-third of China's total installed capacity, and estimated direct investment was $6.6 billion in 1980. For a more detailed discussion on the Three Gorge Dam, see "Three Gorge Dam, Why it Should be Built," Engineering News-Records, Nov. 6, 1980, pp. 44-47. According to a People's Daily report, Chen Muhua, the minister of Chinese Foreign Economic Relations and Trade, showed her interest in development of hydropower in the Three Gorge area when she attended the second meeting of U.S.-China Joint Trade Council in Washington, DC, on May 9, 1984. Hydropower is one area in which China would like to cooperate with the United States. See People's Daily, May 11, 1984, p. 6, for other areas in which China plans to cooperate with the United States. A recent issue of the Engineering News-Records, May 3, 1984, p. 12, states that U.S. and Chinese negotiators are still 4 to 6 weeks away from signing a technical assistance contract for the Three Gorge Dam. On Aug. 3, 1984, the United States and China signed a technical cooperation agreement in Beijing whereby the Bureau of Reclamation, U.S. Department of Interior, will provide technical help in the design and construction of the Three Gorge Dam. For more details on the agreement, see Engineering News-Records, Sept. 6, 1984, p. 66.

CHAPTER 4. THE EFFECTS OF CHINA'S ECONOMIC DEVELOPMENT ON U.S.-CHINESE TRADE

Having examined China's economic development plans and trade policies, it remains to determine their impact on bilateral trade between the United States and the People's Republic of China. Once this impact is determined, the effects on the U.S. economy in terms of production or employment can be projected. As this study is interested only in near-term projections, a dynamic model is not required. However, this study does use multiple regression analysis and static input-output techniques, to make the near-term projections. 1/ The projections in this study, like most other economic projections, are based on a number of assumptions about circumstances that cannot be measured, either because data are not available or because they involve predicting future political events.

This chapter consists of three sections. Section 1 is a short examination of the recent quantitative analyses of China's economy which are related to this study. Section 2 contains the assumptions on which the projections of this study are based. In section 3 the projections are given. The statistical model is specified in detail in appendix C.

A Brief Examination of Recent Quantitative Analyses on China's Economy

Before 1982, the Chinese Government had never systematically published its national income accounts, trade statistics, or any other social or economic data that could be used for meaningful studies on the country. The lack of such data made quantitative research on China's economy almost impossible. Nevertheless, a large number of American experts on China set their own assumptions, used their own estimating methods, and created their own social and economic statistics for China. Many of them extrapolated China's gross national product (GNP), even though there has never been an economic indicator in China known as GNP nor any that are equivalent to GNP. 2/ Others estimated outputs of different sectors of the Chinese economy, including items under national income accounts, such as personal consumption, fixed capital formation, exports, and imports. 3/ In most cases, differences

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1/ For details on input-output techniques, see W.W. Leontief's Input-Output Economics, New York: Oxford University Press, 1966.

2/ The main economic indicator of China's economy is gross value of industrial and agricultural production, which differs from American GNP not only in coverage, but also in concept. For the definition of gross value of industrial and agricultural production, see the Explanatory Notes in app. B.

3/ In his book entitled Quantitative Measures of China's Economic Output, (Ann Arbor: The University of Michigan Press, 1980), Alexander Eckstein referenced 151 papers and books and mentioned more than 100 names of researchers who made estimates of one or more of the economic variables of China's economy. It is the most comprehensive survey of quantitative analyses of China's economy published in the United States.

among these estimates were very large. 1/ The increase in the number of economists estimating the Chinese social and economic variables did not drop until October 1982, when the State Statistical Bureau systematically published its first time-series statistics. The publication of the official statistics ended a three-decade-long guessing exercise.

Publication of official statistics has not solved all the data problems. Some readers could not fully understand definitions and coverages of social and economic variables due to incomplete explanations in the yearbook or due to lack of understanding of China's economic concepts, which are based heavily on Marxism. Others doubted the accuracy of the official statistics, especially for the years 1966 through 1976, when the State Statistical Bureau's operations were virtually suspended due to the Great Cultural Revolution. However, the State Statistical Bureau expressed full confidence in its estimated statistics for those 10 years. 2/ Although the official statistics are not perfect, they are good enough for the purposes of most research, and the State Statistical Bureau is in a better position than any other agency or individual to estimate China's national income statistics. Therefore, the present study relies on only those econometric and input-output models that used State Statistical Bureau data.

Econometric analysis

So far, the Chinese Government has not published any macro or sectorial models for the purpose of its economic planning. However, there are several econometric models of China's economy available in the United States. Most of these models were used either to estimate historical Chinese data, or to describe a particular sector of China's economy. The only known econometric model that used State Statistical Bureau data is the one built for the U.S. Department of State. 3/

1/ For instance, in his article entitled "Quantitative Measures and the Analyses of China's Contemporary Economic Evolution: Problems and Prospects," Robert F. Dernberger selected, from a number of studies, eight sets of estimates for China's aggregate output, 1958-74. Using an index of output based on 1957 (1957=100) the mean of the estimates was 166.7 and the standard deviation was 26.9. The highest estimate was Dwight Perkin's, 184.8, and the lowest was S. Swamy's, 125.3, as shown in Dernberger's article. According to the State Statistical Bureau statistics, the output indexes of China's gross social product and gross value of industrial and agricultural production were 235.9 and 252.9, respectively. For other estimates, see Dernberger's article which was included in Eckstein, op cit., pp. 1-43.

2/ Li Chengrui, director of the State Statistical Bureau, wrote an article to explain reliability of the statistics for the Great Cultural Revolution period. His article entitled "Are the 1967-76 Statistics on China's Economy Reliable?" was published in Beijing Review, Mar. 26, 1984, pp. 21-29. His coverage of the period of the Cultural Revolution, extends from May 1966 to October 1976. Chairman Mao died on Sept. 9, 1976.

3/ The U.S. Department of State provided a contract to Lawrence Lau and Barry Ma of Stanford University to build an econometric model of the People's Republic of China. An early version of the model is available. The model is being revised.

The Department of State model.--An early version of the Department of State model consisted of 8 blocks and had a total of 79 estimated equations and identities. 1/ The eight blocks are major production sectors, gross domestic product, labor force allocation, employment, investment and capital accumulation, international trade, gross domestic product by final expenditures, and balance of payments. Most of the near-term forecasts derived from the model appear reasonable.

The Commission model.--There are three blocks of equations in the model used in this study. The model includes one population equation, one consumption equation, one investment equation, two income equations, three export equations, and three import equations. The structure of the model is simple and its application is straightforward. 2/

One of the features of this model is that equations are fitted with net values rather than gross values of production variables. If gross values of economic variables, such as gross social product, gross value of industrial production, and gross value of agricultural production, are used, it would be difficult for Western economists to interpret the estimated structural coefficients, because these gross values include values of intermediate goods. All estimated coefficients of variables and equations included in the Commission model are presented in app. C.

Input-output analysis

Both econometric and input-output models are needed for economic development planning, especially for nonmarket economy countries. Final demand in the future can be predicted by an econometric model, but how much should be produced, including production of intermediate inputs, to meet the predicted final demand is a question that can be answered only with the aid of an input-output model. China does have an input-output model, although it has no macroeconometric model.

The Chinese input-output model.--During 1974-76, Chen Xikang and his associates in the Chinese Academy of Sciences constructed a table showing the input-output structure of Chinese economy for the year 1973. However, the

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1/ It is quite likely that estimates to be generated by the new version of the model will differ from those cited in this study.

2/ To build a sophisticated macro model for China would require an effort beyond the scope of the present study. Also, the full cooperation of the Chinese Government would be needed, because values of some economic variables, such as capital stock and interest rates, are not published.

Chinese Government never published the model and treated it as official-use material. 1/ Chen introduced a small portion of the model in an article published in 1981. 2/ According to the article, the model includes 61 sectors and that all input elements are in terms of physical units. 3/ For example, the model shows that to produce the total output of 166.76 billion Kilowatthours (kWh) in 1973, the electricity industry required 71 million tons of coal, 10.91 billion kWh of electricity, 4.638 tons of oil, and unspecified amounts of other inputs. The main advantage in using physical units is that users can compare directly the technologies of different countries. For instance, in 1973, China used 1,146 kWh of electricity to produce 1 ton of steel. In contrast, the Soviet Union used only 549.2 kWh of electricity to produce 1 ton of steel in 1972. 4/ Apparently, different technologies were used in the two countries. On the other hand, the main disadvantage in using an input-output model in physical units is that it cannot be used to estimate output with a given set of inputs measured in money terms, or vice versa. Because all elements in the model are in different units, e.g., kWh/tons or meters/kilograms, mathematical operations with the model are very difficult. Since many commodities and services do not have prices in nonmarket economy countries, the use of physical units in the Chinese input-output model is understandable. 5/

The Commission table.--It is very difficult to use an input-output table in physical units for the purpose of economic planning. It is more practical to construct and use an input-output table of China's economy in terms of value. By using published Chinese data on production of the six sectors under national income accounts in 1973, a very aggregated input-output table can be constructed for China's economy. The direct-requirements version of the table for industry output in 1973 is given in the following tabulation (in yuan):

1/ Any official-use materials are not available outside of China, although they might be released to other agencies of the Chinese Government.

2/ Chen Xikang, "Input-output Analysis and the Study of the Structure of the Economy" in Ma Hong and Sun Zangqing, eds., Studies of Issues in the Structure of China's Economy, (Zhongguo Jinji Zhekou Wenti Yanjiu, Beijing: People's Publishing House, 1981), pp. 760-89.

3/ The 61 sectors include 6 agricultural sectors, 10 light industrial sectors, 43 heavy industrial sectors, 1 construction sector, and 1 transportation sector. For more details, see Chen's article.

4/ Chen, op. cit., p. 769.

5/ The two things in Chen's article that are not understandable are his negative steel production in 1973 and his total-requirement coefficients. Using his coefficients may result in a situation in which final demand in a sector may be smaller than the total demand of the same sector. According to official Chinese statistics, China produced 25.22 million tons of steel in 1973 (table B-4). In Leontief's input-output concept, total demand is always greater than final demand. Chen indicated in his article that China did not have an input-output table in value terms. In March 1984, Chen told Leontief, who was visiting the Chinese Academy of Sciences, that a new input-output table is being constructed.

Industry	Agriculture	Light industry	Heavy industry	Construction	Transportation and telecommunications	Commerce
Agriculture	0.2242	0.2667	0.0	0.0	0.0	0.0340
Light industry	0.0421	0.2245	0.0321	0.0245	0.1023	0.0420
Heavy industry	0.0810	0.0433	0.5643	0.0782	0.4982	0.0910
Construction	0.0	0.0042	0.0134	0.0	0.0	0.0
Transportion and telecommunications	0.0067	0.0123	0.0410	0.0643	0.029	0.0849
Commerce	0.0132	0.0100	0.0042	0.0082	0.020	0.0271

The entries in each column of this tabulation give the direct requirements of the industry at the top of the column from each industry along the left margin needed to produce one yuan of output.

Assumptions and Rationale

Many of the foreign and domestic policies of the People's Republic of China have changed in the past 15 years. It will be difficult to predict China's foreign and economic policies in another 15 years. Projections of this study cover only the near future (1984-87). Therefore, the assumptions refer only to this period.

Assumptions on China's international affairs

China's trade policy is strongly affected by political considerations. Thus, it is necessary to make some assumptions on China's foreign relations in order to predict future trade flows. Generally speaking, China will not make substantial changes in its foreign policy toward the United States or the Soviet Union through 1987. But China's current bilateral relations with some countries might be changed.

Relations with the Soviet Union and the Third World.--The following assumptions are made with respect to China's economic relations with the Soviet Union, and the Third World.

1. The Soviet Union will not become involved significantly in China's economic development, although bilateral trade between the two Communist giants may increase. 1/

1/ On Nov. 30, 1984, the Soviet Union and the People's Republic of China signed a trade agreement in Moscow, increasing the volume of their trade to 3.6 billion Swiss francs ($1.46 billion) in 1985, representing a 35.7-percent increase over their trade in 1984. When Ivan V. Arkhipov, First Vice Chairman of the Council of Ministers of the Soviet Union, visited China on Dec. 28, 1984, the two countries agreed to increase their trade even more, to 4.6 billion Swiss francs in 1985.

2. China will continue to play an active role in South to South cooperation. 1/ Its aid programs to the Third World will probably be reduced, but will not be terminated.

3. China's trade with other Communist countries will remain at the present level.

Relations with international organizations and Western countries.--Recently, China has relied on foreign investment and technology in its modernization projects, as stated in its latest economic development plans. China's door will probably remain open to the West during the next 5 years. Under the open-door policy, the following can be assumed:

1. China will actively participate in international organizations from which it will continue to receive low-interest loans for its economic development projects. 2/

2. Investment from Western countries will continue at the present low level. China may provide additional incentives for foreign investors.

3. U.S.-Chinese trade will return to its pre-1983 status. Although more Commission investigations on imports from China may be instituted, it is assumed that the 1983 trade dispute will not be resumed and that U.S.-Chinese economic cooperation will not deteriorate. 3/

1/ As most developed countries are situated in the north of the world, the south to south cooperation means cooperation between developing countries. This term is frequently used in China's economic papers and reports.

2/ Based on its 1983 national income (Y467.3 billion) and population (1,025.95 million), China's per capital income was Y455.9247 or $230.5911 (using the 1983 IMF average official rate), which is lower than the maximum set by the International Development Association of the World Bank for the right to enjoy preferential loans; therefore, China is entitled to perferential loans. According to a report released by China's News Agency (Zhonggou Xinwen She), Beijing, Aug. 8, 1984, China has signed an accord with the World Bank for a loan of $1.9 billion to fund 18 projects, which include 4 energy projects, 2 communications development projects, 4 agricultural projects, 4 intellectual development projects, and 4 medical and technological cooperation projects. For more details on the report, see Foreign Broadcast Information Service, Daily Report: China, Aug. 8, 1984, p. A1.

3/ On May 9, 1984, U.S. Secretary of Commerce Malcolm Baldrige and Chinese Minister of foreign Economic and Trade Relations Chen Muhua signed two agreements of industrial and technological cooperation. According to the agreements, the U.S. International Development Cooperation Agency will consider funding feasibility studies for several projects. The feasibility studies are limited to few construction projects such as, iron and steel, optical fiber cable and other telecommunications equipment, and petroleum-exploring equipment. Further economic cooperation seems possible, but not definite.

Assumptions on China's domestic affairs

It is assumed that there will be no changes in the political structure in China before 1988, since Deng Xiaoping seems capable of controlling the Communist Party. As long as he remains in power, Premier Zhao Ziyang and General Secretary Hu Yaobang would support each other, and no severe power struggles between the two leaders or the party factions are expected. It is hard to predict the situation in China after Deng. The assumption of a stable political situation in China is based on Deng's leadership. However, even under Deng's administration, the existing economic constraints on rapid growth will continue.

Economic constraints on rapid growth.--In his 1980 report, Milton Friedman stated that "on an absolute level, China is a very poor, backward economy . . . The great bulk of its enormous population is engaged in agriculture, and the level of productivity in industry is extremely low." 1/ Modernizing this backward economy is not an easy task, because there are many "bottlenecks" in the economy. The four major bottlenecks or constraints on rapid growth frequently mentioned by economists are low productivity in agriculture, lack of capital, lack of energy, and poor management skills. 2/ It is assumed that these four constraints will not disappear by 1987.

There are a number of problems in China's agricultural sector, including technical and institutional ones. Labor productivity of the agricultural sector is much lower than that of the industrial sector. With a labor force of 320.13 million, the agricultural sector produced only 178.5 billion yuan's worth of output in 1982, but the industrial sector produced 550.6 billion yuan's worth of output with a labor force of only 59.3 million. 3/ The labor productivity in the agricultural sector increased rapidly in the early 1980's after the Chinese Government implemented some incentive policies, such as production contracts to households (bao chan dao hu), free plots, and free markets. 4/ Output per worker in the agricultural sector increased from

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1/ These two sentences were cited from Friedman's Report to the Committee on Scholarly Communication with the People's Republic of China on Trip to China, September-October 1980.

2/ Dwight H. Perkins, for instance, listed agriculture, energy, foreign exchange, and bureaucratic management and planning as four major economic bottlenecks to rapid growth. For details on his analysis, see his article "The Chinese Economy in the 1980's," Harrison Brown, ed., China Among the Nations of the Pacific, (Boulder: Westview Press, 1982), pp. 1-14.

3/ The two values of output are gross values.

4/ This view was shared by W.W. Leontief. In a telephone interview on Aug. 15, 1984, Leontief expressed the opinion that there has been a significant increase in the labor productivity in agriculture in China. He said that during his recent visit to China in March 1984, he noticed that farmers worked very hard under the new incentive policy. However, he also noted that the industrial and foreign sectors are still controlled tightly by the Government. He does not think that the Government will relax their controls or permit private management in the near future.

Y644.35 in 1979 to Y869.96 in 1982, or by 10.5 percent per year. This rate of increase is expected to slow down when the full effect of the new policy is realized within a few years. Economies of scale in the agricultural sector are large. Under the new contract system, each farmer is allocated one to three mu (or 0.1649 to 0.4941 acres) of land. 1/ With these small farm plots, the use of capital-intensive methods is not efficient. This is a structural problem which has no quick solution.

As indicated by A. D. Barnett, the most fundamental problem of the Chinese agricultural sector is the shortage of arable land. 2/ The four modernizations have further reduced the amount of arable land available for agriculture. The total area of arable land decreased from 2.25 billion mu in 1978 to 2.17 billion mu (or 357.45 million acres) in 1982, according to Chinese official statistics. Further contraction in the arable area is expected due to planned industrialization projects. China is already unable to feed its own population from its own agriculture. In 1982, China imported 16.12 million tons of grain, and it is likely that China will continue to import large amounts of grain in the near future.

The second constraint on China's economic development is the lack of capital and the lack of foreign exchange necessary to buy new capital and technology from abroad. In Western development literature, emphasis has been placed on foreign exchange availability as a potential constraint on the growth rate. Foreign exchange plays an important role in economic growth by complementing domestic savings and providing imported capital goods needed to support domestic investment, as pointed out by Anne O. Krueger. 3/ Most economists agree that investment is highly correlated with economic growth; however, some economists wonder whether the main problem is the supply of capital. 4/ R. Nurke argues, for instance, that the the main problem of less developed countries is not the supply of capital, but the shortage of demand for capital. 5/ In the case of China, problems on the supply side are more

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1/ According to China's Economic Almanac 1982, arable land per peasant declined from 3.28 mu in 1950 to 1.82 mu (0.30 acres) in 1980. The use of capital-intensive methods are efficient for large-sized farms, such as the state farms.

2/ A. Doak Barnett, "China's Food Prospects and Import Needs," in H. Brown, op. cit., pp. 59-67.

3/ Anne O. Krueger, Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences, (Cambridge: Ballinger, 1978), p. 5.

4/ W. Arthur Lewis, "The State of Development Theory," American Economic Review, vol. 1, No. 1, March 1984, p. 7.

5/ R. Nurke, Problems of Capital Formation in Underdeveloped Countries, (New York: Oxford University Press, 1953), p. 30.

serious than those on the demand side. Many development projects were suspended or revised due to insufficient funds.

Since 1979, China has been trying very hard to increase its supply of capital from different sources, including borrowing from international organizations, securing foreign investment, and increasing exports. There are many development projects in China. A few billion dollars worth of foreign loans or investment would not help significantly in developing China's economy. Unless substantial resources are obtained, such as that from huge increases in production of offshore oil fields, the problem of a shortage of capital in China will be very difficult to solve.

In addition to the shortage of physical capital, there is also a shortage of human capital. Educational institutions and systems were seriously injured during the 10 years of the Great Cultural Revolution and have not been fully reconstructed and rehabilitated. The Chinese authorities know that human capital is essential for the four modernizations. They have sent thousands of students to the United States, Japan, West Germany, and other developed nations. In addition, they set up a number of television education programs and adult education centers. They are trying to improve the whole education system. However, the shortage of human capital will not disappear in the near future.

Like other developing countries, China has to face the energy bottleneck in its economic development processes. Unlike other developing countries, China has large coal mines and sufficient oil reserves. The problem is not a lack of reserves, but a lack of production. With older techniques, China has difficulties in getting coal out of the ground and in getting the coal to end users with an overburdened transportation system. 1/ Oil production is not as high as expected. The major onshore oil fields reached capacity levels in 1979. Crude oil production experienced reductions in three consecutive years after 1979. 2/ With technical cooperation from Western countries, China has stressed offshore oil exploration in solving its energy problems. No one, however, expects that offshore exploration will have immediate results great enough to meet all of China's energy needs for growth and leave a large surplus for export. 3/ However, the possibility of discovering huge underwater oil fields in the Bohai Gulf or South China Sea cannot be completely ruled out.

The main shortage in the Chinese energy sector is electric power, which is directly related to the people's living standard and economic growth. Power shortages exist in industrial areas as well as in residential areas. Time, money, and technology are needed in order to increase the capacity of the electric industry. Without foreign technology and capital, China could

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1/ For China's freight volumes, see table B-18.

2/ For China's crude oil production in 1952-82, see table B-4.

3/ Perkins, "The Chinese Economy in the 1980's," op. cit., p. 8..

not build nuclear power plants or large-sized hydropower stations, such as the Three Gorge Dam. With a limited budget for basic capital construction, China will probably reduce the number of nuclear plant projects to something less than a dozen. A recent estimate for the cost of constructing a nuclear plant was around $4.3 billion. Usually, the selling firm or country provides loans for purchasing tools and equipment needed for the plant up to only 40 percent of the total construction cost; China will have to provide 60 percent of the cost. However, it is possible that one or, at most, two nuclear power plants will be operational by the year 1987. The increase in demand induced by industrialization will result in continued shortage of energy throughout the rest of this century.

The rigidity of Chinese bureaucratic management and planning is a problem that may prove to be more and more crippling as time passes. 1/ The problem is complex, involving selection of planning systems, distribution of authority between the central and local governments over economic decisions, and organization and control of the economy.

According to Milton Friedman, the method of organization and control of the economy explains China's extremely low level of income. He maintains that a change in method of organization and control is capable of achieving an economic miracle comparable with that attained in Japan, West Germany, and more recently, in Chile. 2/ The Chinese authorities agree that there are serious planning and management problems. In his selected works, Deng Xiaoping pointed out that the main problems of the economic organization and management systems were centralization and irresponsibility. 3/ Governing agencies in different echelons manage many things which they should not manage. Poor management results in needless bureaucratism. Many departments want to get involved in the same area, but no one wants to take the responsibility. This working attitude slows down economic growth. Western businessmen coming face to face with the Chinese bureaucracy have sometimes found it difficult or impossible to get anything accomplished except an oral "agreement in principle," i.e., "no agreement." Undoubtedly, the problem of poor management adversely affects international technological cooperation as well as domestic production.

Assumptions on selected economic variables.--Considering the constraints on rapid growth mentioned above, a set of more specific assumptions on selected economic variables for the base case can be made. In particular, it is assumed that no significant shocks will happen to the economy and that economic variables will follow their recent trends. This assumption appears

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1/ Ibid., p. 10.

2/ In his after-visit report, Friedman explained that the character of the people or the lack of natural resources cannot explain the extremely low income. He looked at the achievements of Chinese in Singapore, Hong Kong, and Taiwan, which are, if anything, less well endowed in resources than mainland China. Why should the Chinese be able to do so well everywhere except in their native land? He found the above answer.

3/ Deng Xiaoping, Selected Works of Deng Xiaoping (1975-82), (Beijing: People's Publishing House, July 1983), p. 288. In his article entitled "Liberation of Thoughts, Pursuit of Rightness, and Unification for Looking Forward," published in December 1978, Deng indicated that economic managers are often irresponsible and that nobody takes responsibility.

to be the most reasonable one, given the current political situation in China. However, this assumption may be erroneous, in which case the estimates of this study should be changed accordingly. During the last three decades, China has been the most changeable country in the Communist bloc in terms of foreign and domestic policies. Its economic system, management policy, and administrative structures have been constantly undergoing change. Every change will have some effect, either adverse or favorable, on China's economic development. The following are more specific assumptions on some selected macroeconomic variables.

1. The Chinese population increased from 1,000.72 million in 1981 to 1,015.41 million in 1982, and to 1,024.95 million in 1983. 1/ Under a compulsory birth control regulation, the Chinese population growth rate is declining. This study assumes that the population growth rate will decline by 0.05 percent per year from 1983 through 1987, beginning with a growth rate of 1.154 percent in 1983.

2. It is assumed that the Chinese accumulation rate, which is the ratio of accumulation to output, will fluctuate within a band between 27 and 30 percent of its national income. The accumulation rate, or saving rate in more familiar economic terminology, is one of the few major target variables in centrally planned economies. The Chinese accumulation rate was at a record high of 43.8 percent in 1959. After 1978, the accumulation rate tended to decline as a result of the decision of the CCP Central Committee on improving the living standard of people. The rate decreased steadily from 36.5 percent in 1978 to 34.6 percent in 1979, to 31.6 percent in 1980, and to 28.5 percent in 1981, but rose to 29 percent in 1982. 2/ The objective of the current Chinese Government is to reduce the accumulation rate to 25 percent eventually. This 25-percent figure was based on the development experience of the Soviet economy. Proportioning the accumulation and the consumption rates has been the main issue in Chinese economic planning. 3/ During 1952-82, the average rate of accumulation has been 30.1 percent and the marginal propensity to consume has been 63.5 percent. 4/ By Western standards, Chinese people have been in a constant state of underconsumption.

1/ For figures of China's population and labor force, 1952-83, see table B-1.

2/ For the accumulation and consumption rates, 1952-82, see table B-20.

3/ In his article entitled "Several Problems Related to Having Plan, and Following Proportion for National Economic Development," in Red Flag, Oct. 1, 1983, pp. 2-9, Vice Premier Bo Ibo indicated that it is difficult to lower the accumulation rate in the near future. The rate may be controlled at 27 or 28 percent, but it should not exceed 30 percent. Bo is one of few high-ranking cadres who prefer to use statistical methods to forecast the accumulation and consumption rates rather than arbitrarily setting them. He endorses Joseph Stalin's theory of planning and proportioning and praises the theory as one of the greatest contributions to Socialist political economics.

4/ The marginal propensity to consume was estimated by Commission staff based on a simple Keynesian consumption function. The results of the estimated function are as follows:

$$C_t = \underset{(1.9699)}{13.7742} + \underset{(21.2792)}{0.6346}\, Y_t$$

$R^2 = 0.9853$ $F(1, 28) = 1888.1$ D.W. = 1.5234 Sample period = 1952-82. See app. C for statistical explanations.

3. The Chinese export and import prices are assumed to follow world prices. The volumes of Chinese exports and imports are too small and could not change world prices.

4. It is anticipated that the harvest conditions will be normal during 1984-87.

Estimates of the Effects on U.S.-Chinese Trade

The following are the estimates of the effects of China's economic development on U.S.-Chinese trade. These estimates are derived from the statistical model presented in appendix C.

Estimates of China's macroeconomic variables

The estimates for China's macroeconomic variables are as shown in the following tabulation:

Variables	1983	1984	1985	1986	1987
National income billion 1982 yuan	463.9	506.8	542.7	613.7	687.9
Consumption expenditures---do	372.7	403.9	437.2	477.9	525.7
Investment expenditures---do	93.3	103.6	115.7	127.1	144.1
Ratio of consumption to investment---Percent	4.00	3.90	3.78	3.76	3.65

According to these estimates, the ratio of consumption to investment will decline. If the ratio were kept at the 1983 level, the estimated growth in national income would be smaller. In recent years, foreign investment and loans allowed higher levels of fixed capital formation in China. If China continues to keep its door open to such investment, the high economic growth could continue for the next 4 years.

Because data on China's macroeconomic variables are limited, a few lagged dependent variables were used as explanatory variables in the model. The inclusion of the lagged variables in the model do not damage its usefulness for near-term forecasting and for analyzing relationships among China's macroeconomic variables. However, any unexpected shock to China's economy may cause unexpected changes in national income or investment. In this case, it is proper to make an annual adjustment to the estimates. For instance, the 1983 actual value of national income, when available, can be used in lieu of its estimated value to project 1984 national income. It is quite likely that the 1985 national income cannot reach the level of Y542.7 billion if the actual value of the 1984 national income is below Y506.8 billion. The model was fitted by 31 annual observations (1952-82), and was used to forecast for 5

years. The estimated national income in 1983 is Y463.94 billion, which is virtually the same as its actual value, Y467.3 billion, as announced by the State Statistical Bureau. 1/

Estimates of China's exports and imports

Since 1978, the Chinese Communists have doubled their efforts in economic development and have achieved an accelerated growth rate of foreign trade. The estimates of China's exports and imports for 1983-87 are given in the following tabulation (in billions of 1982 dollars):

Variables	1983 1/	1984	1985	1986	1987
Exports to the United States	2.196	2.249	2.296	2.323	2.338
Exports of textiles to the United States	.947	1.080	1.183	1.262	1.320
Exports of other commodities to the United States	1.249	1.169	1.113	1.061	1.018
Exports to other countries	19.193	20.840	22.510	24.395	26.409
Total China's exports	21.389	23.089	24.806	26.718	28.747
Imports from the United States	3.155	3.232	3.250	3.254	3.304
Imports of grain from the United States	1.302	1.369	1.354	1.355	1.354
Imports of other commodities from the United States	1.853	1.863	1.896	1.899	1.950
Imports from other countries	15.115	15.958	16.894	18.176	19.700
Total China's imports	18.270	19.190	20.144	21.430	23.004

1/ Figures for 1983 in this table are estimated. According to the 1983 U.S. trade statistics, U.S. exports to and imports from China were $2.163 billion and $2.218 billion, respectively. For details on the 1983 bilateral trade between the United States and China, see the 37th Quarterly Report to the Congress and the Trade Policy Subcommittee on Trade Between the United States and the Nonmarket Countries During 1983, USITC Publication 1511, March 1984, pp. 30-59. The 1983 bilateral trade statistics from Chinese sources are not available at present. Usually, figures of Chinese trade statistics are higher than those of the United States. According to U.S. trade statistics, for instance, the values of two-way trade between the United States and China in 1981 and 1982 were $5.429 billion and $5.120 billion, respectively. The values of the bilateral trade in these two years, according to Chinese trade statistics, were $6.281 billion and $6.172 billion, respectively.

1/ According to the State Statistical Bureau announcement which was published in People's Daily, Apr. 30, 1984, the 1983 national income of the People's Republic of China amounted to Y467.3 billion. The estimated value and the actual value would be the same if the price level in 1983 increased by 0.73 percent.

Estimates of the effects of China's trade on U.S. economy

Using the estimates of China's trade, it is possible to calculate the effects of China's economic development on the U.S. economy in terms of production, and employment in U.S. industries. 1/ Although normalization of trade with China may have allowed China's exports to displace U.S. imports from other countries, the bulk of the increase in imports from China probably goes toward displacing competing U.S. output. For simplicity, it is assumed that there is a one-to-one relation between imports from China and the competing U.S. output. That is, each $1 increase in imports is assumed to result in a $1 decrease in competing domestic production. 2/ This assumption tends to overstate the effects of imports from China for two reasons. First, it ignores trade diversion effects, as we have already noted. Second, it ignores the fact that imports from China reduce the U.S. price to a small extent, and this price reduction will cause total U.S. purchases to expand slightly. Thus, the estimates derived from this assumption should be viewed as upper-bound estimates. There are a number of other problems involved in translating these trade changes into actual employment effects. These are detailed in a recent Commission report on trade-related employment. 3/

The estimated effects of the changes in U.S.-Chinese trade on U.S. domestic production and employment are given in table 14.

1/ In traditional trade theory, an increase in imports of a commodity would increase quantity supplied in the domestic market and would tend to lower prices. At lower prices, consumers would increase their consumption. The domestic production of the commodities will change in accordance with the changes in consumption and imports. For effects of imports on domestic prices, consumption, production, and employment, see James T. H. Tsao, Economic Effects of Export Restraints: Investigation No. 332-117 . . ., USITC Publication 1256, June 1982. This publication or its abstract is available in the vertical file of public and private libraries in the United States.

2/ The one-to-one relation has been used by a number of researchers. For instance, Donald J. Rousslang used it in his paper entitled "The Effects of Performance Requirements on U.S. Auto Trade With Brazil and Mexico," a research paper of the Bureau of International Labor Affairs, U.S. Department of Labor, November 1981, and Robert E. Baldwin used it in his study, "Trade and Employment Effects in the United States of Multilateral Tariff Reductions," American Economic Review, May 1976, pp. 142-148. For approaches other than the one-to-one, see Joseph Pelzman's and Randolph C. Martin's, "Direct Employment Effects of Increased Imports: A Case Study of the Textile Industry," Southern Economic Journal, October 1981, pp. 412-424.

3/ See Donald J. Rousslang, U.S. Trade-Related Employment: Final Report on Investigation No. 332-154 . . ., USITC Publication 1445, October 1983.

Table 14.--Effects of U.S.-Chinese trade on U.S. domestic production and employment, by specified commodities, 1983-87

Year and item	Effects of China's exports on--		Effects of China's imports on--		Net effects on U.S. production and employment
	Textiles	Other commodities	Grain	Other commodities	
1983:					
Production-----million dollars--------	-947	-1,249	1,302	1,853	959
Employment-----1,000 work-years-------	-29.96	-34.83	15.98	40.71	-8.10
1984:					
Production-----million dollars--------	-1,080	-1,169	1,369	1,863	983
Employment-----1.000 work-years-------	-34.17	-32.61	16.79	40.92	-9.07
1985:					
Production-----million dollars--------	-1,183	-1,113	1,354	1,896	954
Employment-----1,000 work-years-------	-37.43	-31.04	16.61	41.65	-10.21
1986:					
Production-----million dollars--------	-1,262	-1,061	1,355	1,899	931
Employment-----1.000 work-years-------	-39.93	-29.59	16.62	41.72	-11.18
1987:					
Production-----million dollars--------	-1,320	-1,018	1,354	1,950	966
Employment-----1,000 work-years-------	-41.76	-28.39	16.62	42.84	-10.69

Note.--U.S. Department of Commerce input-output table was used to convert the effect on production to the effect of employment. The input-output table was published in Survey of Current Business, February 1979. The direct and indirect labor requirements which were used to calculate the effect on employment were provided by Ching-Yeh Hu of William Paterson State College of New Jersey. Effects on other commodities from China were derived by using 27.89 thousand work-years for 1 billion 1980 dollars. This figure was close to 27.7 thousand work-years as estimated by Roger T. Pomeroy of the U.S. Department of Commerce. For details on Pomeroy's estimates, see his paper entitled "Employment Related to Merchandise Exports," International Trade Administration Paper No. ER-34, August 1981.

CHAPTER 5. CONCLUSIONS

Deng Xiaoping and his followers appear through their economic policy, to have helped China's economic development. A question remaining is how the leadership of the CCP Central Committee should direct an economy of 1 billion people towards its long-term development objective--to quadruple the gross value of industrial and agricultural production by the year 2000. Quadrupling real output in 20 years would mean maintaining an annual growth rate of 7.2 percent. American observers have different views on whether the long-term development objective can be achieved. Some of them worry about political stability in China after Deng, who is 80. Others worry that lagged technology and insufficient human capital may constrain China's economy from rapid growth. However, most of them think that although the quadrupling will be a very difficult job, it will not be impossible. In his recent article, for instance, Lawrence R. Klein stated that "It is very unusual, but not impossible, to find a sustained growth rate of 7 percent for two consecutive decades; I hesitate to accept the hypothesis of income quadrupling, but it cannot be ruled out. The hypothesis of income doubling in a decade is, however, definitely within the realm of plausibility." 1/ Klein apparently believes that doubling in 10 years is more possible than quadrupling in 20 years. He selected the year 1990 as an interim point where a new reading on the chances of duplicating the growth feat by the year 2000 should be made. To achieve the long-term objective, Premier Zhao has adopted a two-stage strategy. It would be more difficult to attain the objective if his two-stage strategy is followed.

It is expected that the Sixth Five-Year Plan will be successfully carried out. The growth rates set forth in the plan are reasonable and attainable. It will probably become the first successful plan that was prepared completely by Chinese planners. 2/ The planned growth rates for the Seventh Five-Year Plan (1986-90) are higher than those for the Sixth Five-Year Plan. The annual growth rate of gross value of industrial and agricultural production is set around 6.1 percent for the period of the Seventh Five-Year Plan. With newly installed equipment in the production lines, the intermediate requirements

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1/ Lawrence R. Klein, "Good Cause to be Bullish on China," The Los Angeles Times, July 31, 1984, pt. IV (Business Section), p. 3. In a telephone interview on Aug. 22, 1984, Charles P. Kindleberger expressed a view of a Harvard expert on China that each year for the last few years, visitors have come from China saying, "The economy was all messed up but after this last reform, it is going to behave splendidly." Many observers who visited China in the 1970's hold pessimistic views on China's economic development.

2/ The only other plan which was successfully implemented is the First Five-Year Plan. The Soviet Union helped China in developing and executing the plan. A. K. Ho indicated in his book entitled Developing the Economy of the People's Republic of China, (New York: Praeger, 1982), p. 25, that between 1949 and 1958, a total of 10,900 Soviet specialists were in China at one time or another to assist China in economic development. Meanwhile, the Soviet Union had accepted 14,000 Chinese students into its schools, and 38,063 Chinese were trained as apprentices in Soviet factories and plants.

included in the gross value will decline, and the growth rate of the gross value will probably slow down. Increasing efficiency in management would further reduce the intermediate requirements. Under a technologically progressive economy, a 6.1-percent growth rate of gross value of production is very high. But it is still possible if huge deposits of natural resources are discovered, such as offshore oil fields and inland mines. The economic situation in the 1990's is less clear. There will be lots of uncertainties, including a possible change of administration.

Premier Zhao set a reasonably low growth rate for the first stage (1981-90). A relatively low growth rate in the first stage is designed to allow a relatively high rate in the second stage. If the 4.0-percent rate for the Sixth Five Year Period and the 6.1-percent growth rate for the Seventh Five-Year Period are achieved as planned, an annual growth rate of 9.3 percent must be achieved in the second stage in order to meet the long-term development goal. 1/ Whether this growth rate can be achieved depends mainly on infrastructure to be built in the first stage. A long-term simulation of the Chinese economy based on the U.S. Department of State model shows growth rates for gross value of industrial production of 6.2 percent and gross value of agricultural production of 2.8 percent for the period 1986-2000, which is lower than the 9.3 percent required to reach the long-term economic development objective. 2/

The findings of the present study reveal that the Chinese people have had a very low level of consumption. China's per capita income is one of the lowest in the world. The share of income that is consumed is also one of the lowest. There has been an argument among the Chinese leadership about whether people should consume more today. In December 1978, the CCP Third Plenum decided to raise living standards by allowing more current consumption. However, under the ambitious long-term development objective, a high consumption rate is quite unlikely. The industrialization is aimed at a high economic growth rate rather than a high personal consumption rate.

One way to raise living standards is to increase the power supply for residential use. About one-third of the Chinese people have no electricity. The nuclear power projects enjoy top priority in China's economic development plan. The locations selected for the first two nuclear plants are in the vicinities of two of the most populated cities, Shanghai and Hong Kong, where residential power supply systems are already among the best in China. As far as costs and benefits are concerned, the Three Gorge Dam project appears to represent a better solution to the energy problem. Even in the construction period, the hydropower project would use more labor and require less of

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1/ The Seventh Five-Year Plan is not yet in final form. The growth rate (6.1 percent) has been used by Chinese economists for their research. For the strategies for attaining the long-term development objective, see Teng Wecao and Hsiang Xinme's paper entitled "Discussion on Economic Situations of Western Countries and Our Strategies For Trade and Economic Development," in Nankai University Journal (Nankai Xuebao), Tianjin, January 1983, pp. 1-6.

2/ The U.S. Department of State model, version IV, p. 35. The annual growth rate of gross domestic product for the period 1986-2000 was estimated at 5.8 percent in accordance with the U.S. Department of State model.

China's scarce capital than the nuclear power project. 1/ In addition, the dam would provide electricity to people living in mountainous areas in inland provinces, such as Sichuan, Hubei, Hunan, Henan, and Guazhou. The hydropower station, once it becomes operational, can also supply electricity to factories and plants located in Central China. From a purely economic standpoint, the dam deserves priority over nuclear power projects.

Since 1979, the Communist authorities have adopted the open-door policy that has allowed China's national income and foreign trade to grow rapidly. The real growth rate of China's national income reached a record high of 9.0 percent in 1983. To implement its development strategies, China has established four special economic zones (Xiaman, Shantou, Zhuhai, and Shenzhen) along the coast in south China. The special economic zones absorb surplus Chinese labor and facilitate technology imports. For the past 5 years, the level of foreign investment in the four special zones has been lower than Chinese authorities expected. Up to April 1984, foreign investments in the special zones totaled $715 million. In order to attract more foreign investment, China has passed a variety of laws that provide economic incentives and legal structures. Also, the the CCP Central Committee designated 14 other coastal cities as economic open districts on April 6, 1984. The districts are Qinhuangdao, Tianjin, Dalian, Yantai, Qingdao, Lianyungong, Nantong, Shanghai, Ninbo, Wenzhou, Fushou, Guangzhou, Zhanjiang, and Beihai. Unlike the four special economic zones that are concentrated in the south coast, the 14 open-port cities are distributed equidistant along the coast from north to south China. It is possible that China may further relax its regulations governing foreign investment and may provide foreign investors with more incentives. As long as pragmatists remain in power, China's door will probably be kept open to the United States.

After adopting new development strategies in 1978, China has imported a large amount of machinery and equipment from Western countries. The two-way trade between the United States and China quadrupled during 1978-82. In 1983, two trade issues, textiles and export controls, were raised and resolved. The bilateral textile agreement improved the trade relations between the two countries, as did the decision by the Reagan administration to place China in the category of friendly, nonaligned countries for the purposes of technology transfer. However, it is possible that these two issues may occur again in the future. A few months after signing the bilateral agreement, China expressed its dissatisfaction over U.S. textile import restrictions. Also, some high-technology items that China needs from the United States for its development plans can be exported only to U.S. allies. In spite of such issues, bilateral trade between the two countries will continue to grow in 1984-87. The effect of China's economic development on U.S. exports to China is favorable. In addition, this study indicates that this growing trade will have only minimal effects on the overall U.S. economy in terms of domestic production and employment.

1/ Due to the lack of heavy equipment, construction work is slow in China. According to estimates of Zhou Sulien, it would take 10 years to construct a hydropower station with 1 million kW capacity. For the number of construction years needed for other industries, see Zhou's article, "Strategic Objectives and Economic Results," Chinese Economic Problems, (Zhongguo Jingji Wenti), Jan. 20, 1983, pp. 11-14.

APPENDIX A

NOTICE AND DOCUMENT RELATED TO THE U.S. INTERNATIONAL TRADE COMMISSION INVESTIGATION NO. 332-168

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

[332-168]

China's Economic Development Strategies and Their Effects on U.S. Trade

AGENCY: United States International Trade Commission

ACTION: In accordance with the provisions of section 332(b) of the Tariff Act of 1930 [19 U.S.C. 1332(b)], the Commission has instituted on its own motion investigation No. 332-168 for the purpose of assessing China's development plans and their effects on U.S.-China trade. In its investigation, the Commission will examine China's 5th and 6th five-year plans and evaluate China's foreign investment and other international economic policies that will affect trade flows between the two countries. The effects to be investigated include those on the levels of U.S. exports to China and U.S. imports from China. The U.S. industries that will be most favorably or adversely affected by China's development strategies will be identified.

EFFECTIVE DATE: July 21, 1983

FOR FURTHER INFORMATION CONTACT: Mr. James Tsao, Principal Analyst (202) 523-1938, or Dr. Donald Rousslang, Chief, Research Division (202) 523-1846, U.S. International Trade Commission, Washington, D.C. 20436.

Written submission.--While there is no public hearing scheduled for this study, written submissions from interested parties are invited. Commercial or financial information which a party desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of section 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). All written submissions, except for confidential business information, will be made available for inspection by interested parties. To be ensured of consideration by the Commission, written statements should be received by the close of business on December 5, 1983. All submissions should be addressed to the Secretary at the Commission's office in Washington, D.C.

By order of the Commission.

Kenneth R. Mason
Secretary

Issued: August 10, 1983

List of U.S. International Trade Commission Investigations
on Imports from the People's Republic of China

Antidumping Investigations

(1978)	AA-178	Polyvinyl Chloride Sheet and Film (Affirmative)
(1980)	731-TA-28	Menthol (Preliminary - Affirmative)
(1981)	731-TA-28	Menthol (Final - Negative)
(1982)	731-TA-101	Greige Polyester/Cotton Printcloth (Preliminary - Affirmative)
	731-TA-103	Cotton Shop Towels (Preliminary - Affirmative)
	731-TA-115	Canned Mushrooms (Preliminary - Affirmative)
(1983)	731-TA-125	Potassium Permanganate (Preliminary - Affirmative)
	731-TA-130	Chloropicrin (Preliminary - Affirmative)
	731-TA-101	Greige Polyester/Cotton Printcloth (Final - Affirmative)
	731-TA-125	Potassium Permanganate (Final - Affirmative)
	731-TA-130	Chloropicrin (Final - Affirmative)
	731-TA-149/150	Barium Chloride & Barium Carbonate (Preliminary - Affirmative)
	731-TA-103	Cotton Shop Towels (Final - Affirmative)
	731-TA-115	Canned Mushrooms (Final - Terminated)
(1984)	731-TA-149	Barium Chloride (Final - Affirmative)

"Escape Clause" Cases

(1978)	TA-201-34	Certain Fishing Tackle (No injury)
	TA-201-36	Clothespin (Injury)
(1980)	TA-201-43	Mushrooms (Injury)

"Escape Clause" Relief Review Case

(1983)	TA-203-13	Certain Mushrooms (Vote for continuation of relief)

Market Disruption Cases

(1977)	TA-406-1	Certain Gloves (Negative)
(1978)	TA-406-2	Clothespins (Negative)
(1982)	TA-406-8	Ceramic Kitchenware and Tableware (Negative)
	TA-406-9	Canned Mushrooms (Affirmative)

APPENDIX B

EXPLANATORY NOTES AND STATISTICAL TABLES

I. Explanatory Notes

The following notes explain the Chinese economic terms used in this study. For explanations of other Chinese economic terms, see the Statistical Yearbook of China, 1981, published by the State Statistical Bureau, The People's Republic of China.

A. National Income Accounting

1. Gross social product.--Gross social product refers to the sum total of gross output, in value terms, created during a year in the following material production sectors: industry, agriculture, construction, transport and commerce (including the catering trades and materials supply and marketing enterprises).

2. National income.--National income refers to the newly created value in a given period by workers engaged in material production sectors of the country. It is the sum of net output value of agriculture, industry, construction, transport, and commerce, obtained by deducting material consumption of those sectors from the gross social product.

3. Revenue

(1) Revenue from enterprises.--This part of the revenue comprises profits plus depreciation costs of fixed assets plus institutional incomes turned over to the State by State-owned enterprises and institutions of the different sectors of the national economy.

(2) Revenue from taxes.--These taxes include the industrial and commercial tax, industrial and commercial income tax, salt tax, customs duties, agricultural and animal-breeding tax, tax on slaughtering animals, tax on trading in animals, tax on trading at the market, as well as penalties and payments of overdue tax.

4. Expenditure

(1) Appropriations for capital construction.--This item includes only allocations from the State budget for capital construction. Self-raised funds by localities and units for investment are not covered under this item.

(2) Additional circulating funds.--These are the additional amounts of circulating funds made available to State-owned enterprises in all sectors of the national economy, as well as additional credit funds to the banks.

(3) Operating expenses for science, culture, education and public health.--The areas covered by these expenses are science, culture, education, public health, free medical service, sports, communication and broadcasting, seismological research, marine surveys, cultural relics, and family planning.

5. Capital construction.--Capital construction refers to construction, expansion, reconstruction, and restoration projects of all sectors of the national economy, as well as purchases and installations of equipment.

6. Gross output value of agriculture.--The gross output value of agriculture refers to the total volume of output of products by farming, forestry, animal husbandry, sideline occupations (inclusive of industry by production brigades and teams) and fishery and their byproducts, expressed in monetary terms. It shows the achievements made in agricultural production during a certain period of time and is obtained, first, by multiplying the amount of each product or byproduct by the price. The result will be the output value of every single item. The sum total of the output value of all the individual items shall then be the gross output value of agriculture.

7. Gross output value of industry.--The gross output value of industry is the total volume of industrial products in money terms which reflects the total achievements and overall scale of industrial production. It is calculated with the "factory" method, including the value of the finished products in storage that are up to the standards (full pricing for products using either the factory's own material or the customer's material), and the value of industrial services rendered outside of the factory by contract. No double or overlapping calculations are to be made within the same enterprises. However, they do occur among different enterprises.

8. Ownership by the whole people.--This term refers to enterprises or institutions in which the means of production are owned by the people as a whole. It is synonymous with "State-owned."

9. Collective ownership.--This refers to one of the forms of economic ownership in China, in which the means of production is owned by the collective. It includes farming, forestry, animal husbandry, sideline occupations, and fishery run by rural people's communes, production brigades and production teams, as well as enterprises and institutions run by rural communes, production brigades, and teams. Also included are the collective enterprises and institutions run by cities, counties, and towns and the neighborhood committees.

B. Industries

10. Light industry.--Light industry, in general, produces consumer goods which include two branches:

(1) Industries using farm products as raw materials, including cotton, wool, bast and silk weaving and sewing, leather and leatherware, pulp and papermaking, and foodstuffs. These industries use farm products as raw materials.

(2) Industries using nonagricultural products as raw materials, including the manufacture of metal products for daily use, household machines, electronic and electrical apparatus, chemicals for daily use, chemical fiber and fabrics, salt, glass for daily use, ceramics, and processing of fuel for daily use and others.

11. Heavy industry.--Heavy industry usually produces the means of production (capital goods), or it provides various sectors of the national economy with the necessary material. It consists of the following two branches:

(1) Mining and felling industry--extraction of petroleum, coal, metal and nonmetal ores, and timber felling.

(2) Manufacturing industry--Processing industries in heavy industry include raw materials industries such as smelting and processing of metals, coke making and coke chemistry, chemical materials and building materials; power and fuel industries such as power, petroleum, and coal processing; machine-building industries, industries that produce the means of agricultural production such as chemical fertilizers and pesticides; and the preparing trades that serve heavy industries.

The output values of light and heavy industries are calculated with the "factory" method. Under normal conditions, if the major products of an industrial enterprise are light industry products, the entire output of that enterprise is classified as light industry. If the major products are heavy industry products, the entire output is classified as heavy industry.

12. Large-, medium-, and small-sized enterprises.--There are two criteria for distinguishing among large-, medium-, and small-sized enterprises.

(1) The annual production capacity of the enterprises. For instance, a steel complex that puts out 1 million tons of steel or more annually is considered large; between 100,000 and 1 million tons, medium; and below 100,000 tons, small. A cotton mill that has 100,000 or more spindles is large; between 50,000 and 100,000, medium; and below 50,000, small. There are different criteria for enterprises turning out different products.

(2) Enterprises that cannot be classified using the above production capacity criterion are classified by the size of the original value of their fixed assets.

C. Prices.

13. Current price.--Current prices refer to the actual prices of products in a period, e.g., ex-factory prices, purchasing prices paid by Government procurement agencies for farm products, and retail prices set by the commercial departments.

14. Constant price.--Constant prices provide the values of products in different periods using the average prices of a reference year.

15. Comparable price.--Comparable prices refer to indexes of price change. When comparing values in different periods, the changes in prices are deducted to show the constant price values.

D. Foreign trade

16. Exports.--Refers to the value of Chinese commodities exported to other countries and Hong Kong and Macau, calculated at f.o.b prices.

17. Imports.--Refers to the value of commodities purchased from foreign countries and Hong Kong and Macau, calculated at c.i.f. prices.

II. Statistical Tables.

Table B-1.--China's population and labor force, 1952-83

(In millions)

Year	Population					Labor force
	Total 1/	By sex		By residence		
		Male	Female	Urban 2/	Rural 3/	
1952	574.82	298.33	276.49	71.63	503.19	207.29
1953	587.96	304.68	283.28	78.26	509.70	213.64
1954	602.66	312.42	290.24	82.49	520.17	218.32
1955	614.65	318.09	296.56	82.85	531.80	223.28
1956	628.28	325.36	302.92	91.85	536.43	230.18
1957	646.53	334.69	311.84	99.49	547.04	237.71
1958	659.94	341.95	317.99	107.21	552.73	266.00
1959	672.07	348.90	323.17	123.71	548.36	261.73
1960	662.07	342.83	319.24	130.73	531.34	258.80
1961	658.59	338.80	319.79	127.07	531.52	255.90
1962	672.95	345.17	327.78	116.59	556.36	259.10
1963	691.72	355.33	336.39	116.46	575.26	266.40
1964	704.99	361.42	343.57	129.50	575.49	277.36
1965	725.38	371.28	354.10	130.45	594.93	286.70
1966	745.42	381.89	363.53	133.13	612.29	298.05
1967	763.68	391.15	372.53	135.48	628.20	308.14
1968	785.34	402.26	383.08	138.38	646.96	319.15
1969	806.71	412.89	393.82	141.17	665.54	332.25
1970	829.92	426.86	403.06	144.24	685.68	344.32
1971	852.29	438.19	414.10	147.11	705.18	356.20
1972	871.77	448.13	423.64	149.35	722.42	358.54
1973	892.11	458.76	433.35	153.45	738.66	366.52
1974	908.59	467.27	441.32	155.95	752.64	373.69
1975	924.20	475.64	448.56	160.30	763.90	381.68
1976	937.17	482.57	454.60	163.41	773.76	388.34
1977	949.74	489.08	460.66	166.69	783.05	393.77
1978	962.59	495.67	466.92	172.45	790.14	398.56
1979	975.42	501.92	473.50	184.95	790.47	405.81
1980	987.05	507.85	479.20	191.40	795.65	418.96
1981	1,000.72	515.19	485.53	201.71	799.01	432.80
1982	1,015.41	523.10	492.31	211.54	803.87	447.06
1983	1,024.95	4/	4/	4/	4/	4/

1/ Figures in this table refer to population of 29 provinces, municipalities and autonomous regions on the mainland, including servicemen.

2/ Referring to population living in districts under the administration of cities and towns.

3/ Referring to population of counties but excluding those living in towns of a county.

4/ Not available.

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-2.—Composition of Chinese people's communes, 1958-82

Year	People's communes	Production brigades	Production teams	Households in the communes	Persons in the communes	Average number of production brigades per commune	Average number of production teams per production brigade	Average number of persons per production team
		Thousands			Millions			
1958	23,630	1/	1/	128.61	560.17	1/	1/	1/
1959	25,450	518	3,299	127.45	554.43	20.4	6.4	168
1960	24,317	464	2,892	126.62	1/	19.1	6.2	1/
1961	57,855	734	4,989	131.99	1/	12.7	6.8	1/
1962	74,771	703	5,580	134.10	1/	9.4	7.9	1/
1963	80,956	652	5,643	134.24	568.33	8.1	8.7	101
1964	79,559	644	5,590	133.88	575.72	8.1	8.7	103
1965	74,755	648	5,412	135.27	591.22	8.7	8.3	109
1966	70,278	651	5,164	136.61	606.48	1/	1/	1/
1967	70,050	649	5,106	1/	1/	1/	1/	1/
1968	59,812	641	4,869	1/	1/	1/	1/	1/
1969	53,722	648	4,585	1/	1/	1/	1/	1/
1970	51,478	643	4,564	151.78	699.84	12.0	7.0	153
1971	52,674	654	4,587	153.87	716.11	12.0	7.0	156
1972	53,823	662	4,722	156.01	731.81	12.0	7.0	155
1973	54,423	667	4,769	158.29	747.98	12.0	7.0	1/
1974	54,620	671	4,800	161.39	763.89	12.0	7.0	1/
1975	52,615	677	4,826	164.48	777.12	12.9	7.1	161
1976	52,665	681	4,827	168.03	787.45	12.9	7.1	163
1977	52,923	683	4,805	171.07	796.88	12.9	7.0	166
1978	52,781	690	4,816	173.47	803.20	13.1	7.0	167
1979	53,348	699	5,154	174.91	807.39	13.1	7.4	157
1980	54,183	710	5,662	176.73	810.96	13.1	8.0	143
1981	54,371	718	6,004	180.16	818.81	13.2	8.4	136
1982	54,352	719	5,977	182.79	827.99	13.2	8.3	139

1/ Not available.

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-3.--China's agricultural sector: Output of major farm products, 1952-82

(In millions of tons 1/)

Year	Grain				Cotton	Peanuts
	Total 2/	Rice	Wheat	Corn		
1952	163.92	68.43	18.13	16.85	1.304	2.316
1953	166.83	71.27	18.28	16.69	1.175	2.127
1954	169.52	70.85	23.34	17.14	1.065	2.767
1955	183.94	78.03	22.97	20.32	1.518	2.926
1956	192.75	82.48	24.80	23.05	1.445	3.336
1957	195.05	86.78	23.64	21.44	1.640	2.571
1958	200.00	80.85	22.59	3/	1.969	2.857
1959	170.00	69.37	22.18	3/	1.709	2.206
1960	143.50	59.73	22.17	3/	1.063	.804
1961	147.50	53.64	14.25	3/	.800	1.049
1962	160.00	62.99	16.67	3/	.750	1.100
1963	170.00	73.77	18.48	20.58	1.200	1.424
1964	187.50	83.00	20.84	22.69	1.663	1.749
1965	194.53	87.72	25.22	23.66	2.098	1.928
1966	214.00	95.39	25.28	3/	2.337	2.315
1967	217.82	93.69	28.49	3/	2.354	2.189
1968	209.06	94.53	27.46	3/	2.354	1.917
1969	210.97	95.07	27.29	3/	2.079	1.832
1970	239.96	109.99	29.19	33.03	2.277	2.148
1971	250.14	115.21	32.58	35.85	2.105	2.230
1972	240.48	113.36	35.99	32.10	1.958	2.092
1973	264.94	121.74	35.23	38.63	2.562	2.132
1974	275.27	123.91	40.87	42.92	2.461	2.323
1975	284.52	125.56	45.31	47.22	2.381	2.270
1976	286.31	125.81	50.39	48.16	2.055	1.873
1977	282.73	128.57	41.08	49.39	2.049	1.978
1978	304.77	136.93	53.84	55.95	2.167	2.377
1979	332.12	143.75	62.73	60.04	2.207	2.822
1980	320.56	139.91	55.21	62.60	2.707	3.600
1981	325.02	143.96	59.64	59.21	2.968	3.826
1982	353.43	161.24	68.42	60.30	3.598	3.916

1/ All measurements in this study are at metric system unless stated otherwise.

2/ The total includes soybeans and potatoes which are not shown in this table.

3/ Not available.

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-4.—China's industrial sector: Output of selected industrial products, 1952-83

Year	Chemical fibers	Yarn	Fabrics	Coal	Crude oil	Natural gas	Steel	Timber	Electricity		Cement
									Total	Of which: hydro-power	
	Thousand tons		Billion meters	Million tons	Million tons	Billion cubic meters	Million tons	Million cubic meters	Billion kWh		Million tons
1952	0	656	3.83	66	0.44	0.01	1.35	12.33	7.3	1.3	2.86
1953	0	745	4.69	70	0.62	0.01	1.77	17.54	9.2	1.5	3.88
1954	0	834	5.23	84	0.79	0.02	2.23	22.21	11.0	2.2	4.60
1955	0	720	4.36	98	0.97	0.02	2.85	20.93	12.3	2.4	4.50
1956	0	952	5.77	110	1.16	0.03	4.47	21.05	16.6	3.5	6.39
1957	.2	844	5.05	131	1.46	0.07	5.35	27.87	19.3	4.8	6.86
1958	3.0	1,262	6.46	270	2.26	0.11	8.00	35.79	27.5	4.1	9.30
1959	5.5	1,531	7.57	369	3.73	0.29	13.87	45.18	42.3	4.4	12.27
1960	.6	1,093	5.45	397	5.20	1.04	18.66	41.29	59.4	7.4	15.65
1961	5.3	669	3.11	278	5.31	1.47	8.70	21.94	48.0	7.4	6.21
1962	3.6	548	2.53	220	5.75	1.21	6.67	23.75	45.8	9.0	6.00
1963	18.9	678	3.34	217	6.48	1.02	7.62	32.50	49.0	8.7	8.06
1964	32.1	970	4.71	215	8.48	1.06	9.64	38.00	56.0	10.6	12.09
1965	50.1	1,300	6.28	232	11.31	1.10	12.23	39.78	67.6	10.4	16.34
1966	75.8	1,565	7.31	252	14.55	1.34	15.32	41.92	82.5	12.6	20.15
1967	52.2	1,352	6.56	206	13.88	1.46	10.29	32.50	77.4	13.1	14.62
1968	36.0	1,377	6.43	220	15.99	1.40	9.04	27.91	71.6	11.5	12.62
1969	66.6	1,805	8.21	266	21.74	1.96	13.33	32.83	94.0	16.0	18.29
1970	100.9	2,052	9.15	354	30.65	2.87	17.79	37.82	115.9	20.5	25.75
1971	119.9	1,900	8.42	392	39.41	3.74	21.32	40.67	138.4	25.1	31.58
1972	137.3	1,886	8.35	410	45.67	4.84	23.38	42.53	152.4	28.8	35.47
1973	148.8	1,967	8.71	417	53.61	5.98	25.22	44.67	166.8	38.9	37.31
1974	142.6	1,803	8.08	413	64.85	7.53	21.12	46.07	166.8	41.4	37.09
1975	154.8	2,108	9.40	482	77.06	8.85	23.90	47.03	195.8	47.6	46.26
1976	146.1	1,960	8.84	483	87.16	10.10	20.46	45.73	203.1	45.6	46.70
1977	189.8	2,230	10.15	550	93.64	12.12	23.74	49.67	223.4	47.6	55.65
1978	284.6	2,382	11.03	618	104.05	13.73	31.78	51.62	256.6	44.6	65.24
1979	326.3	2,635	12.15	635	106.15	14.51	34.48	54.39	282.0	50.1	73.90
1980	450.3	2,926	13.47	620	105.95	14.27	37.12	53.59	300.6	58.2	79.86
1981	527.3	3,170	14.27	622	101.22	12.74	35.60	49.42	309.3	65.5	82.90
1982	517.0	3,354	15.35	666	102.12	11.93	37.16	50.41	327.7	74.4	95.20
1983	541.0	3,270	14.88	715	106.07	12.21	40.02	52.32	351.4	86.4	108.25

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-5.--China's national income statistics: Gross social product, 1952-83

(In billions of current yuan)

Year	Gross social product	Agriculture	Industry	Construction	Transport	Commerce
1952	101.5	46.1	34.9	5.7	3.5	11.3
1953	124.1	51.0	45.0	8.5	4.2	15.4
1954	134.6	53.5	51.5	8.2	4.8	16.6
1955	141.5	57.5	53.4	8.6	5.0	17.0
1956	163.9	61.0	64.2	14.6	5.6	18.5
1957	160.6	53.7	70.4	11.8	6.0	18.7
1958	213.8	56.6	108.3	20.2	9.0	19.7
1959	254.8	49.7	148.3	23.5	12.1	21.2
1960	267.9	45.7	163.7	24.8	13.1	20.6
1961	197.8	55.9	106.2	9.0	7.6	19.1
1962	180.0	58.4	92.0	7.4	6.2	16.0
1963	195.6	64.2	99.3	9.7	6.6	15.8
1964	226.8	72.0	116.4	15.1	7.2	16.1
1965	269.5	83.3	140.2	17.7	9.1	19.2
1966	306.2	91.0	162.4	19.7	10.2	22.9
1967	277.4	92.4	138.2	15.5	8.6	22.7
1968	264.8	92.8	128.5	13.2	8.3	22.0
1969	318.4	94.8	166.5	22.2	9.9	25.0
1970	380.0	105.8	208.0	27.1	11.7	27.4
1971	420.3	110.7	237.5	31.1	12.8	28.2
1972	439.6	112.3	251.7	32.3	13.6	29.7
1973	477.6	122.6	274.1	33.5	14.4	33.0
1974	485.9	127.7	273.0	37.6	14.2	33.4
1975	537.9	134.3	312.4	43.7	16.0	31.5
1976	543.3	137.8	315.8	43.5	15.5	30.7
1977	600.3	140.0	357.8	46.2	17.9	38.4
1978	684.6	156.7	406.7	56.9	20.5	43.8
1979	764.2	189.6	448.3	64.5	20.9	40.9
1980	849.6	218.0	489.7	74.8	23.1	44.0
1981	904.8	246.0	512.0	72.9	23.4	50.5
1982	989.4	278.5	550.6	86.8	25.7	47.8
1983	1,105.2	312.1	608.8	1/	1/	1/

1/ Not available.

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-6.--China's price indexes, 1951-82

(1950 = 100)

Year	General retail price index 1/	General index of cost of living prices of staff and workers 1/	General index of ex-factory prices of industrial products	General index of purchasing prices of farm and sideline products 2/	General index of retail list prices of industrial products in rural areas	General index of price parities between industrial and agricultrual products (General index of purchasing prices of farm and sideline products = 100)
1951	112.2	112.5	113.9	119.6	110.2	92.1
1952	111.8	115.5	113.2	121.6	109.7	90.2
1953	115.6	121.4	109.5	132.5	108.2	81.7
1954	118.3	123.1	107.8	136.7	110.3	80.7
1955	119.5	123.5	106.4	135.1	111.9	82.8
1956	119.5	123.4	98.5	139.2	110.8	79.6
1957	121.3	126.6	98.7	146.2	112.1	76.7
1958	121.6	125.2	98.1	149.4	111.4	74.6
1959	122.7	125.6	98.7	152.1	112.4	73.9
1960	126.5	128.8	98.0	157.4	115.5	73.4
1961	147.0	149.6	102.9	201.4	121.2	60.2
1962	152.6	155.3	106.9	200.1	126.6	63.3
1963	143.6	146.1	106.3	194.4	125.3	64.5
1964	138.3	140.7	104.2	189.5	122.9	64.9
1965	134.6	139.0	99.3	187.9	118.4	63.0
1966	134.2	137.3	95.1	195.8	115.0	58.7
1967	133.2	136.4	93.9	195.5	114.1	58.4
1968	133.3	136.5	91.9	195.2	113.8	58.3
1969	131.8	137.8	88.8	194.9	112.1	57.5
1970	131.5	137.8	84.9	195.1	111.9	57.4
1971	130.5	137.7	84.4	198.3	110.2	55.6
1972	130.2	137.9	83.9	201.1	109.6	54.5
1973	131.0	138.0	83.5	202.8	109.6	54.0
1974	131.7	138.9	82.7	204.5	109.6	53.6
1975	131.9	139.5	82.4	208.7	109.6	52.5
1976	132.3	139.9	82.2	209.7	109.7	52.3
1977	135.0	143.7	81.4	209.2	109.8	52.5
1978	135.9	144.7	81.6	217.4	109.8	50.5
1979	138.6	147.4	82.9	265.5	109.9	41.4
1980	146.9	158.5	83.4	284.4	110.8	39.0
1981	150.4	162.5	83.6	301.2	111.9	37.2
1982	153.3	165.8	83.4	307.8	113.7	36.9

1/ Including list prices, negotiated prices, and market prices, similarly hereinafter.

2/ Including list prices, negotiated prices, and increased prices for above-quota purchase of farm and sideline products, similarly hereinafter.

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-7.--China's balance of trade: Exports and imports, net trade balances, and exchange rates 1/, 1950-82

Year	Total trade	Exports	Imports	Net balance	Exchange rate
	Billion yuan	Billion dollars			Dollar per yuan
1950	4.16	1.13	0.55	0.58	-0.03	3.68
1951	5.95	1.96	0.76	1.20	-.44	3.04
1952	6.46	1.94	0.82	1.12	-.30	3.33
1953	8.09	2.37	1.02	1.35	-.33	3.41
1954	8.47	2.44	1.15	1.29	-.14	3.47
1955	10.98	3.14	1.41	1.73	-.32	3.50
1956	10.87	3.21	1.65	1.56	.09	3.39
1957	10.45	3.11	1.60	1.51	.09	3.36
1958	12.88	3.87	1.98	1.89	.09	3.33
1959	14.93	4.38	2.26	2.12	.14	3.41
1960	12.85	3.81	1.86	1.95	-.09	3.37
1961	9.08	2.94	1.49	1.45	.04	3.09
1962	8.09	2.66	1.49	1.17	.32	3.04
1963	8.57	2.92	1.65	1.27	.38	2.93
1964	9.75	3.47	1.92	1.55	.37	2.81
1965	11.84	4.25	2.23	2.02	.21	2.79
1966	12.71	4.62	2.37	2.25	.12	2.75
1967	11.22	4.16	2.14	2.02	.12	2.70
1968	10.85	4.05	2.10	1.95	.15	2.68
1969	10.70	4.03	2.20	1.83	.37	2.66
1970	11.29	4.59	2.26	2.33	-.07	2.46
1971	12.09	4.85	2.64	2.21	.43	2.49
1972	14.69	6.30	3.44	2.86	.58	2.33
1973	22.05	10.98	5.82	5.16	.66	2.01
1974	29.22	14.57	6.95	7.62	-.67	2.01
1975	29.04	14.75	7.26	7.49	-.23	1.97
1976	26.41	13.41	6.86	6.58	.28	1.97
1977	27.25	14.80	7.59	7.21	.38	1.84
1978	35.51	20.61	9.75	10.89	-1.14	1.72
1979	45.46	29.33	13.66	15.67	-2.01	1.55
1980	56.38	37.82	18.27	19.55	-1.28	1.49
1981	71.74	40.37	20.89	19.48	1.41	1.78
1982	75.64	39.30	21.82	17.48	4.34	1.92
Average annual growth rate (in percent) 2/	14.09	16.23	17.83	14.72	-	-

1/ Exchange rates were derived from the figures under "Total trade." They may differ from official rates.

2/ All average annual growth rates were derived from current values in 1952-82.

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-8.---China's foreign trade: Commodity composition of exports and imports, 1952-82

(In percent)

Year	Exports			Imports	
	Industrial and mineral products 1/	Processed farm and sideline products 2/	Farm and sideline products 3/	Means of production	Means of subsistence
1952	17.9	22.8	59.3	89.4	10.6
1953	18.4	25.9	55.7	92.1	7.9
1954	24.0	27.7	48.3	92.3	7.7
1955	25.5	28.4	46.1	93.8	6.2
1956	26.1	31.3	42.6	91.5	8.5
1957	28.4	31.5	40.1	92.0	8.0
1958	27.5	37.0	35.5	93.1	6.9
1959	23.7	38.7	37.6	95.7	4.3
1960	26.7	42.3	31.0	95.4	4.6
1961	33.4	45.9	20.7	61.9	38.1
1962	34.7	45.9	19.4	55.2	44.8
1963	32.9	42.9	24.2	56.0	44.0
1964	32.9	39.1	28.0	55.5	44.5
1965	30.9	36.0	33.1	56.5	33.5
1966	26.6	37.5	35.9	72.2	27.8
1967	24.4	36.3	39.3	76.0	24.0
1968	21.8	38.2	40.0	77.2	22.8
1969	23.5	39.1	37.4	82.4	17.6
1970	25.6	37.7	36.7	82.7	17.3
1971	28.9	34.9	36.2	83.9	16.1
1972	27.7	41.0	31.3	79.4	20.6
1973	24.7	39.5	35.8	76.4	23.6
1974	33.8	29.8	36.4	75.7	24.3
1975	39.3	31.1	29.6	85.4	14.6
1976	38.9	32.7	28.4	86.8	13.2
1977	38.5	33.9	27.6	76.1	23.9
1978	37.4	35.0	27.6	81.4	18.6
1979	44.0	32.9	23.1	81.3	18.7
1980	51.8	29.5	18.7	78.9	21.1
1981	56.3	26.1	17.6	72.8	27.2
1982	60.5	24.6	14.9	70.8	29.2

1/ Including metals and mineral products, machinery and instruments, chemicals, Western medicine, chinaware, chemical fibers, and chemical fiber products.

2/ Including processed food of cereals and edible oil, textiles, native produce and animal products, and handicraft products.

3/ Including cereals, cotton, edible oil, eggs, livestock and poultry, aquatic products, vegetables, dried fruits, raw lacquer, and crude Chinese drugs.

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-9.--China's foreign trade: Trade with selected countries, 1952-82

(In millions of dollars)

Year	United States		Japan		West Germany		Hong Kong and Macau		U.S.S.R.	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
1952	-	0.05	3.32	1.08	2.31	4.76	168.74	135.10	412.04	652.17
1953	-	-	6.80	3.12	3.22	28.85	168.08	121.61	480.61	777.62
1954	-	-	20.57	14.60	7.51	13.22	129.60	88.48	586.63	704.61
1955	-	-	58.17	25.14	8.99	10.26	154.75	34.62	670.21	1,119.64
1956	-	-	64.74	63.66	11.72	19.16	172.33	28.08	761.68	762.09
1957	-	-	59.66	55.07	11.52	45.93	175.21	25.18	746.97	617.73
1958	-	-	32.52	48.13	31.03	155.24	213.98	25.39	898.87	639.70
1959	-	-	-	-	25.61	129.32	191.05	20.45	1117.94	979.06
1960	-	-	-	.19	19.51	94.18	198.32	16.61	818.78	845.16
1961	-	-	21.64	14.45	13.39	33.73	189.76	11.83	536.26	291.65
1962	-	-	31.63	42.16	21.43	38.03	227.87	9.71	490.66	210.92
1963	-	-	64.82	64.44	31.15	15.53	300.64	8.16	406.78	194.28
1964	-	-	141.28	160.81	41.53	26.22	404.31	15.65	311.64	133.58
1965	-	-	192.43	261.83	58.89	67.72	461.62	17.71	221.67	185.77
1966	-	-	269.38	333.77	64.46	120.58	580.57	16.14	140.41	164.73
1967	-	-	233.66	304.27	63.61	207.71	496.73	12.36	55.47	55.94
1968	-	-	204.91	334.89	64.51	214.26	532.07	10.77	32.93	59.21
1969	-	-	200.80	381.76	74.75	171.70	574.68	13.43	27.24	26.98
1970	-	-	223.81	582.73	69.48	205.54	603.82	13.87	23.17	24.06
1971	-	-	281.35	594.43	73.33	157.49	658.88	11.61	80.93	68.34
1972	9.57	3.31	411.78	627.39	90.39	183.52	891.77	20.31	133.50	116.83
1973	39.72	220.66	841.12	1107.45	155.96	363.38	1579.31	136.58	133.43	128.34
1974	102.86	372.85	1142.55	1982.71	205.24	493.90	1603.29	108.82	154.95	145.04
1975	128.88	341.83	1403.00	2392.48	219.90	595.64	1719.43	34.58	151.30	145.95
1976	156.04	160.64	1222.91	1816.61	224.88	720.99	1816.92	28.68	168.38	246.35
1977	179.63	114.62	1356.71	2108.54	260.81	529.78	2012.39	136.18	176.45	152.59
1978	270.67	721.10	1718.65	3105.15	325.92	1030.11	2667.60	74.69	229.66	206.87
1979	595.01	1856.59	2764.13	3944.01	459.15	1739.40	3547.84	214.45	242.23	250.39
1980	982.93	3830.21	4032.24	5168.91	710.52	1332.82	4603.79	569.82	228.30	264.12
1981	1524.61	4756.70	4868.32	6291.89	854.15	1366.37	5678.47	1276.61	125.24	155.90
1982	1798.77	4373.93	4910.06	3983.96	789.16	985.08	5552.10	1349.50	172.41	249.40

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-10.—China's foreign trade: Bilateral trade with selected Communist countries, 1952-82

(In millions of dollars)

Year	Romania		Democratic People's Republic of Korea		East Germany		Poland		Czechoslovakia		Hungary		Cuba		Yugoslavia	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
	In millions of dollars															
1952	1.38	0.01	21.41	2.00	41.54	65.79	26.11	22.21	48.95	48.79	26.81	25.06	-	-	-	-
1953	6.09	2.56	45.05	1.29	64.60	45.89	28.64	24.88	54.88	54.77	30.46	32.01	-	-	-	-
1954	5.85	6.98	79.71	2.60	75.89	104.71	27.80	39.43	54.53	67.56	28.93	32.49	-	-	-	-
1955	9.97	6.85	72.59	3.47	92.41	94.89	41.15	29.40	63.78	64.73	28.83	32.17	-	-	-	-
1956	12.15	18.91	61.82	6.73	90.24	106.40	31.62	41.96	64.48	64.90	30.10	37.99	-	-	6.60	4.29
1957	15.38	14.93	36.50	19.51	90.59	101.10	36.53	46.75	69.48	86.42	26.38	25.78	-	-	9.37	7.56
1958	20.84	23.60	47.74	42.81	109.11	142.83	42.63	56.70	93.05	97.00	32.94	50.60	-	-	3.12	9.85
1959	29.71	28.71	70.89	44.95	125.09	107.41	56.18	47.27	106.77	103.62	40.85	40.80	-	-	5.76	6.22
1960	27.28	32.24	67.40	52.97	93.66	94.89	42.76	46.92	82.60	93.35	29.47	38.31	9.74	14.05	.49	1.33
1961	11.79	13.11	63.82	53.11	31.45	63.30	17.64	27.49	30.54	50.78	12.22	28.04	107.54	114.87	.04	-
1962	10.73	2.17	80.43	54.14	29.60	25.89	27.62	14.99	25.24	12.56	13.88	15.08	80.43	106.71	.03	.04
1963	17.74	13.74	87.06	64.32	26.64	8.85	21.05	5.77	28.69	9.43	16.83	3.73	89.24	79.86	.05	-
1964	14.97	15.91	90.29	65.04	19.49	11.41	26.00	16.05	17.53	8.02	12.65	2.53	106.71	89.56	-	.10
1965	21.43	26.32	97.01	83.25	25.55	26.34	24.86	15.47	17.89	18.38	13.27	8.04	111.74	104.27	.02	-
1966	38.79	31.42	114.76	88.46	33.54	33.99	20.14	28.65	19.83	23.73	12.02	19.84	87.48	81.52	.10	.31
1967	31.11	38.48	93.64	82.99	32.67	35.76	22.20	21.91	16.52	14.48	7.29	10.39	77.05	59.92	1.70	-
1968	41.80	42.74	67.19	45.87	29.34	30.81	31.71	27.59	23.53	21.13	7.93	10.36	60.58	69.66	.18	.22
1969	44.92	21.14	47.21	44.94	37.69	33.33	21.74	15.02	30.78	24.68	10.93	8.06	68.49	51.88	.16	.04
1970	82.40	60.95	60.88	54.20	43.57	28.57	25.85	21.35	27.64	29.72	12.08	8.59	70.88	69.85	1.05	.82
1971	79.84	96.08	94.32	72.41	34.74	43.91	23.08	29.05	22.25	31.85	14.23	15.75	65.24	65.51	1.62	2.99
1972	88.70	117.10	164.44	118.63	45.25	60.37	30.25	25.43	30.22	33.64	17.20	22.77	72.38	53.36	4.02	11.60
1973	123.14	149.26	217.55	118.40	64.27	46.51	34.29	28.26	45.60	38.73	22.13	20.29	95.27	83.44	21.13	58.86
1974	151.99	167.04	243.29	146.30	76.17	76.48	48.76	44.03	59.90	56.04	20.72	17.07	106.66	111.67	14.88	70.26
1975	169.74	242.18	284.06	197.81	105.57	121.28	45.19	68.13	75.16	74.81	34.79	40.63	84.84	110.55	11.05	15.97
1976	188.68	255.88	250.00	145.04	85.35	118.98	40.73	79.72	51.31	83.95	24.85	41.99	48.76	87.27	10.80	19.36
1977	254.26	272.90	227.17	147.21	121.06	131.66	62.93	79.56	81.09	93.20	34.72	33.38	54.11	58.89	43.66	45.77
1978	396.25	368.81	230.70	223.63	162.21	152.53	105.04	65.52	119.06	108.97	57.63	48.75	59.27	93.79	58.41	29.19
1979	490.11	603.66	317.01	330.21	197.87	197.59	142.92	166.50	112.64	161.58	61.72	80.50	93.58	117.75	48.40	50.32
1980	513.00	524.67	374.23	303.34	169.19	259.84	141.46	189.48	147.30	131.40	49.70	83.94	92.83	127.29	46.35	150.12
1981	385.02	496.46	306.05	236.27	101.14	123.17	85.26	65.68	70.62	57.53	41.13	43.93	78.79	194.71	22.02	62.83
1982	283.28	433.75	288.50	311.59	71.25	192.52	192.66	67.51	75.29	195.52	26.96	49.61	118.87	272.25	14.51	58.85

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-11.--China's foreign trade: Bilateral trade with selected Asian countries, 1952-82

(In millions of dollars)

Year	Burma		Pakistan		Sri Lanka		Malaysia		Singapore	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
1952	0.39	0.67	0.99	80.10	6.85	23.14	3.56	0.18	-	-
1953	.58	3.06	1.69	6.71	44.02	59.57	4.77	.97	-	-
1954	.37	.52	1.10	20.97	29.21	44.93	6.91	6.22	-	-
1955	10.68	17.29	.14	30.90	20.13	16.20	16.25	4.08	-	-
1956	22.35	17.97	8.60	14.42	35.84	50.40	24.62	9.56	-	-
1957	11.15	9.27	3.16	10.22	24.99	36.54	28.87	31.07	-	-
1958	11.79	3.44	9.05	16.82	32.08	15.46	13.84	3.86	27.52	43.26
1959	10.95	.39	6.72	1.60	22.87	26.97	5.95	.79	28.17	41.82
1960	17.98	7.01	1.87	15.53	22.18	27.25	6.96	.62	26.79	24.65
1961	20.91	39.68	2.77	8.75	23.23	18.68	8.56	.60	30.13	3.89
1962	26.05	20.48	2.77	2.09	25.66	28.76	5.13	.12	39.43	.34
1963	24.57	14.37	4.81	12.05	29.39	23.96	12.96	.01	50.99	5.69
1964	28.93	17.69	13.40	46.92	36.90	24.71	19.16	.06	52.25	.31
1965	25.80	16.45	15.55	44.05	28.86	38.19	21.58	.40	61.88	4.41
1966	7.99	15.92	35.65	31.85	35.56	38.38	23.21	.41	75.20	41.39
1967	12.97	8.12	49.56	32.34	33.07	39.62	28.21	.38	106.28	38.49
1968	1.41	-	16.04	23.97	41.11	31.27	29.82	.93	113.40	46.80
1969	-	-	21.19	20.70	45.90	40.32	31.66	.64	104.91	91.45
1970	3.71	.77	28.88	41.34	46.77	40.39	32.62	.22	101.46	44.82
1971	9.08	8.72	29.64	30.16	30.79	52.72	26.72	1.08	111.60	34.28
1972	11.52	13.92	21.75	18.56	26.02	36.69	40.67	3.70	117.76	47.62
1973	16.82	5.84	48.24	17.15	38.92	26.47	124.93	1.28	195.64	136.37
1974	17.38	38.16	59.32	8.76	86.45	51.37	152.26	3.91	201.43	140.91
1975	14.65	16.58	70.58	15.40	90.13	72.79	108.57	51.04	237.92	34.77
1976	6.78	20.17	59.79	17.39	41.03	51.56	87.38	49.03	199.34	54.56
1977	9.35	19.99	63.94	8.53	45.60	44.56	94.43	105.31	202.05	76.06
1978	13.40	28.89	89.31	43.01	53.72	60.53	163.19	111.15	247.88	46.29
1979	12.80	18.33	121.82	30.24	94.96	62.39	171.37	189.14	296.45	104.70
1980	17.09	34.34	139.81	175.49	60.88	71.98	184.47	239.93	420.91	189.85
1981	35.77	16.93	215.11	337.89	31.12	56.34	195.89	121.95	676.75	115.73
1982	32.09	15.33	205.77	144.93	38.01	7.25	184.56	159.58	644.51	105.69

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-12.--China's foreign trade: Bilateral trade with selected Western countries, 1952-82

Year	United Kingdom		Australia		Canada		France		Italy		Switzerland	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
	In millions of dollars											
1952	12.15	13.66	0.30	0.31	1.05	0.04	1.65	0.77	2.44	1.29	7.37	5.51
1953	29.85	67.19	0.72	2.47	1.24	.03	6.18	17.74	5.17	4.52	13.53	18.82
1954	24.59	46.09	1.05	2.80	1.10	-	5.61	9.56	3.07	4.98	6.17	13.86
1955	40.07	64.56	1.49	6.09	2.63	0.63	9.51	13.98	4.42	5.52	13.03	13.31
1956	49.16	63.34	1.70	9.67	3.23	2.14	18.45	19.94	10.03	9.22	13.64	25.26
1957	43.93	58.35	3.11	18.68	2.85	2.91	11.03	25.69	4.63	10.49	7.21	33.60
1958	75.73	128.22	4.72	31.18	4.20	6.53	15.50	18.92	8.10	31.00	13.49	18.39
1959	91.12	105.88	5.28	31.27	4.23	2.37	18.09	26.37	6.57	38.85	24.27	20.49
1960	81.96	104.51	5.02	21.69	3.68	13.77	18.42	41.49	8.16	37.49	24.71	23.01
1961	57.83	46.25	3.88	187.75	2.29	167.88	15.15	33.73	5.90	34.82	23.60	11.64
1962	60.20	31.96	7.06	106.19	3.52	156.87	15.52	54.48	9.19	23.68	15.73	8.41
1963	72.67	42.90	10.81	245.60	4.83	111.10	19.02	74.06	15.09	24.73	19.03	4.30
1964	101.60	69.66	18.44	184.05	10.12	161.99	37.48	64.66	16.91	17.19	29.02	12.73
1965	135.54	123.06	20.88	214.97	15.63	125.77	48.98	71.94	25.97	59.76	42.34	21.82
1966	139.10	203.75	21.72	104.46	22.72	230.19	59.60	118.77	37.09	68.73	48.73	26.64
1967	129.94	219.43	24.27	243.00	22.30	101.57	56.65	88.22	37.24	76.95	41.53	28.50
1968	118.52	176.26	25.70	121.26	23.38	167.65	67.35	114.78	29.45	82.40	44.04	31.02
1969	119.92	283.55	30.64	120.62	25.41	104.40	71.75	57.31	43.70	65.85	43.76	22.47
1970	103.89	385.02	31.68	130.34	19.85	135.90	63.32	109.51	46.72	55.11	45.12	24.13
1971	123.58	166.17	36.40	22.39	25.14	197.69	64.04	113.32	51.48	54.05	29.99	21.49
1972	134.00	185.88	46.97	39.46	52.00	300.90	85.85	131.84	83.80	78.86	53.30	36.12
1973	208.43	423.73	81.86	134.70	69.74	377.38	167.32	481.09	115.43	77.75	121.27	118.14
1974	282.05	443.82	112.19	362.91	78.24	566.67	180.11	734.37	90.54	114.38	110.86	107.14
1975	241.66	244.10	70.12	403.19	81.61	460.68	148.10	355.81	101.38	148.21	111.81	106.07
1976	266.70	169.88	89.12	341.74	89.37	255.77	128.85	477.41	120.43	167.32	93.60	92.95
1977	250.89	279.36	100.94	517.87	79.97	460.58	141.50	279.21	112.20	95.86	85.58	170.72
1978	370.44	296.30	117.64	715.11	94.84	573.95	178.39	247.07	165.46	190.93	103.43	299.20
1979	478.87	501.15	156.11	985.19	145.13	622.44	233.98	406.20	302.80	308.71	169.32	207.64
1980	563.69	540.00	223.65	1,062.96	137.38	816.79	340.50	314.69	351.12	248.89	205.43	235.23
1981	421.97	238.48	240.43	750.99	186.25	750.99	292.72	403.88	263.82	351.22	121.32	184.11
1982	313.59	264.17	227.22	931.06	174.36	1,270.51	285.67	237.72	239.79	323.23	111.89	171.92

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B.-13.--China's foreign trade: Major export commodities, 1952-82

Year	Cotton yarn	Cotton fabrics	Cotton polyester fabrics	Rayon fabrics	Xianggu mushroom	Tungsten ore	Crude oil	Refined petroleum products
	Tons	Million meters	Million meters	Million meters	Tons	1,000 tons	1,000 tons	1,000 tons
1952-----	109	16	0	0	84	21.8	0	0
1953-----	181	44	0	0	126	24.1	0	0
1954-----	871	76	0	0	341	28.8	0	0
1955-----	8,092	180	0	0	466	31.9	0	0
1956-----	13,046	355	0	0	525	27.8	0	0
1957-----	9,997	350	0	0	224	35.4	0	0
1958-----	10,796	460	0	0	371	32.4	0	0
1959-----	18,924	629	.00	14.78	224	31.9	0	0
1960-----	23,406	591	.00	25.19	179	25.2	0	0
1961-----	19,178	590	.00	47.86	27	31.9	0	0.5
1962-----	21,827	549	.00	89.14	34	25.4	62.8	27.1
1963-----	22,462	602	.40	76.95	58	22.4	74.7	6.6
1964-----	23,442	737	.81	111.13	128	16.3	91.6	35.2
1965-----	31,298	803	1.52	113.01	204	20.9	196.4	102.2
1966-----	22,626	951	6.44	144.62	353	20.6	198.7	197.0
1967-----	20,956	841	8.29	103.26	0	16.3	160.7	136.0
1968-----	24,821	783	10.94	118.90	332	10.4	131.2	106.0
1969-----	21,573	744	20.62	99.20	382	12.2	107.0	142.1
1970-----	22,081	796	13.16	81.82	477	8.2	191.5	193.2
1971-----	22,353	753	21.87	76.52	532	16.5	262.5	373.5
1972-----	19,596	951	43.44	89.81	600	16.3	636.0	890.0
1973-----	29,720	961	58.24	91.34	239	14.2	1,834.1	1,161.7
1974-----	23,007	739	27.83	78.25	289	16.3	5,069.4	1,477.9
1975-----	32,768	1,072	70.97	90.58	207	14.3	9,877.9	2,100.6
1976-----	26,508	946	71.20	113.40	420	20.5	8,495.9	1,946.3
1977-----	21,319	772	83.20	88.92	405	13.6	9,106.8	1,964.5
1978-----	23,369	1,096	133.44	102.30	183	18.2	11,313.2	2,174.1
1979-----	24,250	1,109	222.42	122.68	114	21.3	13,431.5	3,034.0
1980-----	30,663	1,086	284.52	124.97	249	20.4	13,308.9	4,202.7
1981-----	33,661	1,174	425.18	138.32	199	22.1	13,754.0	4,591.5
1982-----	41,611	1,124	491.02	125.56	303	10.6	15,203.7	5,272.0

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-14.--China's foreign trade: Major import commodities, 1952-82

Year	Rolled steel	Chemical fertilizer	Polyvinyl chloride	Cotton	Polyester fiber	Grain		Timber
						Total	Wheat	
	1,000 tons	Million tons	1,000 tons	1,000 tons	1,000 tons	Million tons		1,000 cubic meters
1952	459.9	0.21	0	76.8	0	0	0	11.7
1953	1,036.4	.36	0	19.9	0	.01	.01	21.7
1954	824.3	.65	0	53.6	0	.03	.03	18.3
1955	833.0	.82	0	92.4	0	.18	.02	26.5
1956	724.0	1.34	0	47.9	0	.15	.02	26.6
1957	695.9	1.22	.67	47.7	0	.17	.05	27.8
1958	1,637.5	1.97	.69	79.1	0	.22	.15	53.7
1959	844.1	1.52	2.10	44.6	0	.00	.00	117.6
1960	866.0	1.25	1.07	93.8	0	.07	.04	111.5
1961	269.6	1.13	1.56	52.6	0	5.81	3.88	202.9
1962	230.1	1.24	.30	36.9	0	4.92	3.54	296.4
1963	249.6	2.53	.58	113.6	0	5.95	5.59	544.2
1964	413.3	1.81	.87	165.4	0	6.57	5.37	559.9
1965	758.6	2.73	.63	199.4	0	6.41	6.07	1,567.7
1966	1,410.1	3.15	4.93	120.1	0	6.44	6.21	1,539.8
1967	1,739.1	4.88	18.27	107.8	0	4.70	4.39	119.5
1968	2,022.0	5.21	33.90	75.8	1.6	4.60	4.45	111.2
1969	1,929.7	5.55	27.50	79.9	4.1	3.79	3.74	84.7
1970	2,667.0	6.42	39.29	81.2	6.4	5.36	5.30	81.3
1971	2,339.2	6.40	13.65	121.0	10.5	3.17	3.02	72.2
1972	2,358.1	6.76	53.35	195.6	18.4	4.76	4.33	224.7
1973	4,088.5	6.28	61.67	476.8	28.0	8.13	6.30	652.6
1974	3,744.3	5.10	64.52	373.1	48.1	8.12	5.38	934.4
1975	4,006.5	4.94	31.58	177.0	67.3	3.74	3.49	281.3
1976	4,931.0	4.59	45.27	188.4	94.2	2.37	2.02	737.8
1977	5,255.5	6.40	59.61	181.1	141.7	7.34	6.88	538.8
1978	8,637.6	7.33	79.94	509.5	179.7	8.83	7.67	534.0
1979	8,472.5	8.39	66.03	548.6	125.8	12.36	8.71	579.3
1980	5,006.4	10.02	67.50	897.6	251.0	13.43	10.97	1,812.3
1981	3,332.2	9.31	12.12	766.1	341.1	14.81	13.07	1,552.9
1982	4,137.0	11.11	15.50	474.0	169.1	16.12	13.53	4,827.1

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-15.--China's industrial sector: Total energy production and its composition, 1953-82

Year	Total energy production	Shares of total energy production			
		Coal	Crude oil	Natural gas	Hydro-power
	Million tons of standard fuel	Percent			
1953	51.92	96.3	1.7	0	2.0
1954	62.62	95.8	1.8	0	2.4
1955	72.95	95.9	1.9	0	2.2
1956	82.42	95.3	2.0	0	2.7
1957	98.61	94.9	2.1	.1	2.9
1958	198.45	97.1	1.6	.1	1.2
1959	271.61	97.0	2.0	.1	.9
1960	296.37	95.6	2.5	.5	1.4
1961	212.24	93.5	3.6	.9	2.0
1962	171.85	91.4	4.8	.9	2.9
1963	170.09	91.1	5.4	.8	2.7
1964	172.32	89.1	7.0	.8	3.1
1965	188.24	88.0	8.6	.8	2.6
1966	208.33	86.4	10.0	.8	2.8
1967	174.94	84.1	11.3	1.1	3.5
1968	187.15	83.9	12.2	1.0	2.9
1969	231.04	82.2	13.5	1.1	3.2
1970	309.90	81.6	14.1	1.2	3.1
1971	352.89	79.3	16.0	1.4	3.3
1972	377.85	77.5	17.3	1.7	3.5
1973	400.13	74.4	19.2	2.0	4.4
1974	416.26	70.8	22.3	2.4	4.5
1975	487.54	70.6	22.6	2.4	4.4
1976	503.40	68.5	24.7	2.7	4.1
1977	563.96	69.6	23.7	2.9	3.8
1978	627.70	70.3	23.7	2.9	3.1
1979	645.62	70.2	23.5	3.0	3.3
1980	637.21	69.4	23.8	3.0	3.8
1981	632.23	70.2	22.9	2.7	4.2
1982	667.72	71.2	21.9	2.4	4.5

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Note.--1. Excluding bio-energy, solar, geothermal and nuclear energy.

2. All fuels are converted into standard fuel with thermal equivalent of 7,000 kilocalorie per kilogram. The conversion is as follows (Figures in brackets refer to thermal equivalent):

   1 kg of coal (5,000 kcal) = 0.714 kg of standard fuel

   1 kg of crude oil (10,000 kcal) = 1.43 kg of standard fuel

   1 cubic meter of natural gas (9,310 kcal) = 1.33 kg of standard fuel

   The conversion of hydropower into standard fuel is calculated on the basis of the consumption quota of standard coal for thermal power generation of the year.

Table B 16.--China's industrial sector: Total energy consumption and its composition, 1953-82

Year	Total domestic consumption	Shares of total energy consumption			
		Coal	Crude oil	Natural gas	Hydro-power
	Million tons of standard fuel	Percent			
1953	54.11	94.33	3.81	0.02	1.84
1954	62.34	93.45	4.33	.02	2.20
1955	69.68	92.94	4.91	.03	2.12
1956	88.00	92.73	4.83	.03	2.41
1957	96.44	92.32	4.59	.08	3.01
1958	175.99	94.62	3.92	.06	1.40
1959	239.26	94.68	4.05	.14	1.13
1960	301.88	93.90	4.11	.45	1.54
1961	203.90	91.31	5.47	.94	2.28
1962	165.40	89.23	6.61	.93	3.23
1963	155.67	88.93	7.20	.81	3.06
1964	166.37	87.97	8.04	.73	3.26
1965	189.09	86.45	10.27	.63	2.65
1966	202.69	86.24	10.17	.67	2.92
1967	183.28	84.77	10.89	.84	3.50
1968	184.05	83.79	12.09	.76	3.36
1969	227.30	81.93	13.76	.82	3.49
1970	292.91	80.89	14.67	.92	3.52
1971	344.96	79.19	16.00	1.44	3.37
1972	372.73	77.51	17.17	1.73	3.59
1973	391.09	74.84	18.58	2.03	4.55
1974	401.44	72.14	20.72	2.49	4.65
1975	454.25	71.85	21.07	2.51	4.57
1976	478.31	69.91	23.00	2.81	4.28
1977	523.54	70.25	22.61	3.08	4.06
1978	571.44	70.67	22.73	3.20	3.40
1979	585.88	71.31	21.79	3.30	3.60
1980	602.75	71.81	21.05	3.14	4.00
1981	594.47	72.74	19.92	2.85	4.49
1982	619.37	73.92	18.67	2.56	4.85

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-17.--China's transportation sector: Length of transport routes, 1952-82

(In thousands of kilometers)

Year	Operating railways		Highways	Inland navigable waterways	Civil aviation routes	
	Total	Of which electrified railways			Total	Of which: international routes
1952	22.9	0	126.7	95.0	13.1	5.1
1953	23.8	0	137.1	95.0	14.0	5.0
1954	24.5	0	146.1	95.0	15.2	5.0
1955	25.6	0	167.3	99.9	15.5	2.6
1956	26.5	0	226.3	103.6	19.1	4.8
1957	26.7	0	245.6	144.1	26.4	4.3
1958	30.2	0	421.8	152.0	33.0	4.4
1959	32.3	0	507.9	163.0	37.2	5.3
1960	33.9	0	510.0	170.0	38.1	5.3
1961	34.5	.1	477.0	172.0	39.1	4.5
1962	34.6	.1	463.5	161.9	35.3	4.4
1963	35.0	.1	475.1	157.2	35.7	4.4
1964	35.3	.1	479.2	156.9	38.4	4.5
1965	36.4	.1	514.5	157.7	39.4	4.5
1966	37.8	.1	543.6	147.2	35.0	4.4
1967	38.6	.1	557.5	147.8	35.1	4.4
1968	38.8	.1	571.7	147.8	39.4	4.4
1969	39.3	.2	600.6	148.1	39.3	4.4
1970	41.0	.3	636.7	148.4	40.6	4.4
1971	42.8	.3	675.4	141.6	42.1	4.4
1972	43.9	.4	699.9	140.6	42.5	4.4
1973	44.3	.6	715.6	138.8	45.4	4.4
1974	45.1	.6	737.9	137.4	81.3	37.1
1975	46.0	.7	783.6	135.6	84.2	37.1
1976	46.3	.7	823.4	137.4	97.8	40.9
1977	47.4	1.0	855.6	137.4	132.1	40.9
1978	48.6	1.0	890.2	136.0	148.9	55.3
1979	49.8	1.0	875.8	107.8	160.0	51.3
1980	49.9	1.7	888.3	108.5	191.7	81.2
1981	50.2	1.7	897.5	108.7	218.2	82.8
1982	50.5	1.8	907.0	108.6	232.7	99.9

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-18.--China's transportation sector: Volume of freight traffic, 1952-82

(In billions of ton-kilometers)

Year	Total	Railways	Highways	Waterways		Civil aviation
				Subtotal	Ocean-going transport	
1952	76.2	60.2	1.4	14.6	2.8	0
1953	99.0	78.1	2.3	18.6	4.1	0
1954	120.3	93.2	2.9	24.2	3.7	.01
1955	132.0	98.2	3.4	30.4	7.0	.01
1956	159.1	120.4	4.4	34.3	6.6	.01
1957	181.0	134.6	4.8	41.6	7.7	.01
1958	244.9	185.5	7.7	51.7	7.5	.01
1959	327.2	247.6	10.7	68.9	9.6	.02
1960	366.7	276.7	13.2	76.8	11.8	.03
1961	262.7	200.8	7.6	54.3	11.7	.02
1962	223.6	172.1	6.2	45.3	11.3	.02
1963	234.8	181.6	6.4	46.8	13.1	.02
1964	275.0	212.6	7.4	55.0	18.1	.02
1965	346.3	269.8	9.5	67.0	23.7	.03
1966	390.1	301.9	11.6	76.6	28.0	.03
1967	305.0	226.9	10.1	68.0	26.4	.04
1968	310.9	223.9	8.4	78.6	35.5	.03
1969	375.3	278.3	11.0	86.0	36.5	.03
1970	456.5	349.6	13.8	93.1	41.9	.04
1971	520.5	376.6	15.4	127.6	70.7	.03
1972	564.4	391.3	16.4	151.0	90.1	.03
1973	629.4	408.2	17.6	194.9	127.7	.03
1974	631.4	381.3	17.5	216.3	147.1	.04
1975	729.7	425.6	20.3	257.5	175.7	.06
1976	690.4	386.9	21.0	246.7	161.2	.07
1977	796.9	456.8	25.1	276.2	174.1	.08
1978	982.9	534.5	27.4	377.9	248.7	.10
1979	1,090.7	559.8	26.8	456.4	317.4	.12
1980	1,202.6	571.7	25.5	505.3	353.2	.14
1981	1,214.3	571.2	25.3	515.0	364.3	.17
1982	1,304.9	612.0	30.3	547.7	376.9	.20

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-19.--China's transportation sector: Volume of passenger traffic, 1952-82

(In billions of person-kilometers)

Year	Total	Railways	Highways	Waterways	Civil aviation
1952	24.84	20.1	2.27	2.45	0.02
1953	35.02	28.2	3.38	3.41	.03
1954	37.12	29.5	4.13	3.44	.05
1955	35.31	26.7	5.03	3.52	.06
1956	46.55	34.4	7.82	4.23	.10
1957	49.63	36.1	8.81	4.64	.08
1958	57.20	40.9	11.61	4.58	.11
1959	71.14	51.7	13.97	5.34	.13
1960	88.35	67.4	14.60	6.19	.16
1961	110.57	89.6	12.88	7.95	.14
1962	108.56	85.9	14.14	8.39	.12
1963	72.65	53.2	13.43	5.88	.14
1964	68.56	48.6	14.63	5.13	.20
1965	69.71	47.9	16.82	4.74	.25
1966	77.87	50.5	20.75	6.42	.20
1967	86.44	59.6	20.00	6.60	.24
1968	93.67	68.1	18.58	6.78	.21
1969	107.06	77.2	22.22	7.47	.17
1970	103.09	71.8	24.01	7.10	.18
1971	110.65	76.2	26.81	7.34	.30
1972	123.58	85.2	30.25	7.71	.42
1973	132.56	90.3	33.33	8.36	.57
1974	137.61	92.6	35.49	8.69	.83
1975	143.55	95.5	37.45	9.06	1.54
1976	147.00	95.7	40.30	9.40	1.60
1977	158.70	102.3	44.80	9.80	1.80
1978	174.30	109.3	52.10	10.10	2.80
1979	196.80	121.6	60.30	11.40	3.50
1980	228.10	138.3	72.90	12.90	4.00
1981	250.00	147.3	83.90	13.80	5.00
1982	274.40	157.5	96.40	14.50	6.00

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-20.--China's national income statistics: Consumption and accumulation, 1952-82

Year	Total	Consumption	Accumulation	Consumption rate	Accumulation rate
	Billion current yuan			Percent	
1952	60.7	47.7	13.0	78.6	21.4
1953	72.7	55.9	16.8	76.9	23.1
1954	76.5	57.0	19.5	74.5	25.5
1955	80.7	62.2	18.5	77.1	22.9
1956	88.8	67.1	21.7	75.6	24.4
1957	93.5	70.2	23.3	75.1	24.9
1958	111.7	73.8	37.9	66.1	33.9
1959	127.4	71.6	55.8	56.2	43.8
1960	126.4	76.3	50.1	60.4	39.6
1961	101.3	81.8	19.5	80.8	19.2
1962	94.8	84.9	9.9	89.6	10.4
1963	104.7	86.4	18.3	82.5	17.5
1964	118.4	92.1	26.3	77.8	22.2
1965	134.7	98.2	36.5	72.9	27.1
1966	153.5	106.5	47.0	69.4	30.6
1967	142.8	112.4	30.4	78.7	21.3
1968	140.9	111.1	29.8	78.9	21.1
1969	153.7	118.0	35.7	76.8	23.2
1970	187.6	125.8	61.8	67.1	32.9
1971	200.8	132.4	68.4	65.9	34.1
1972	205.2	140.4	64.8	68.4	31.6
1973	225.2	151.1	74.1	67.1	32.9
1974	229.1	155.0	74.1	67.7	32.3
1975	245.1	162.1	83.0	66.1	33.9
1976	242.4	167.6	74.8	69.1	30.9
1977	257.3	174.1	83.2	67.7	32.3
1978	297.5	188.8	108.7	63.5	36.5
1979	335.6	219.5	116.1	65.4	34.6
1980	368.6	252.1	116.5	68.4	31.6
1981	388.7	278.1	110.6	71.5	28.5
1982	425.4	302.1	123.3	71.0	29.0

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

Table B-21.--China's telecommunications system by provinces, 1982

Province	Long-distance lines	Telegraph lines	Pole-carried telephone lines		Long-distance cables
			Total	Rural lines	
			10,000 km		Kilometers
National total	25,961	9,178	175.03	156.93	16,045.8
Beijing	1,704	379	1.04	0.94	1,242.7
Tianjin	553	96	.82	.77	802.2
Hebei	1,791	532	10.95	10.12	1,868.0
Shanxi	878	341	9.43	8.77	489.3
Inner Mongolia	818	407	7.62	6.56	.0
Liaoning	1,591	321	6.11	5.63	2,446.6
Jilin	919	277	5.62	5.13	661.2
Heilongjiang	1,279	389	6.48	5.58	262.8
Shanghai	1,269	182	.59	.46	1,643.6
Jiangsu	1,873	472	7.19	6.70	326.5
Zhejiang	1,355	453	6.03	5.52	1,842.3
Anhui	930	302	4.10	3.50	503.9
Fujian	856	321	4.69	4.10	701.2
Jiangxi	851	279	6.83	6.20	.0
Shandong	1,532	425	10.53	9.88	874.5
Henan	1,169	428	8.13	7.41	350.0
Hubei	1,151	325	9.92	9.29	100.9
Hunan	1,119	393	14.80	14.01	35.7
Guangdong	1,561	451	10.41	9.64	251.0
Guangxi	722	319	8.03	7.20	37.2
Sichuan	1,589	702	8.37	6.92	450.1
Guizhou	538	209	3.81	3.26	.0
Yunnan	1,046	470	7.99	6.98	.0
Tibet	78	106	.71	.52	.0
Shaanxi	1,040	355	6.06	5.49	458.8
Gansu	606	294	3.30	2.59	154.3
Qinghai	244	130	1.02	.47	.0
Ningxia	190	65	.51	.38	.0
Xinjiang	551	304	3.94	2.91	543.0

Source: Compiled from official statistics of the Chinese State Statistical Bureau.

APPENDIX C

A STATISTICAL MODEL OF THE PEOPLE'S REPUBLIC OF CHINA

This appendix presents a statistical model of the Chinese economy. The model consists of four sectors: economic activities, foreign trade, and bilateral trade between the United States and China, and population. The model is specially tailored for the economic analysis of this study. Although the model is not designed for planning purposes, it is capable of near-term forecasting of economic activities. By adding a few more equations and using more sophisticated estimators, the model can be used for economic planning.

All but two equations (China's grain imports from and textile exports to the United States) were estimated using Chinese data. There were significant differences in export and import values in the two countries' trade statistics that could affect the estimates made by this study. The reasons for the huge statistical discrepancies are unknown. The sample period used to estimate the U.S.-Chinese trade equations extends from 1972 through 1982; the sample period for the other equations extends from 1952 to 1982, unless stated otherwise.

The following are the estimated equations which were used for the economic analyses and the near-term forecasting of this study. The R^2 is an unadjusted coefficient of determination, the F is an F-statistic, and D.W. is the Durbin-Watson statistic. COI stands for the Cochrane-Orcutt Iterative technique. 1/ The t-ratios, which show the levels of significance of estimated coefficients, are given in parentheses. An asterisk (*) indicates that the estimated coefficient is statistically significant at the 5 percent level or better.

I. Economic Activities

1. Chinese national income equation.

$$Y_t = \underset{(3.2662)*}{5.5747\ AP1} - \underset{(-2.2879)*}{19.2876\ AP2} + \underset{(2.0068)}{16.8557\ AP3}$$

2. Chinese economic growth trend.

$$Y_t = \underset{(5.0181)*}{41.7131} + \underset{(12.0972)*}{7.5741\ T} + \underset{(2.8286)*}{46.6828\ EROD_t} - \underset{(-2.7490)*}{30.6813\ GLF_t} \underset{(-1.6306)}{-17.1015\ GCR_t}$$

$R^2 = 0.9515$ F(4, 26) = 127.4 D.W. = 0.7227

3. Chinese consumption equation.

$$\ln C_t = \underset{(-0.3852)}{-0.0429} + \underset{(2.7383)*}{0.2248\ \ln Y_t} + \underset{(9.1967)*}{0.7847\ \ln C_{t-1}}$$

$R^2 = 0.9927$ F(2, 27) = 1836.2 D.W. = 1.9642 COI

1/ For an explanation of these statistical terms, see Lawrence R. Klein, A Textbook of the Econometrics, Prentice Hall, 1974.

4. Chinese investment equation

$$\ln K_t = -1.6885 + 0.7737\ \ln Y_{t-1} + 0.3344\ \ln K_{t-1}$$
$$(-1.8830)\quad (2.7360)^*\qquad (1.9902)$$

$R^2 = 0.8515$ $F(2, 28) = 80.3$ D.W. = 1.3747

II. Chinese Foreign Trade

5. Chinese export equation

$$E_t = 0.0834 + 1.0262\ E_{t-1}$$
$$(0.4348)\quad (12.7414)^*$$

$R^2 = 0.9114$ $F(1, 28) = 288.1$ D.W. = 1.9101 COI

6. Chinese import equation

$$M_t = -0.9173 + 0.0136\ Y_t + 0.8651\ M_{t-1}$$
$$(-1.5546)\quad (2.4034)^*\qquad (9.4720)^*$$

$R^2 = 0.9494$ $F(2, 28) = 262.8$ D.W. = 0.9523

III. Chinese Bilateral Trade With the United States

7. Chinese exports to the United States

$$\ln EUS_t = 2.0434 + 0.5625\ \ln EUS_{t-1} + 0.7239\ EROD_t$$
$$(18.6779)^*\ (17.9668)^*\qquad (6.6962)^*$$

$R^2 = 0.9918$ $F(2, 8) = 485.3$ D.W. = 2.2406 Sample period = 1972-82

8. Chinese textile exports to the United States

$$\ln EUST_t = 1.4495 + 0.7005\ \ln EUST_{t-1} + 0.7342\ EROD_t$$
$$(9.1185)^*\ (14.3560)^*\qquad (5.0258)^*$$

$R^2 = 0.9848$ $F(2, 7) = 227.3$ D.W. = 2.7517 COI Sample period = 1972-8

9. Chinese imports from the United States

$$\ln MUS_t = 4.0927 + 0.2263\ \ln MUS_{t-1} + 1.2056\ EROD_t$$
$$(6.0304)^*\ (1.5505)\qquad (2.0660)$$

$R^2 = 0.6644$ $F(2, 8) = 7.9$ D.W. = 1.6418 Sample period = 1972-82

10. Chinese imports of grain from the United States

$$MUSG_t = 31.8526 + 0.3919\ MUSG_{t-1} + 200.9990\ EROD_t$$
$$(0.7843)\quad (1.5973)\qquad (2.9425)^*$$

$R^2 = 0.7694$ $F(2, 6) = 10.0$ D.W. = 2.7796 Sample period = 1972-84

IV. Population Growth

11. Population growth trend

$$N_t = \underset{(13.3105)^*}{493.0290} + \underset{(12.5247)^*}{16.8549T} - \underset{(-2.6991)^*}{11.9923F}$$

$R^2 = 0.9983$ $F(2, 27) = 7702.5$ D.W. = 0.6021 COI

Definition of variables

Y: Chinese national income in billions of 1952 yuan.

AP1, AP2, and AP3: Almon polynomial parameters.

T: trend.

ln: natural logarithm.

EROD: a binary variable for economic reforms and open-door policy.

GLF: a binary variable for the Great Leap Forward.

GCR: a binary variable for the Great Cultural Revolution.

C: Chinese consumption expenditures in billions of 1952 yuan.

K: Chinese total investment expenditures in billions of 1952 yuan.

E: Chinese total exports in millions of dollars deflated by the world export price index.

EUS: Chinese exports to the United States in millions of dollars deflated by the U.S. import price index.

EUST: U.S. imports of textiles from China in millions of dollars deflated by the U.S. import price index.

M: Chinese total imports in millions of dollars.

MUS: Chinese imports from the United States in millions of dollars deflated by the U.S. export price index.

MUSG: U.S. exports of grain to China in millions of dollars deflated by the U.S. export price index.

N: total population of China in millions.

F: a binary variable for the famine in 1960 and 1961.