

CHINA'S POSTWAR MARKETS

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By

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FOREWORD

The problem of the China market has long been of special interest to businessmen in the western world. At times it has taken the form of rosy predictions, not too well founded on facts, about the commercial millennium that would come if only the vast mass of the Chinese population could somehow acquire the purchasing power to buy Lancashire textiles, or American automobiles, Java sugar, Canadian wheat, and Australian wool. In the few years of comparative prosperity before the Japanese invaded North China in 1937 there was increasing interest in China as a market for capital goods as well. Today that interest has acquired a new significance, owing to the immense job of economic reconstruction which will have to be undertaken in China after the Japanese have been driven out. The requirements for that reconstruction will be far more extensive and varied than is often realized. It will not be merely a question of restoring factories destroyed by the enemy or by bombings. Equally important will be the task of replacing worn-out equipment in Free China and of satisfying that tremendous hunger for consumers' goods in a country which has been largely deprived of them for over five years. In addition, it seems almost certain that there will be new demands arising with the determination of the Chinese government to construct new railways, mines, public utilities and factories in regions that have been hitherto economically backward.

Because of these considerations there is a decided revival of interest among western traders and manufacturers in the possibilities of the postwar China market. The problem has become extremely complicated by a number of new factors. One of these is the abolition of extraterritorial privileges and the consequent necessity for conducting postwar trade in China on a new basis. Another factor is the tremendous currency inflation in China, which seems likely to increase even more rapidly as Allied military operations expand in China. A third factor is the whole trend of Chinese policy regarding control of her industry, trade, banking and investments—a trend which has thus far appeared to foreshadow greatly increased governmental participation in business. Over and above all these there is the

continuing problem of political and social stability in China and, closely linked with this, the question of what specific responsibilities China will be expected to fulfill as one of the great powers in the postwar family of nations.

It is certainly not possible to answer these riddles as yet. Some of the answers will not be known until after the war is over. Nevertheless, it is most important not only for government officials but for private businessmen and students of public affairs to begin serious study of the economic needs of postwar China and of the financial and technical means by which these needs can be supplied as rapidly as possible after the land and sea routes into China are reopened.

In the belief that the present survey provides a useful beginning in that process of study and advance planning, the IPR Secretariat circulated a preliminary draft of this report to a small group of interested readers for comment and criticism. In the light of these comments the author has made some further revisions and additions.

The author, Mr. Chih Tsang, has since 1941 been General Secretary of the Universal Trading Corporation in New York, the official purchasing agency of the Chinese Government. He taught at Fuh Tan University in Shanghai and has served for many years with the Shanghai Commercial and Savings Bank of which he is a director, and in which he has served as manager of the credit department from 1931 to 1939. In 1939 he came to the United States as secretary to Mr. K. P. Chen, who was the chief of the Chinese financial mission to the United States which arranged the \$25 million tung oil credit and the \$20 million tin credit with the Export-Import Bank in Washington for the Chinese Government. Mr. Tsang has published numerous studies of Chinese staple commodities, most of them having been published in the commodity series of the Shanghai Commercial and Savings Bank. The present survey was written in his private capacity. The opinions expressed therein do not represent the views of either the Universal Trading Corporation or the Institute of Pacific Relations. Mr. Tsang is solely responsible for all statements of fact or opinion in the report.

W. L. HOLLAND
Research Secretary

New York
October 1944

AUTHOR'S PREFACE

In preparing this study the writer has aimed at presenting in a systematic way the facts and figures of China's foreign trade in recent years, on the basis of which estimates have been made in regard to the future course of her trade. Ever since hostilities started in China proper in 1937 and especially after the extension of war to the whole Pacific area at the end of 1941, Chinese foreign trade has been greatly disrupted. Trade information on China has become more and more incomplete as the war has continued. The writer has endeavoured to supply that information in so far as possible in order to link the trade of the prewar years with that of the postwar period. With the help of the trade figures of the last three prewar years and in the light of what has taken place during the war period and what may possibly happen after the war, the writer has tried in this study to reconstruct the size, character, and direction of China's postwar foreign trade (Manchuria and Formosa included).

The writer is well aware that his estimates are very conservative but he has based them on the facts and figures available to him. A country can seldom change its economic structure overnight and the character of that economic structure will shape to a great extent the course of a country's trade. National aspirations do exercise a powerful influence on the economic development of a country, but it takes time for such aspirations to be translated into actual accomplishments. The writer therefore must admit that his estimates do not reflect the wishes of either the Chinese people or Western businessmen; they are rather deductions from actualities than from potentialities. The main theme of the writer is that the postwar market of China should not provide a field for exploitation but rather for development. Cash on delivery will not prove to be good practice in China; the future basis of business in China rather must be credit mainly.

In making this study the writer has benefited from numerous suggestions and candid criticisms from his friends. He is grateful to Mr. K. P. Chen, Chairman of the Shanghai Commercial and Savings Bank, for the guidance which he has kindly be-

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CHIH TSANG

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CHINA'S POSTWAR MARKETS

CHAPTER I

SOME ASSUMPTIONS ON POSTWAR CHINA

With the Allied forces steadily approaching the citadels of the Axis powers, many people have been pondering what will be in store for the postwar world. In order to win the war the United States has built a production machine of unprecedented capacity through which she has achieved virtually full employment, and many industries have experienced a period of relative prosperity in spite of all the perplexities and inconveniences of war economy. But now the days of a war economy are almost at a close, the peak of war production is said to have been passed, and the process of reconversion will soon begin. No matter when the war ends, however, a vast amount of war orders will have to be cancelled and a large surplus of war goods will remain to be properly disposed of. Will the huge production facilities that have been built up so laboriously to serve the war continue to serve the needs of peace? Will returning veterans be assured steady employment when military operations can no longer absorb the vast quantity of products which can be turned out by such facilities? Will there be "overproduction" again and in its wake a business depression? Apparently the solution of all these problems will depend a great deal upon the existence of a large peacetime market.

The hunt for markets is already on. In spite of great potential demands for consumers' goods, the United States domestic market alone apparently will not be large enough for a production machine designed for a world war; yet there will be no way to reduce production to its prewar volume without causing serious unemployment and maladjustment. In order to win the peace, markets must be found elsewhere.

Generally recognized as one of the greatest potential markets of the world, China should loom large in the postwar trade program of almost any major industry. Here is a country of over four hundred million people whose purchasing power will certainly account for a substantial volume of total world trade if it can be sufficiently raised. And here also are four million

square miles of relatively undeveloped resources, which when developed and exploited will contribute materially to the ultimate well-being of the whole world. China will and must be industrialized. Industrialization will mean on the one hand the establishment of factories and the installation of modern machinery for developing her natural resources—an undertaking which will necessitate the purchase of a tremendous quantity of capital and producers' goods from other countries. And on the other hand it will mean the production of goods of finer quality and in larger quantities for the needs of both home and abroad. The common front for the prosecution of the war now established among the United Nations should in peacetime enable China to trade more extensively with her Allies than heretofore. Given peace and freedom of trade, there is good reason to anticipate a new era of business opportunity arising on the Far Eastern horizon, of which China forms the most important part.

The question of what, how much, and where China is going to buy in the postwar period—or rather in the immediate postwar period of three or four years—is therefore gaining considerable practical interest as the end of the war draws near—especially to those who plan to transact business in China. The extent and character of her postwar purchases will certainly have many implications in the field of international trade and finance.

In answering this question we must try to conjure up a picture of postwar China as a whole, although such a picture will naturally be conditioned by the duration of the war and the conditions of peace, about which nothing definite can as yet be said. Thus our picture will have to be based on certain assumptions whose validity will determine to what extent our answer will prove correct. These assumptions are given as follows:

A. POSTWAR CHINA WILL BE AN EXHAUSTED COUNTRY WITH LITTLE FUNDAMENTAL CHANGE, HOWEVER, IN HER ECONOMIC STRUCTURE.

China will be exhausted of materials of every description, both capital and consumers' goods, at the end of the war. During the past six years of continuous fighting she has suffered tremendous losses in man power and properties and so long as

the war continues so will the process of destruction. The production of new industries in Free China may be stepped up to replace to some extent the production of those industries which have been destroyed. But in view of the almost insurmountable difficulties encountered in establishing new industries in the interior for lack of essential materials, skilled labor and adequate transport facilities, there is little hope of producing enough to make up all that has been lost. The blockade enforced by the enemy has prevented outside supplies from reaching Free China in anywhere near sufficient quantities and what has been brought in by air has had to be used entirely for military operations, leaving little for productive purposes. The reopening of the Burma Road may help to relieve the situation slightly; yet by that time military operations may have to be so expanded that increased supplies will be ultimately consumed in battle.

Furthermore, the industrial facilities remaining in occupied areas will be exposed to further destruction when the enemy is driven out. Because of the lack of proper flood control during the war, the guerrilla nature of Chinese warfare, and the pillaging of food supplies by the enemy, agricultural production in occupied areas has already deteriorated to such an extent that famine is becoming a frequent phenomenon in some regions. It is fortunate that as an agricultural region Free China has so far managed to remain more or less self-sufficient in food supplies, but increasingly apparent is the fact that because of the high cost of rice and other food products the majority of the Chinese people are undernourished. Not only is food becoming more scarce as the war goes on but almost every daily necessity including clothing, construction materials and transportation facilities, has been and will be found wanting. We can almost say that Free China is fast becoming a vacuum for all goods and materials, agricultural as well as industrial. The longer the war lasts the more absolute will such a vacuum grow.

Nevertheless, little change has taken place in China's basic economic structure. Fundamentally she has always been an agricultural nation and in all her prewar years her imports and exports reflected the characteristics of an agricultural economy. In the last few years before the war a sporadic process of industrialization was fairly well under way, as reflected in the growing volume of imports of capital goods such as metal

and machinery. But still it was mainly from her agricultural exports that she derived the means to buy from abroad. This process of industrialization was completely disrupted by the war. In spite of heroic efforts to establish industries in the interior, the industrial production of China today cannot yet compare with that of the last few prewar years. Thus the war has actually been fought on the basis of a great agricultural economy—a fact which explains why China can continue fighting in spite of never having been able so far to undertake a successful counter-offensive.

The war has put back the economy of China at least from ten to fifteen years; the end of it will find her exhausted but still an agricultural country—even more so in fact than in the last few prewar years. A state of exhaustion after the war will naturally produce certain unhealthy consequences. In order to carry on for instance, China will need more from abroad than previously, since temporarily she will be unable to produce as much as before the war. Moreover she will need certain vital items so badly that most of the buying power she will still have left will have to be used to satisfy certain elementary necessities first unless immediate and substantial outside help is forthcoming. China will produce less for export and consequently will be less able to pay for what she wants to buy out of her own resources. It follows therefore that the amount and character of her buying will be shaped somewhat by the nature and extent of the financial help she can obtain from the exporting countries.

China's first concern will be to recover her prewar level of productivity in the shortest time possible, an effort which will form the preliminary part of her postwar industrialization program. A country so exhausted, with a transportation system so disrupted and so deficient in skilled industrial personnel, may not be able to swallow an overwhelming dose of capital goods all at once even should such goods be available to her. Because of the exhausted state of her economy China may therefore be unable to buy very much more immediately after the war than prewar, though the character of her buying may be subject to certain radical changes. Unless substantial credits are available immediately after the war, the rate of her purchases abroad will be accelerated only after she recovers sufficiently from the devastating effects of the war and her industrialization

process is well under way. For the immediate postwar period even the mere restoration of her buying ability to the prewar level might become a difficult task were adequate financial assistance not forthcoming from the Allied countries.

This state of exhaustion has also brought about a wild inflation which will worsen as the war progresses. The Chinese Government was able to maintain the semblance of a free exchange market for almost two years after the war had broken out, thanks to a substantial foreign balance built up largely by the sale of silver to the United States. The dislocation of transportation routes and the destruction of production facilities in the fighting areas, however, resulted in a sharp decline of exports, thereby causing an ever-increasing excess of imports over exports. A continuous series of military reverses further undermined the confidence of the people in the ability of the government to stabilize its currency at a given level. The forced maintenance of an exchange market in Shanghai, for reasons that cannot be discussed adequately in this essay, gave the enemy an almost ideal opportunity to attack the Chinese dollar. Yet in spite of such unfavorable factors inflation did not reach serious proportions until the enemy's blockade was made almost complete following the extension of hostilities in the Pacific at the end of 1941 and the subsequent closing of the Burma Road. The stoppage of outside supplies for both Free and occupied China provided the final impetus for loosing the furious force of inflation. Prices rose by leaps and bounds not only in Free China but also in occupied areas where the circulation of puppet money further aggravated the situation. It is evident, however, that inflation in China has been caused more by the lack of supplies and production facilities than by the mere abundance of monetary circulation.

The end of the war will automatically curb inflation to a considerable extent by reopening the normal channels of obtaining outside supplies, but already it has left its mark on the whole economic life of the Chinese people. Fantastic prices naturally force down the capacity of consumption; therefore one outstanding consequence of inflation has been to promote economic self-sufficiency. Inability to buy either because of high prices or because of lack of supply has forced the people to grow what they eat, to eat what they grow, to make what they use and to use what they make. Although few statistics are available,

the physical volume of domestic trade has no doubt dropped tremendously. Unless inflation is adequately controlled, Chinese capacity of consumption once shrunk by the force of circumstances cannot be expected to expand immediately after the war. Thus with the exception of daily necessities China's imports of consumers' goods postwar may not be very substantial.

Probably in no other period will the resumption of normal trade be so contingent upon an adequate control of inflation. While the availability of outside supplies will help to curb it, at the same time inflation itself may create obstacles to reduce the availability of such supplies. How and at what level to stabilize Chinese currency are problems to be tackled even before the war ends, for unless her currency is properly stabilized the movement of goods between China and other countries will necessarily be impeded. Thus in spite of the fact that China is becoming a vacuum for goods of almost every description, that vacuum may not be quickly filled unless means are found to break through the partitions, so to speak, that retard the movement of goods from one country to the other.

One further implication of our initial assumption lies in the prospect that China will find herself stripped of all normal transportation facilities except for the most expensive kind when the war ends. The most important forms of transportation in prewar China consisted of boats and ships plying the inland waterways, mule carts in North China, and about 8,000 miles of railway. Truck transportation became vitally important only when the Chinese Government was forced to retreat to the interior, and at one time transportation in Free China was provided mainly by 30,000 trucks of various makes and sizes. The importation of trucks ceased with the closing of the Burma Road, however, and since then conditions of transportation have progressively deteriorated due to the breakdown of old trucks for lack of spare parts and accessories. If China and her Allies are to win the war we may assume that an overland or a sea route will have to be opened up first so that a substantial quantity of military supplies can be sent into the interior to make a counter-offensive effective. By the time the war is won a large number of military trucks and jeeps will have been shipped into China and numerous airfields will have been established with a sizable fleet of air transports. On the other hand most of her railways will have been wrecked and a con-

siderable proportion of her boats and mule carts destroyed. It is unlikely the number of trucks and airplanes will be sufficient to fill the gap left by the destruction of railway and shipping facilities. The inadequacy of transportation facilities and the high cost of transport by trucks and airplanes will constitute a serious obstacle to both the import and export trade of postwar China.

B. THE CHINESE GOVERNMENT AND PEOPLE WILL BE DETERMINED TO CARRY OUT A PROGRAM OF INDUSTRIALIZATION.

China's tendency toward industrialization was apparent even prior to the war, while the need for it has been all the more keenly felt during the war. When trade channels were shut off by the enemy and foreign supplies were no longer available, the Chinese people began increasingly to realize the vital importance of industrial national self-reliance. The force of circumstances has compelled them to refine their own steel, dig their own oil wells, manufacture their own tools and small weapons and to make many other vitally important articles however inadequate their production facilities. Industrial co-operatives were set up; new uses for native materials (such as the cracking of vegetable oils into fuel oils) were found and adopted; more and more intellectuals who formerly shunned any form of manual labor were obliged to use their hands as well as their brains. A great psychological change has taken place and the urge to industrialize is becoming a national issue. Already the Chinese Government has sent out a stream of young engineers to this country for training and practice in managing factories and for studying various postwar industrial projects.

The policy of the Chinese Government regarding postwar industrialization was outlined in two resolutions adopted by the Kuomintang and one by the National Defense Council. In view of their bearing on the future course of industrialization in China and consequently on the character of her postwar imports, the three resolutions are quoted in full in the Appendix.

* * * * *

Implementation of such a program will affect China's postwar purchases in several ways. Firstly, China will undoubtedly

buy as much capital goods as her limited buying ability will permit. Heavy imports of capital goods consisting of machinery and industrial equipment are absolutely necessary to any such program. In fact such was already the case in the last several years before the war broke out in 1937 and we may certainly expect in the postwar period a continuation of the trend indicated in the prewar years. If credits can be obtained from the Allied countries, they will be used mainly for the purchase of capital goods. The percentage of capital goods in Chinese postwar imports will therefore be very much larger than in prewar years.

Secondly, in the same proportion as China buys more capital goods will she import less consumers' goods, except for certain classes vitally necessary to the daily livelihood of the Chinese people. It is unlikely that foreign credits can be used for purchasing goods which are neither capital goods nor basic necessities. Control over the importation of non-essential goods as a corollary to the industrial policy of the government will probably be tightened since whatever financial resources China may possess will have to be devoted to the purchase of goods either for industrialization or the immediate feeding of the population.

Thirdly, because of the very fact that China's resources will be limited at the beginning, the purchase of capital goods will have to be confined to relatively inexpensive goods. Such products will not achieve the standard of efficiency attained by more expensive machinery nor are Chinese industrialists blind to the fact that it would profit them in the long run to buy expensive but high quality capital goods. But with limited resources at their disposal and with so many purchases to make, they will have little choice except to buy at the cheapest possible price. Probably a good deal of second-hand machinery will be bought, especially by private industrialists, and standard items will be preferred to specially designed machines.

Fourthly, China will need not only capital goods themselves but also the techniques and skills to operate them. In selling their machinery therefore, manufacturers will also have to train the Chinese in methods of operating and servicing; as a result firms which can offer the broadest vocational facilities will be given the best opportunity for business. The policy of encouraging foreign investment recently adopted by the Chinese Government is based on its recognition of the fact that modern factories

established by foreign interests in China will not only add to the industrial productive capacity of the country but will also serve as training grounds for Chinese industrial personnel.

Fifthly, the Chinese Government will itself undoubtedly become the biggest single buyer of capital goods in China in the carrying-out of the policy outlined above. The line of demarcation between industries that should be privately operated and those that should be state-operated has not yet been clearly drawn, but it is evident that many large-scale defense industries and communication facilities such as steel mills, large power plants, railroads, telegraph and radio communications, air transportation and others will be operated by the government. Thus manufacturers who wish to sell capital goods to China will probably have to deal more frequently with the Chinese Government than heretofore.

Sixthly, inasmuch as a regional development of industries is being planned by the government and capital goods will be shipped directly to where they are to be installed, the import trade of China will probably not be so highly concentrated in Shanghai as in prewar years. The opening of the Burma Road, the possible construction of a railway between Burma and China, the growth of air transportation and many other factors will also tend to spread trade more evenly over a number of ports of entry.

Lastly but not least important, it is apparent that most of the capital goods China will require will be purchased from the United States, partly because the latter will emerge from the war with the largest productive capacity for capital goods in the world and partly because of the likelihood that credits for postwar purchases will be more easily obtained in the United States than elsewhere. It is interesting to note that, as a result of a series of credits granted by the Export-Import Bank for financing Chinese purchases, during the war China has purchased what small amount of capital goods she could ship almost exclusively from the United States. Never in the past have Chinese industrialists been so familiar with American machinery and equipment. Good-will built in time of war will certainly induce them to purchase more in time of reconstruction. The probability that China will buy more from the United States does not of course exclude the possibility that China may also buy from many other countries (including the defeated Axis nations) so long as the terms of purchase are favorable.

It goes without saying therefore that the postwar industrialization program of China will have a profound effect on the character and direction of China's postwar purchases.

C. CHINA WILL BE POLITICALLY UNITED

Alongside this national urge for industrialization will prevail an equally strong desire for political unity. The presence of a common enemy, the great migration of population from the coastal provinces to the interior and the untold sacrifices made in behalf of a common cause have gone far toward welding the Chinese people into a nation in the Western sense of the word. China is no longer and never again can be considered merely a geographical expression, for the war has helped to teach the Chinese the folly of civil strife and the paramount importance of national unity. Moreover, it has almost completely liquidated what remained of the old feudalistic ideas and institutions and along with them the possibility of a resurgence of the war lords.

It is true that certain political differences have existed between the ruling party of the Kuomintang and the Communist party. Local conflicts and disputes between the Central and the Communist forces are still being reported. But unless strong outside forces intervene and thereby make of the conflict an international issue, we may safely say that the overwhelming desire of the Chinese people for civil peace together with the leadership of the Generalissimo will in the end force all parties to settle their disputes by peaceful means. The national unity so laboriously achieved will not easily be dissolved although moments may come when this unity will be threatened by internal or external events.

What is the possibility that foreign influences will interfere with China's progress toward national unity? Thus far all major international developments have been favorable to her efforts toward achieving political unity. Confidence that China will achieve final victory with the help of the Allies—due in large measure to the arrival of United States air support and the successful progress of fighting in Europe and the Pacific—has been a most important factor in sustaining popular morale and in preserving a united front throughout the long, grim struggle against Japanese aggression. The leaders of the United Nations

have been working hard and with considerable success to achieve unity of action during the war. The declarations at Cairo have been especially helpful by recognizing Manchuria, Formosa and other occupied areas as rightfully belonging to China, thereby enabling the Chinese Government to exercise control over such territories as soon as they are regained. So long as harmony of action continues among the leading Allies, there can be no ground for fears that international events will hamper China's efforts toward national unity.

The prospect that China will achieve national unity coupled with uncertainty regarding whether such newly won unity may still be threatened by domestic or international events will have an important bearing on the postwar trade of China. One consequence may be that foreign capital or investments will not flow into China with the speed and in the quantity China hopes for. Private capital is necessarily timid and usually will not enter upon a capital venture without sufficient guarantee of its security. Therefore whatever foreign credits can be obtained immediately after the war may have to come principally from foreign governments instead of private sources or at least from private sources under the guarantee of their respective governments. In view of the fact that far more countries will require financial assistance than are capable of rendering it, the size of the credits obtainable from foreign governments may be moderate. Such possibilities obviously will limit the amount of Chinese purchases abroad immediately after the war.

On the other hand the return of Manchuria and Formosa will greatly help to increase the volume of China's foreign trade. Manchuria was seized by the enemy in 1931 following the so-called Mukden Incident of September 18; since then, the enemy has attempted to industrialize the province but apparently without achieving his goals because of a lack of material resources. Formosa was annexed by Japan in 1895 and has been exploited mainly as an agricultural appendage of the Japanese industrial economy. In 1937 Manchuria's import trade amounted to \$255,000,000 and her export trade to \$162,000,000 while Formosa's imports and exports in the same year amounted to \$92,000,000 and \$127,000,000 respectively. Manchuria's most valuable exports are soy beans and beancake while those of Formosa are sugar and rice; these exports may give postwar China additional purchasing power in the world market.

Nevertheless both Manchuria and Formosa will probably need such purchasing power for their own postwar requirements. Furthermore the fortunes of the war itself will determine the condition in which Manchuria and Formosa are returned to China. So far as China proper is concerned, the economic benefits which may accrue from the return of Manchuria and Formosa will not immediately take the form of larger foreign balances available for her purchases. Certainly, however, both Manchuria and Formosa as part of China in the postwar period will cease to buy so exclusively from Japan as in prewar years. The original trade links between China proper and Manchuria, and between China proper and Formosa will be re-established, so that eventually not only China's foreign but also her domestic trade is likely to be increased materially through the recovery of these territories. In view of its importance and for the sake of convenience, the postwar market of Manchuria and Formosa will be treated separately.

Keeping in mind these general observations, we shall examine the postwar prospects of all the major groups of China's imports in the light of their trade position in the last three prewar years and of the subsequent developments regarding them since the war began. By "China" we mean only China proper without including Manchuria and Formosa. The term "postwar" is intended to cover only the immediate postwar period—a period, that is, of three or four years after the cessation of hostilities—since any attempt to cover a longer time would be complicated by too many uncertain or unknown factors. The import groups under discussion in the following three chapters will be divided into three classes—capital goods, producers' goods and consumers' goods. (See Table of Contents for an outline of Chapters II, III, and IV.) By capital goods we mean those *durable* goods which are used in the main as agents of production and which are not destroyed or converted in form in the process; by producers' goods, those *non-durable* goods which are used in the process of production and which are destroyed or converted in form in the process; and by consumers' goods, those goods which are used mainly for direct consumption. Such a classification is necessarily arbitrary; in each group some goods may be considered as producers' and others as consumers' goods while in a number of cases the same goods may be used for both production and consumption purposes.

CHAPTER II

POSTWAR CHINA AS A MARKET FOR CAPITAL GOODS

A. MACHINERY AND TOOLS

China's postwar program of industrialization will require imports of machinery and tools far exceeding any figure reported in prewar years, as we have already remarked. The average value of machinery and tools imported from 1935 to 1937, including accessories and parts, was about US\$29,988,000. It would not be surprising if this figure more than doubled in the postwar period.

Since this category includes a great many items, their postwar prospects will be considered separately under the following headings:

- (1) Electrical machinery, including generators, motors, transformers and electric fittings, fixtures and appliances
- (2) Textile machinery
- (3) Hand tools and machine tools
- (4) Boilers and steam and gas engines
- (5) Food machinery
- (6) Communication equipment
- (7) Scientific instruments
- (8) Printing machinery, paper-making machinery and office machines
- (9) Pumping machinery
- (10) Agricultural machinery including farm tractors
- (11) Other machinery

The average values of these imports for the last three prewar years, based on the trade statistics of the Maritime Customs of China, will be given in each section. All average values herein stated have been converted from Chinese custom gold units into American dollars at the average rates prevailing during this period, and are expressed in round figures up to a thousand dollars.

(1) *Electrical machinery*

The average values of electrical machinery and parts thereof imported from 1935 to 1937 are summarized as follows:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>
Electric generators and parts, including turbo-generator sets	US\$841,000	Germany 46% Gt. Britain 18 Switzerland 14 Japan 9 U.S.A. 7
Electric motors and parts	607,000	Japan 32 Germany 28 Gt. Britain 14 U.S.A. 6
Electrical transformers and other electrical machinery	880,000	Germany 39 Gt. Britain 27 Japan 17 U.S.A. 9
Electric cables and wires	1,497,000	Japan 38 Germany 30 Gt. Britain 17 U.S.A. 4
Electric meters	436,000	Germany 55 U.S.A. 16 Japan 9 Gt. Britain 5
Electrical fittings, fixtures, appliances, cells and other accessories	1,709,000	U.S.A. 36 Japan 20 Gt. Britain 18 Germany 18
TOTAL	5,970,000	

As the table shows, China annually imported in the three years immediately before the war about \$6,000,000 worth of electrical machinery, accessories and appliances, an amount which must be considered very moderate. That China did not import such machinery and parts more extensively was primarily due to her industrial backwardness and secondly to the fact that most of her industries were concentrated in a few coastal and river ports such as Shanghai, Tientsin and Hankow where power facilities were more or less adequate. The largest center of electrical power supply in China was Shanghai, where four companies with a combined capacity of about 300,000 kilowatts served the industrial and civilian needs of the International Settlement and its adjoining metropolitan areas. The

process of electrification, however, did not go very much farther than the few treaty ports, where a major portion of China's prewar industries were located and where, through contact with the outside world, the inhabitants knew more about the various uses of electricity. The two most important steps in speeding up electrification will consist of planned dispersal of industry throughout all parts of China and at the same time a wide dissemination of knowledge concerning the operation of electrical machinery and appliances.

We should note from the above figures that the United States, in spite of her tremendous development in electrical industry, was far from a leading supplier of such equipment to China. In prewar years China bought a great deal more electrical goods from Germany, Great Britain and Japan than from America because of the more favorable prices quoted by those nations. Their ability to quote lower prices was due to one or another of various factors: their lower cost of labor, which constitutes an important percentage of the total cost of making electrical machinery; the depreciation and manipulation of their currencies; or an aggressive selling policy and offers of liberal credit terms. The same trend continued after the war broke out. But when transportation between China and European countries became more difficult as the European situation deteriorated, imports of such machinery and parts from Japan into occupied areas became proportionately larger. The extension of Pacific hostilities in 1941 and the resultant Japanese shipping difficulties and her preoccupation with war production probably cut down such imports from Japan.

When the Chinese Government was forced to transfer its capital to the interior after two years of fighting, one of its foremost concerns was to secure power plants to run the few arsenals and factories removed from the coastal cities. With proceeds derived from a series of credits granted by the Export-Import Bank of Washington, the government ordered a number of power units from American manufacturers for shipment to China via the Burma Road. Nearly all these units were of small capacity ranging from 500 to 2000 kilowatts, so that they could be easily transported along Chinese highways and quickly installed. Unfortunately the Burma Road had already fallen to the enemy before the majority of these units could be delivered. In view of the present difficulties of transportation, it

is unlikely that they can be shipped immediately and probably not until the Burma Road is retaken.

The wartime purchase of American power units by China was significant in that such quantity purchases were almost the first China had made from the United States for a number of years. Specifications were drawn up to meet local requirements, training and practice were given to many Chinese engineers and American manufacturers were enabled better to understand the power problems of the interior of China. Thus it is apparent that after the war China will purchase a good deal more electrical machinery from America not only because both Germany and Japan may have been eliminated temporarily as important suppliers but also because the connections and business experience gained during the war will certainly bear fruit. Possibly for some years after the war China may buy annually as much as \$20,000,000 worth or more of such machinery and parts, with the United States securing a lion's share of this trade. Even more will be purchased should power plants in the occupied areas later be destroyed by the enemy. In the long run as Chinese labor becomes more skilled in industrial techniques, China will manufacture herself most of the electrical machinery she needs. Even before the war she had already succeeded in manufacturing a large number of motors.

The principle of buying at the least possible cost will always operate, and the cost of labor in China will remain lower for some time than in most other countries. In order to maintain a healthy market for such machinery in China, foreign manufacturers may find it desirable or even necessary to establish branch plants in China where local labor can be utilized to make parts which do not require special skills, while those parts that can be made only with the aid of complicated machinery and a high degree of skill would be shipped to China for final assembly. Such an arrangement will lower production costs considerably and thus render such goods more easily marketable in China.

(2) *Textile machinery*

The textile industry, consisting chiefly of cotton mills, was China's largest industry before the war. In 1937 Chinese cotton mills contained a combined total of 5,032,000 spindles, of which 2,627,000 were owned and operated by Chinese, 2,184,000 by Japanese and 221,000 by British interests. They also had a total

of 59,000 looms, of which 25,000 were owned by Chinese, 30,000 by Japanese and 4,000 by British interests. The steady development of this cotton textile industry contributed materially to the decline over a number of years in imports of cotton yarn and piece goods, which until 1930 had constituted China's principal imports. Imports of cotton yarn for instance dropped from 187,000,000 pounds in 1919 to about only 1,000,000 pounds in 1936, while the value of China's imports of cotton goods declined from Chinese currency 268,000,000 in 1929 to Chinese currency 16,000,000 in 1936 (less than 2% of China's total imports in that year). For a population of 450,000,000 people, however, a total of 5,000,000 spindles and 59,000 looms did not even begin to approach the saturation point. Even India with a population of 380,000,000 had about 8,000,000 spindles and 160,000 looms during 1937. Naturally, therefore, textile machinery constituted a most important item among Chinese imports of machinery and tools.

In the three years ending with 1937 the values of textile machinery and parts imported, including sewing and knitting machinery, were as follows:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>	
Textile machinery and parts	US\$5,161,000	Japan	71%
		Gt. Britain	19
		Germany	3
		U.S.A.	2
Sewing, knitting and embroidery machines	312,000	U.S.A.	47
		Gt. Britain	25
		Japan	13
		Germany	9
<i>TOTAL</i>	<i>5,473,000</i>		

As shown by the above figures, Japan was by far the most important supplier of textile machinery to China during the last several prewar years, providing more than 70% of the total imports in this group, principally because the Japanese owned cotton mills in China with a total capacity of more than 2,000,000 spindles. Naturally these mills bought their machinery and accessories exclusively from Japan. Chinese cotton mills also purchased Japanese textile machinery either because the price quoted by Japanese manufacturers was lower than that obtainable elsewhere or because in a few isolated cases Japanese machinery proved to be quite efficient (such as in the case of the well-known Toyoda looms). While British manufacturers were

still able to retain a foothold, United States firms almost quit the market but continued to lead in the sale of sewing and knitting machines to China.

Since nearly all of the Chinese cotton mills were located in the coastal provinces and along the lower Yangtze valley, one by one they fell into the hands of the enemy as the Chinese Army retreated into the interior. Of the 5,000,000 spindles China possessed in 1937 only about 300,000 are now in Free China, about three-fourths of which are spindles successfully removed from the occupied areas. Of the approximately 4,700,000 spindles left in occupied areas only a small number were destroyed in fighting. In January 1941 reports indicated that about 4,400,000 spindles were being operated by the enemy or his agents. The question of how many will be destroyed in the event of an Allied offensive in China and how many more will be wrecked by the enemy himself during his withdrawal from occupied territory is difficult. Although cotton mills are not generally considered strategic industries or military objectives, there are no means of preventing destruction by the enemy or revengeful wrecking by the local populace when he is forced to retreat. The degree of destruction will largely depend upon how much fighting centers around the cities or ports where the cotton mills are located. If the enemy should collapse before evacuating those cities, most of the cotton mills situated therein might escape large-scale destruction. But whatever the future course of the war relative to the destruction of industrial properties in the occupied areas, China will undoubtedly possess far fewer spindles at its conclusion than before—perhaps no more than two or three million in all. The spindles of the Japanese cotton mills in China will of course be taken over by the Chinese Government if they escape destruction.

If the prewar total of 5,000,000 spindles was far from adequate to fill China's clothing needs, how much less so would only two or three million be? In both Free and occupied China the supply of clothing materials has been one of the most crying needs during the war. Backed by such an urgent demand, assured of an economic supply of raw cotton in its own land and freed from cut-throat competition with Japanese mills, the Chinese cotton industry certainly should be able to stage a rapid recovery after the war and imports of textile machinery will far exceed prewar figures.

Where will China look to obtain the spindles she requires? Formerly Japan possessed a large supply numbering more than 10,000,000. Since Japan has been the cause of so much property destruction, why should she not be forced to make reparation in terms of goods needed by China—such as textile machinery for instance? The transfer and shipment of perhaps three or four million spindles from Japan to China would help materially to relieve her acute shortage of such machinery. But we must face the possibility that before Japan surrenders most of her cotton mills may have already been destroyed by intensive Allied bombing or by willful wrecking. Moreover a large number of her spindles probably have been melted down to provide scrap for steel production, long a bottleneck in her war effort, while the rest of her spindles may have been so greatly over-used that by the time the war ends they will no longer be suitable for further operation. Therefore in spite of the prospect that China may obtain a certain number of used spindles from Japan as a form of reparation, a great deal of new textile machinery and parts will have to be purchased from abroad—most likely from Great Britain and the United States.

In addition to spinning machinery China will need to purchase weaving looms, finishing machines, knitting machines, sewing machines and also all types of woolen machinery. China produces not only cotton but also a fairly large quantity of wool which can be used for making coarse woolen fabrics; there is the possibility therefore that a number of woolen mills will be established in China after the war. In fact the importation of textile machinery into Shanghai, Tientsin and other occupied areas (mainly from Japan and to a lesser extent from Great Britain) started almost as soon as the fighting had stopped in those places. The prewar level of such imports was more than sustained in 1938 and 1939, amounting to \$7,285,000 and \$6,337,000 respectively, although ocean transportation was already becoming difficult. This fact further serves to indicate that textile machinery will be among those goods first purchased from abroad after the war. Consequently it appears reasonable to expect that annual Chinese imports of textile machinery in the immediate postwar period may well exceed a value of \$15,000,000.

(3) *Hand tools and machine tools*

In the three years ending with 1937 the annual importation of hand and machine tools by China was as follows:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>
Hand tools including files	US\$ 725,000	Germany 28% U.S.A. 25 Gt. Britain 22 Japan 17
Machine tools including pneumatic and electrically operated tools, lathes and other machine tools	1,124,000	Germany 45 U.S.A. 20 Gt. Britain 18 Japan 5
TOTAL	1,849,000	

Hand tools were and are still by far the most important for filling the basic needs of the Chinese people. Most of them were locally made although the iron and steel from which they were manufactured were usually imported. Thousands of blacksmith shops scattered all over the country turned out the most essential tools and implements such as axes, hammers, hoes and plows. Although not of uniform quality and as a rule not very durable, they were low priced and within the reach of Chinese artisans or farmers. Imported hand tools on the other hand were generally used in factories and better equipped workshops in the cities.

The war has depleted China of all her normal stocks of the iron and steel which go into the making of hand tools and whatever tools still remain in the hands of Chinese workers must soon become unusable. The end of the war should therefore release a long suppressed demand for hand tools which local blacksmiths probably will be unable adequately to meet for lack of raw materials. Their importation during the first few years after the war therefore should well exceed the average prewar figure—perhaps by 50%—and amount to about \$1,000,000 with the bulk coming from the United States and Great Britain. But sooner or later China will herself manufacture the majority of her hand tools. As she obtains an adequate supply of iron and steel and builds machine works for making such tools, their importation will gradually diminish.

Machine tools, usually considered the backbone of industrialization, will also probably be among the most important

types of machinery China will purchase from abroad. As shown above, China did not buy a very substantial quantity of such tools before the war primarily because of her lack of any large-scale metal-working industries. A large proportion of the machine tools she did import were intended for the use of arsenals. The fact that a number of arsenals were built with German cooperation and that German firms quoted the lowest prices goes far toward explaining why China purchased machine tools mainly from Germany. Soon after war broke out, the Chinese Government found it increasingly difficult to obtain supplies of munitions from abroad; democratic countries were not then engaged in war production, so they had little to offer in the way of such supplies. The only alternative left to China was to maintain or increase her own production of small arms and other war supplies by enlarging those arsenals and industrial facilities which had been successfully removed to the interior. The procurement of additional machine tools became therefore an urgent matter in her total war effort.

Through a series of credits granted by the Export-Import Bank of Washington and through the medium of the Universal Trading Corporation, the Chinese Government was able to buy machine tools from almost every leading manufacturer in the United States, not only for arsenals but also for various factories operated by the government as well as by private interests in Free China. The urgency of tooling-up United States war production after 1940 along with the closing of the Burma Road after the fall of Rangoon seriously limited the quantity of machine tools China could procure from this source. But nevertheless almost from America alone has China been able to obtain a scanty supply of machine tools during the war.

China's thirst for machine tools obviously has not yet been quenched and will grow even more acute as she embarks upon her program of industrialization. After the war the United States will have on hand a large stock of surplus machine tools. The sale to China of a substantial quantity of used or rebuilt machine tools at reduced prices would therefore be advantageous to both parties. Since labor costs in China are lower, some of the machine tools which are not highly automatic and are therefore considered uneconomical in America may still find employment in China, while in their place United States

manufacturers can install automatic machines to save the cost of labor.

While after the war China will undoubtedly import a great many more machine tools than ever before, their importation will be subject to limitations imposed by the buying power at her disposal as well as by the number of skilled mechanics she will be able to train in a given period of time. Taking all these factors into consideration, we can probably assume that the annual import value of machine tools in the few years immediately after the war will be two or three times the prewar figure.

(4) *Boilers and steam and gas engines*

Steam and internal combustion engines are prime movers in manufacturing operations and their importance to a program of industrialization is self-evident. The average values of such imports in the last three prewar years are summarized as follows:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>
Gas (coal or produce) engines	US\$ 53,000	Germany 34% U.S.A. 30 Gt. Britain 29 Japan 7
Gasoline and kerosene engines	128,000	U.S.A. 51 Gt. Britain 16 Germany 15 Japan 11
Heavy and crude oil engines	445,000	Germany 52 Gt. Britain 34 Japan 5 U.S.A. 1
Steam engines	258,000	Germany 27 Gt. Britain 26 Japan 21 U.S.A. 15
Others	177,000	U.S.A. 33 Gt. Britain 26 Germany 24 Japan 14
Boilers and heating equipment	1,508,000	Gt. Britain 39 U.S.A. 16 Germany 13 Japan 12
TOTAL	2,569,000	

In the above table the importation of turbo-generator sets, by far the most important of all prime movers, is not included since it has been dealt with under the section on electrical machinery. The more electricity is used as a source of power

the less will steam engines be used as direct movers of machinery. A more widespread use of electricity through the establishment of power plants would therefore act as a brake on imports of steam engines. But whether a steam engine or a turbo-generator set is used, boilers and other accessories are always necessary; in the absence of water power turbo-generator sets and boilers are mutually requisite. Since China intends to buy a great deal of electrical machinery after the war, the prospect follows that imports of boilers and other accessories will increase proportionately.

Among internal combustion engines, diesel oil engines have won a degree of popularity in China because their fuel cost is lower than that of other types. (Most of these engines were used in small power plants and river boats.) On the other hand, owing to the high cost of fuel, gasoline and kerosene engines have never met with much favor in China. When in 1939 the Chinese Government contemplated the purchase of a number of power units with part of the proceeds of the Export-Import Bank loan, it was thought at first that the diesel-operated power unit would best serve the needs of China because it could be most easily transported. The lack of fuel oil in China and the consequent necessity of importing oil for the operation of such units in the face of difficult transportation conditions did not favor such purchases, however. Until China is able to obtain a cheap domestic supply of fuel oil, the same consideration will hold true to some extent after the war.

(5) *Food machinery*

The most important types of food machinery which have been and will be imported by China are sugar-refining and flour mill machinery. In the three years ending with 1937 their average import values were as follows:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>
Machinery for sugar-refining, distilling and brewing	US\$ 893,000	Czechoslovakia 74% U.S.A. 11 Germany 10
Flour mill machinery	157,000	Germany 56 Gt. Britain 18 Switzerland 16 U.S.A. 5
<i>TOTAL</i>	<i>1,050,000</i>	

Many regions in South and Central China produce sugar cane, the most important ones being located in Kwangtung, Kwangsi, Fukien and Szechuan provinces, while many districts in North China and Manchuria are suitable for growing beets from which beet sugar can be made. For centuries cane sugar was produced in South China by crude native methods which in matter of both cost and quality could hardly compare with modern refining processes. Gradually native sugar lost ground to imported sugar, the latter becoming one of China's principal imports. Many attempts were made to develop sugar mills in China but for various reasons they were not very successful. The latest attempt was the establishment of a number of sugar mills in Kwangtung province, for which sugar-refining machinery was bought from Czechoslovakia. This project would have achieved success had the war not spread to South China and partially destroyed the equipment, but after the war China undoubtedly will try again to set up sugar-refining mills in the various producing districts. Most of the refining machinery will have to be imported; with European manufacturers temporarily withdrawn from the market, China will have to procure such machinery either from Great Britain or from the United States, depending upon the price and the terms she can obtain.

Flour-milling was the second largest industry in China during prewar years with 94 mills in 1936 annually producing about 65,000,000 bags of flour of 45 pounds each. Nearly all were owned by Chinese and their steady growth was instrumental in reducing imports of wheat flour from 7,459,543 quintals in 1929 to 310,069 quintals in 1936. Most of the mills were established more than ten years ago and American manufacturers provided a substantial part of their machinery. In more recent years only a few new mills have been built so that imports of such machinery were not very large. What was imported came mostly from German manufacturers who were able to quote much lower prices than their American or British competitors.

The war has destroyed a few flour mills in the fighting areas. While some small mills were successfully removed to the interior, most of the larger ones still remain in occupied areas, especially in Shanghai and Tientsin, and are being operated for the benefit of the enemy. It is impossible to predict how many will eventually be destroyed in the course of the war, but

obviously the more that are destroyed the more new flour-milling machinery will have to be imported.

Past experience has emphasized the undesirability of concentrating flour mills in a few coastal ports, a practice which had the effect of making transportation an almost all-important factor in operations. Mill owners often found it cheaper to buy wheat from abroad than to buy it from the interior and ship it to the ports for milling. As a result much of the wheat grown in the interior and far from the few railways or rivers had small chance for sale except at abnormally low prices. More logical and in the long run more economical would be the establishment of flour mills in the wheat producing districts themselves (North China especially) rather than in the trading ports; the long unsettled political conditions of the interior prevented this natural trend from governing in the past. Dispersal of this industry will create a steady demand for light flour-milling machinery which can be easily shipped to the interior and whose productive capacity will correspond with both the local supply of wheat and the local demand for flour. A small self-contained unit will probably be preferred to a large production mill.

(6) *Tele-communication equipment*

Tele-communication equipment (telephone and telegraph instruments and radio apparatus) is one of the few imports that have not been greatly affected by the war. The war has of course destroyed a substantial portion of Chinese telegraph and telephone equipment and at the conclusion of hostilities such equipment will constitute one of the "must" items in any program of reconstruction.

The average annual values of the principal items of tele-communication equipment imported in the three years ending with 1937 are summarized as follows:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>
Telephone and telegraph instruments and parts	US\$ 832,000	Germany 43% Belgium 17 U.S.A. 13 Sweden 10
Radio sets and parts	1,264,000	Gt. Britain 8 U.S.A. 51 Gt. Britain 16 Japan 16 Germany 8
TOTAL	2,096,000	

When in 1939 the United States Government granted a credit of \$25,000,000 to the Chinese Government for the purpose of purchasing supplies one of the most urgent items to be procured was tele-communication equipment. Probably for the first time China bought telephone and telegraph instruments and other signal equipment almost exclusively from the United States. Under subsequent credits established by the Export-Import Bank, further substantial purchases of such equipment were made. Most of the materials and equipment were purchased for the use of the army and the air force but a minor portion including broadcasting equipment was devoted to replacements in the field of civil communications.

The Chinese Government is the sole owner of all telegraph lines and wireless stations in China. In the postwar period as in the past it will continue to be the largest buyer of tele-communication equipment from abroad. Many telegraph and telephone lines will have to be laid and repaired and new wireless stations established; new broadcasting equipment will have to be installed to facilitate national and international communications. As a means of popular education, a public system of broadcasting with receivers installed at popular places may be adopted in all important Chinese cities. Through its National Resources Commission the Chinese Government has established a factory for the manufacture of radio parts but its present capacity is thus far too small to meet the needs of the Government. The advancement of popular education should mean increased purchases of radio sets by the Chinese people as a whole. The remarkable development of electronics during the war will also result in its wide application in China, most of which equipment will have to be imported. Postwar imports of such equipment may possibly increase therefore by over two or three times.

(7) Scientific instruments

By scientific instruments we mean barometers, thermometers, non-electrical meters, balances and scales, drawing, surveying, medical, optical, surgical and other scientific instruments and apparatus. These are the handmaidens of modern industrial civilization and are indispensable to health, technical research, industrial production or any other field of scientific endeavor.

It goes without saying that any program of industrialization in China will create a widespread demand for them.

China imported scientific instruments with an average annual value of \$2,248,000 in the three years from 1935 to 1937. About 58% of these goods came from Germany, 19% from the United States, 9% from Great Britain and 8% from Japan. The dominant position of Germany in this trade was due to her long-standing reputation in the manufacture of precision instruments and also to the lower prices she was able to quote. Some United States manufacturers tried strenuously to push their products in China but except in a few lines such as laboratory materials, dental instruments and balances and scales the German position remained well-entrenched until the war broke out.

The grant of a series of credits by the United States Government enabled China to purchase a large quantity of surgical and medical instruments from America, which were urgently needed at the time in Chinese field hospitals. A sizeable number of testing and measuring instruments was also ordered for the use of various arsenals and factories operating in the interior of China and for universities which had lost most of their laboratory equipment during the fighting and the ensuing migration to Free China. The latter purchases unfortunately were made too late; the Burma Road had fallen to the enemy before most of them could be shipped. Only a few very urgent items have been shipped to China by air.

The postwar demand for scientific instruments will stem from various sources. Firstly, nearly all Chinese universities (there are about forty important ones) will have to re-equip their laboratories. If each university were given only \$10,000 each year to equip its various laboratories, then at least \$400,000 worth of laboratory equipment will be required to supply all forty of these leading universities. Secondly, the government will need to equip its numerous experimental and testing laboratories established under the Ministries of Education, Economics, Agriculture, etc., most of which have been so depleted of testing instruments and materials since the outbreak of the war that their work has been practically suspended. The importance of research and testing for any program of reconstruction can not be overemphasized and substantial orders of all kinds of laboratory equipment will be necessary. Thirdly,

old hospitals which have been destroyed will have to be rebuilt and new ones added in order to care for the wounded, the sick and the general health of the population, thus creating a demand for surgical and medical instruments. Fourthly, many old factories will have to be repaired, rebuilt and redesigned while many new ones also will have to be set up. Damaged buildings and bridges in war areas will have to be reconstructed. All such work will create a demand for drafting, surveying and measuring instruments. Thus it is evident that postwar China will demand large quantities of scientific instruments and apparatus.

(8) *Printing machinery, paper-making machinery and office machines*

In the three years ending with 1937 the average import values of printing machinery, paper-making machinery, and office machines were as follows:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>
Printing and paper-making machinery	US\$740,000	Sweden 49% Germany 18 U.S.A. 13 Japan 9 Gt. Britain 5
Calculating machines and cash registers	116,000	U.S.A. 77 Germany 17
Typewriters	124,000	U.S.A. 70 Germany 15
<i>TOTAL</i>	<i>980,000</i>	

Owing to the lack of easily accessible sources of wood pulp and also to the highly competitive character of the world paper trade, China has never been able to develop a paper-making industry that could meet all her domestic needs, especially in the category of common printing and news-printing paper. In face of a steady development of her newspaper and printing industry, however, China was a heavy importer of all kinds of paper for a number of years. The few paper mills which existed before the war were small and did not have facilities for manufacturing newsprint. Only a few months before the outbreak of the war, however, a plan was drawn up to establish a comparatively large mill in Chekiang province which was subsequently abandoned. The lack of paper materials has been keenly felt in Free China, where newspapers must rely on a meagre supply of coarse

native paper. This fact coupled with the discovery of rich timberland in Szechuan and Yunnan provinces has prompted a number of Chinese industrialists to investigate the possibilities of establishing paper mills in China. The return of Manchuria and its rich timberlands will give further incentive to such plans. Although foreign competition after the war will act to a certain extent as a brake on any large-scale development of her paper industries, a constant and growing demand for paper products and a suitable native source of raw materials will tend to make such Chinese industry profitable. Thus the importation of paper-making machinery after the war will be moderately increased.

Since many printing shops have been destroyed, more and better printing equipment will be ordered as soon as the war is over. In addition a number of leading newspapers which moved from coastal cities to the interior will find it necessary to replace their old or destroyed machinery in order to resume operations upon return to their original localities following the withdrawal of the enemy. All these factors point to a post-war increase of orders for printing equipment from abroad.

The sale of office machines and typewriters in China probably will not increase greatly. Time will be required for the Chinese to learn and appreciate the use of modern business machines, while English typewriters cannot be adapted to Chinese use because of language differences. Foreign companies returning to China will bring office machines and typewriters but otherwise their importation will remain stationary for some time.

(9) *Pumping machinery*

Pumping machinery is widely used in industrial projects, especially in waterworks, powerplants, water control systems, oil drilling stations, mining operations and chemical process plants. In the absence of substantial domestic production, the import figures give a fair indication of the extent to which a country is developing its industrial plants.

In the three years ending with 1937 the annual import value of pumping machinery, pumps and parts averaged about \$400,000 with the United States supplying 30%, Great Britain 24%, Germany 20% and Japan 11% of the total. Given a postwar program of industrialization, this figure could certainly be increased two or three times. Pumps may also be widely used for

watering the rice fields of Central and South China, which need great quantities of water. During dry seasons the Chinese farmer paddles water into the fields by means of a cumbersome and inefficient wooden device; both men and cattle are employed and sometimes must work continuously day and night in event of drought. A few years before the war electric and oil pumps began to come into operation on farms neighboring industrial cities, whose use resulted in a greater yield at reduced labor cost. Unfortunately the war brought an end to this otherwise successful venture, but when the war is over the use of pumps in watering rice fields will be resumed and greatly extended.

United States manufacturers have excelled in the manufacture of pumps and will enjoy increased sales to China, especially in the temporary absence of German and Japanese competition. In the long run, however, China will have to make most of the pumps she requires herself and in this respect will have much to learn from American manufacturers.

(10) *Agricultural machinery including farm tractors*

Although China is primarily an agricultural country, imports of agricultural machinery and tractors have been very small. In the three years ending with 1937 China imported only about \$62,000 worth of agricultural machinery and \$178,000 worth of tractors, the latter comprising 56 units.

Several factors account for the absence of a substantial market for agricultural machinery. Firstly, the average size of a Chinese farm is too small for the successful operation of such machinery. China is primarily a country of small farms, especially in the coastal provinces, with a single farm usually covering no more than two or three acres—an area obviously inadequate for the efficient operation of a modern tractor or cultivator. Secondly, the average Chinese farmer is too poor to buy agricultural machinery; too many people live on the land and production per capita is too low to allow savings enough for expensive farm equipment. Thirdly, cheap labor is always available to the Chinese farmer and unless surplus labor is drawn away to the city through a process of industrialization, the use of agricultural machinery probably will not compare favorably with the employment of cheap labor. Its use might even force down the wages of farm labor to such an extent that eventually no advantage would be gained by the

use of machinery. Fourthly, the average Chinese farmer is not capable of operating modern machinery and what is more there are not enough technicians to teach him. His lack of education is both a cause and a result of his poverty. Fundamentally China is overpopulated agriculturally and, unless this population is greatly reduced, the prospect of using agricultural machinery extensively must be considered remote.

The farm population of China may be reduced either through war or through a process of industrialization. The former will reduce both city and farm population, while the latter will reduce farm population in favor of city population. The war has made such inroads on China's supply of manpower that undoubtedly both her farm and city population will be appreciably smaller when the war is over. Only after several years of industrialization during which farm labor will be drawn into the city will the time be ripe for the extensive use of agricultural machinery. Many small farmers will probably pool their resources to establish industrial cooperatives for the purpose of buying and operating such machinery and enough skilled workers will be trained in the cities for servicing it. A new and profitable field will be opened up not only for the importation of agricultural machinery but also for the establishment of factories in China to manufacture it. In the meantime and certainly not until the industrialization program is well under way, China's purchases of agricultural machinery from abroad will probably continue to be insignificant. For the purpose of estimate we may assume that the value of China's annual imports of agricultural machinery immediately after the war will amount to around \$200,000.

(11) *Other machinery*

So many other items of machinery remain to be considered that it will be impossible to estimate their trade prospects one by one in this short survey. But more specifically the following items of machinery in addition to those discussed above should be in demand in postwar China.

Cement-making machinery: China possessed a number of cement mills before the war but their production was far from sufficient. So much construction work will be necessary in postwar China that we may safely assume properly situated cement mills will be able to operate profitably for many years to come.

The establishment of cement mills in China will therefore be a sound business proposition and should bring about sizable purchases of cement-making machinery from abroad.

Machinery for manufacturing rubber goods: Before the war much progress was made in the manufacture of rubber goods such as shoes, overshoes, medical rubber instruments, etc. Generally small in size, these factories were concentrated in Shanghai and most of their machinery was purchased from Japan. An attempt to make rubber tires for bicycles and automobiles proved abortive due to the outbreak of the war. In view of the proximity of China to the principal source of raw rubber supply and the popularity of cheap rubber goods in China, especially rubber shoes, this industry's postwar prospects are good and more machines for making rubber goods will be imported.

Cigarette machinery: The cigarette industry was one of China's most important industries before the war, and like others it too was concentrated in Shanghai. Although a single firm—the British-American Tobacco Company—dominated the industry, owning large cigarette factories in the coastal cities and a leaf-baking and leaf-collecting system in the tobacco-growing regions of the interior, the number of Chinese-operated factories was growing steadily to meet the increasing domestic consumption of cigarettes. The war, however, destroyed a number of such factories and the Japanese Army took over nearly all those still intact in the occupied areas. Out of about 900 cigarette-making machines of various sizes operating prior to the war, one-third reportedly was destroyed and very few were removed to the interior. The scarcity of cigarettes due to decreased production has so discouraged Chinese smoking habits that the consumption of cigarettes in China immediately after the war will be far below the prewar level. At present it is impossible to predict how many more cigarette-making machines will eventually be destroyed but presumably most firms will have to install new machines in order to resume business. Consequently a steady demand for cigarette-making machines probably will persist for some time in the postwar period.

Nail and screw machinery: In prewar years China was able to manufacture most of the nails she used in various kinds of construction work but she was not self-sufficient in the supply of screws, bolts, and nuts. Most of the nail factories were located

in Shanghai and were either destroyed by the enemy or closed down for lack of raw materials during the war. Postwar repair and reconstruction work will certainly create a huge demand for nails and screws of all kinds. A sizeable importation of nail and screw machinery is therefore likely.

Match-making machinery: The manufacture of matches was also an established industry in China and a number of such factories were destroyed by the war. Since the use of matches is a daily necessity, many new factories will have to be set up after the war.

Road-building machinery: The building of highways throughout the country will continue to be the policy of the Chinese Government. In order to expedite road-building and to repair the numerous highways damaged by the war, large imports of road-building machinery such as bulldozers, power shovels, and rollers apparently will be necessary.

Machinery and equipment for chemical plants: A number of chemical works engaged in the manufacture of alkali products and basic acids were built in Shanghai, Tientsin, and other cities before the war. In 1936 with the help of Chinese banks the Yungli Chemical Industries established a large plant near Nanking for the manufacture of ammonia sulphate, a fertilizer widely used on Chinese farms. (The making of ammonia from air, coal and water is also a basic chemical industry vital to the manufacture of numerous important chemicals such as nitric acid, explosives, plastics and dyestuffs.) When the war broke out, this plant was damaged and later seized by the enemy.

During the war many attempts were made to establish chemical plants in the interior. An important portion of the proceeds of the credits granted by the Export-Import Bank was utilized to purchase various kinds of equipment for ammonia, nitric acid, sulphuric acid, soda, potassium nitrate and coke-oven plants. A number of Chinese engineers were sent to leading American chemical factories for training. Because of transportation difficulties most of the chemical equipment and machinery ordered has not yet been shipped but will certainly be dispatched to China as soon as the war is over.

Mining machinery: China's most important mineral resources which are capable of extensive exploitation are coal mines in various sections, iron mines in Hupeh and Manchuria, tin

mines in Yunnan and Kwangsi, tungsten mines in Kiangsi, antimony mines in Hunan and oil wells in Kansu. Lying in the category of strategic materials for the United Nations, tungsten and tin have been continuously exported during the war—first through Haiphong by the French Indo-China Railway, then through Rangoon by the Burma Road and finally by air transport to India and thence to the United States or Great Britain. When a \$20,000,000 tin credit was granted in 1940, a portion of the proceeds was used to purchase tin-mining equipment in order to increase native production. Large sums were also spent in purchasing oil-drilling equipment for developing oil resources in Kansu province. Unfortunately the Burma Road had fallen to the enemy before most of this equipment could be shipped to China and a substantial part has since remained in storage in the United States.

Any program of postwar industrialization for China would entail an intensive and extensive development of her mineral resources. Those which are most readily accessible to transportation and most easily marketable will receive the earliest attention. The importation of mining machinery will probably continue for many years and will be accelerated as interior lines of transportation improve. The quantity and source of such imports will depend mainly upon what terms and from what country China can obtain credits to finance her mining enterprises.

B. IRON AND STEEL

For various reasons China has never been able to exploit fully the few iron mines known to be in her possession. As industrialization progressed in the several years prior to the outbreak of war in 1937, iron and steel products were imported at a slightly accelerated rate. During the three years ending with 1937 she bought annually about 700,000 odd metric tons of iron and steel products from abroad. In the year 1937 the total value of iron and steel products imported by China amounted to US\$31,843,000 and ranked first among her many items of imports.

The major items of iron and steel products which China imported during the three years ending with 1937 are summarized as follows:

<i>Kind</i>	<i>Average Quantity (metric tons) 1935-1937</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>
Angles, tees, channels, girders and joists	41,000	US\$1,419,000	Germany 27% Belgium 27 Japan 19 Gt. Britain 18 U.S.A. 9 Luxemburg 7
Bars	112,000	3,806,000	Belgium 28 Germany 22 Gt. Britain 17 Japan 12 Luxemburg 11 U.S.A. 2
Rails	88,000	3,864,000	Germany 33 Gt. Britain 31 France 13 U.S.A. 8 Czechoslovakia 7
Sheets and plates	84,000	4,322,000	Japan 39 Germany 15 U.S.A. 15 Belgium 12 Gt. Britain 7
Tinned plates	41,000	4,265,000	U.S.A. 56 Gt. Britain 29
Billets, blooms, ingots and pig iron	50,000	898,000	Kwantung Leased Territory 37 India 20 U.S.A. 15 Germany 6
Wires, nails and related materials	68,000	2,790,000	Germany 32 Japan 24 Belgium 14 U.S.A. 7 Gt. Britain 6
Pipes, tubes and fittings	22,000	1,288,000	Germany 46 Gt. Britain 24 Japan 17 U.S.A. 6
Tool steel	8,000	933,000	Germany 45 Gt. Britain 17 U.S.A. 8 Japan 7
Scrap iron and steel	78,000	2,058,000	Belgium 27 U.S.A. 20 Japan 18 Gt. Britain 12 Germany 6
TOTAL (including items not listed above)	726,000	28,827,000	

These figures indicate fairly well the nature and capacity of China's prewar consumption of iron and steel inasmuch as China herself produced only a negligible amount. For a country of 450,000,000 people a yearly consumption of only some 700,000 metric tons of iron and steel ran to an abnormally low figure. Undoubtedly, however, there will be sufficient room for expansion once China achieves a higher level of industrialization. In America during the last decade iron and steel have been used principally in the automotive, construction, railroad and container industries, but in prewar China they were used mainly for the manufacture of simple tools, implements, household utensils, and containers. The absence of an automobile industry and of much construction work involving the use of structural steels limited calls for all major items of iron and steel. So long as China's industries operate on a small scale, her capacity for consuming iron and steel must remain moderate.

What will happen after the war? On the basis of the prewar figures, we may venture to make the following observations: During the first three or four years after the war China probably will consume annually more than 700,000 metric tons but not necessarily a great deal more than this prewar capacity and probably not exceeding 1,500,000 tons. After so many years of war, occupied and especially Free China have very few stocks left; in fact the war cut down the shipment of iron and steel by more than 60% in its first three years. While importation in 1937 amounted to more than 700,000 metric tons, it averaged only 200,000 metric tons annually from 1938 to 1940 when ocean transport was still available to a number of ports in the occupied areas. A very small quantity, probably not more than 50,000 tons, trickled into Free China via Canton, Haiphong and Rangoon from 1938 to 1940. Since Pearl Harbor shipments have come to almost a standstill both in free and occupied areas. Free China has been able to set up a few steel furnaces but their production amounts to only a few hundred tons per month. The shortage of iron and steel constitutes one of the worst effects of the enemy blockade because not only machine shops but all handicraft industries using simple tools have been seriously handicapped. The long-suppressed demand for simple tools and implements, most of which are worn out but which are vitally important to the Chinese worker, will mean greater

imports in the postwar period. Plows, hoes, hammers, axes and many other tools and implements must be replaced. The Chinese metal merchants' depleted stocks must be replenished. A tremendous quantity of nails and bolts will be needed to repair the vast number of houses and buildings destroyed by the war. Furthermore, the Chinese Government will consider the building of railways one of its most urgent tasks immediately after the war; the importation of rails will certainly run into a much larger figure than before the war.

How much iron and steel will China be able to obtain from domestic production in the postwar period? According to the fifth report of the Chinese Geological Survey, China proper has about 323,000,000 tons of iron ore reserves distributed in three main regions: (1) about 175,000,000 tons in North China; (2) 112,000,000 tons in the Yangtze valley; and (3) 36,000,000 tons in the southeastern provinces. More recent estimates may have revised the figure upward, but even so, mining installations, blast furnaces, transportation facilities, steel mills and most important of all a technical force to work the mines will be required to convert the ore reserves into actual iron and steel. None of these will be available immediately after the war. Mining installations reportedly set up by the enemy to exploit the iron ore deposits of the Lungyen district in Chahar probably will not be left intact for China's use when the enemy is driven out. The iron ore deposits most accessible to exploitation are located along the Yangtze River, especially around Tayeh in Hupeh Province and near Wuhu in Anhwei Province. Iron works situated at Hanyang in Hupeh Province formerly exploited the Tayeh ore but the essential equipment was later moved to Szechuan and re-installed to refine the ore found near Chungking. New iron works can be established at Tayeh or at Wuhu at the earliest possible moment after the war, since both enjoy the benefit of cheap and convenient transportation via the waterways of the Yangtze River. How much iron and steel can be produced depends obviously upon the size of such works, and the size in turn will be governed to a certain extent by the terms of credits and the degree of cooperation China obtains from friendly nations. We may safely assume, however, that the average output of iron and steel will fall far short of China's requirements for the first few years after the war,

for iron and steel plants can hardly be set up overnight on account of the bulkiness of their equipment.

China possibly may obtain a certain quantity of iron and steel from the Manchurian mines now operated by the enemy. In 1937 Manchuria produced 762,000 metric tons of pig iron and 427,000 tons of steel products. These mines have been operated by the Showa Steel Works which according to reports had increased its steel capacity to about 580,000 tons per year by the beginning of 1939. If China could take over these mines and steel mills intact, their producing capacity would certainly go a long way towards satisfying a part of her demands, especially for pig iron and low grade bars; but it is doubtful they will escape destruction by the enemy. Nevertheless in the long run they will become one of China's most important sources of iron and steel supply, for only a few iron mines in China proper are so rich in deposits and so favorably situated. In fact the Chinese Geological Survey estimated that the iron ore reserves of Manchuria amount to 883,000,000 tons, far exceeding the iron ore reserves in China proper. But at the same time China's appetite for such metals will grow steadily larger as industrialization accelerates, so that for many years to come she will still have to rely on imports to supplement her domestic production.

One limiting factor on China's purchases of iron and steel will be transportation. The shipment of iron and steel involves the use of extensive transportation facilities; if one ship can carry 2,000 tons of iron and steel the importation of 600,000 tons obviously will require three hundred ships. The real bottleneck may not be in ocean transportation, however, since the end of the war may release enough ships to serve all the needs of trade. China's inland transportation will certainly cause the most difficulty and the likelihood of re-establishing an efficient inland system immediately after the war is slight. Months and years will be required to build and rebuild highways and railways, to secure sufficient rolling stock and other transportation facilities, and to see that they function efficiently throughout the vast interior.

However anxious China may be for iron and steel, the rate of shipment will depend largely upon the capacity of the transportation facilities available at the time the war ends. In the absence of any remarkable improvement in transportation con-

ditions, the importation of heavy metals necessarily will be small in the first few years after the war. Hence the estimate that her yearly imports in the immediate postwar period will not exceed 1,500,000 tons.

After the war China will buy iron and steel mainly from the United States, Great Britain, and India, with each country's share roughly depending upon the terms and nature of the goods which can be offered. Strangely enough, American steel manufacturers were not among the most important suppliers of iron and steel to China before the war although the United States has long been the largest steel-producing country in the world. In 1937 she exported a total of about 3,500,000 tons of iron and steel, of which only 100,000 tons went to China. In the same year China imported about 700,000 tons from foreign countries, of which only one-seventh came from the United States. With the exception of tinned plates, the major portion of her iron and steel imports came from European countries,—especially Germany, Belgium and Great Britain—mainly on account of the lower prices usually quoted by European manufacturers. Presumably these were due to their lower cost of labor and their special efforts, particularly by German firms, to push sales by offering liberal credit terms and technical services. Not until 1939 when the war cut off European supplies substantially did China begin to buy more exclusively from the United States.

The large-scale bombing attacks now being carried out over Germany and the occupied countries may well severely damage most of Europe's iron and steel plants before the war is over. We may assume therefore that for some years after the war few erstwhile European suppliers (Great Britain excepted) will be able to export steel products to China. Although Russia possesses great producing capacity, all her steel, like that of the rest of Europe, probably will be reserved for rehabilitating industries in the war-devastated areas. A major portion of the iron and steel produced by Great Britain will be required to meet demands both at home and in Europe for postwar reconstruction purposes although a small proportion may be available for export to the Far East. As a result of the virtual elimination of continental European countries as suppliers, the only countries with an available supply of iron and steel for export will be the United States, Great Britain and India. Consequently

China will buy most of the iron and steel she needs from these countries.

United States steel manufacturers will undoubtedly take a lion's share of the postwar Chinese market, especially in high grade items such as tinned plates, galvanized sheets, tool steels, alloy steels, steel bars, channels, etc. Owing to her preoccupation with domestic and European needs, Great Britain may not be able to enter the Far Eastern market extensively as we have already noted. But the war has stimulated production of iron and steel in India with more than a million tons of steel being produced each year in the mining centers of Bihar and Bengal, only 400 to 500 miles from the Burmese frontier. Most of the steel now produced goes to meet war demands but after the war much of it will probably be available for export. Upon the opening of the Burma Road and/or the construction of a railway from Burma to China, India will find herself in a more favorable position than any other country to supply iron and steel to the interior of China.

The Chinese Government will be an important buyer of iron and steel, especially of rails, since the building of railways by the government will be given a high priority in the postwar program of industrialization. In order to speed up railway construction, however, the Chinese Government will probably require certain credit grants from foreign governments or manufacturers; hence the terms of such credits will determine from what country and to what extent China will be able to buy rails and other railway equipment. The possibility that after the war the United States will possess an abundant supply of second-hand rails and other railway equipment may lead to their disposal to China or other countries at terms advantageous to both parties. At any rate, some form of business cooperation between American railway companies and the Chinese Government should be possible to work out so that surplus rails or rolling stock can be put to good use in China.

China will buy a much larger quantity of scrap iron and steel than in prewar years. A country of low purchasing power, she must of necessity buy all her imports as cheaply as possible. Hand tools and farm implements made from scrap steel will be of inferior quality but cheap enough to correspond with the purchasing power of the common people. The establishment of steel mills will also require imports of scrap to be used as

charge in open hearth furnaces together with iron for making steel. The extent to which different grades of scrap iron and steel are imported will depend largely upon the difference between the prices quoted for the various items of steel and their scraps. The greater the difference between these two groups of prices, the more scrap China probably will buy.

C. NON-FERROUS METALS

(1) *Brass and copper*

The import trade in brass and copper was highly competitive before the war, with Japan, the United States, Germany and Great Britain as the leading suppliers. Out of an average import value of \$2,840,000 obtaining during the last three prewar years about 39% came from Japan, 29% from the United States, 20% from Germany and 7% from Great Britain. Germany led in supplying brass goods to China while the United States was the most important supplier of copper ingots, used chiefly in making Chinese coins. In regard to other brass and copper products, such as wires, sheets and plates, all four countries managed to maintain a competitive position. The outbreak of the war, however, reduced these imports from \$2,744,000 in 1937 to \$1,794,000 in 1938 since the Chinese Government discontinued making copper coins and a large number of machine shops using such metals were destroyed in the fighting around Shanghai and Tientsin. The figure was further reduced to \$1,108,000 in 1939.

Following their removal to the interior, Chinese Government arsenals and factories began to experience desperate shortages of such metals. A portion of the \$25,000,000 wood oil credit granted by the Export-Import Bank was utilized for purchasing brass and copper in the United States, whose arrival in the nick of time helped to keep a number of these factories operating. Unfortunately the Burma Road was closed too soon to allow a continuous flow of these vital metals into the interior.

China today has virtually exhausted all her remaining stocks of brass and copper. All kinds of scrap in brass and copper are being collected for use in the production of weapons, various machine parts and electrical goods. Thus far, rich deposits in copper ore have not been discovered or mined by modern methods. Substantial quantities of brass and copper products

therefore will have to be imported at least at approximately the prewar level once China undertakes any intensive program of industrialization. Given the temporary elimination of Germany and Japan as suppliers of brass and copper goods, the United States and Great Britain should certainly be able to take a much larger share of this trade than in prewar years. Also the Chinese Government may resume the issue of copper coins after the war, in which case a large quantity of copper ingots will have to be imported from the United States.

(2) *Lead, zinc, nickel, tin and other non-ferrous metals*

The annual importation of these metals during the last three prewar years amounted to a value of \$3,046,000, distributed as follows:

<i>Kind</i>	<i>Annual Import Value</i>	<i>Important Suppliers</i>	
Lead	US \$352,000	Canada	58%
		Gt. Britain	8
		U.S.A.	6
Zinc	798,000	Belgium	40
		Canada	25
		Germany	6
		Gt. Britain	3
Nickel	1,453,000	U.S.A.	94
		Gt. Britain	3
Tin	65,000	Straits Settlements	91
Other non-ferrous metals	378,000		

Large imports of nickel were entirely attributable to coinage purposes; for industrial uses less than 5% of the annual import value would be sufficient. Whether China again will use nickel as a metal for her subsidiary coins is problematical but in view of its relatively high cost it is more likely to be dispensed with. In that case the importation of nickel would certainly decline very substantially. While the consumption of other metals in this group will probably remain at about the same level in the postwar period, the discontinuance of imports of nickel as a coinage metal would bring down considerably the total import value of the whole group.

D. RAILWAY EQUIPMENT

The prior importance of the building of railways in any program of Chinese postwar reconstruction is generally recognized,

for without railways the very process of industrialization itself would be impossible. Not only should old and damaged railways be immediately rebuilt but many new trunk lines also should be constructed. For several decades a lack of adequate railway transport has been one of China's greatest problems and the postwar period must see an unhampered and country-wide development of her railways. Obviously aid from the Allied nations will be necessary to finance such railway construction on a national scale.

The purchase of railway equipment in the postwar years will therefore be governed both by the size and terms of the credits China can obtain from the Allied nations and by the shipping tonnage available for transporting such equipment. The prewar figures as summarized in the following table shed little light on the extent to which China will import railway equipment after the war, but they do indicate at least the general character of her past purchases along this line:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>	
Locomotives and tenders	US\$2,468,000	Belgium	27%
		Gt. Britain	27
		Germany	22
		Czechoslovakia	13
		Japan	5
		U.S.A.	1
Railway carriages and wagons	1,648,000	Gt. Britain	34
		Belgium	27
		Germany	18
		Japan	15
Other railway materials	1,348,000	Gt. Britain	34
		Germany	24
		U.S.A.	23
		Belgium	16
TOTAL	5,464,000		

It is interesting to note that in spite of the fact that the United States possesses the largest railway equipment industry in the world, she failed to provide any substantial quantity of such equipment to China in the prewar years. Several reasons account for the conspicuous absence of United States manufacturers from this trade. Firstly, very little American capital has been invested in Chinese railways although most of them were built with foreign funds. The struggle for railway concessions in China during the first two decades of the twentieth century

was one of the features of the old system of power politics then practiced in the Far East, but the United States did not actively participate in the game except in two cases—the 1911 Hukuang Railway loan and the 1916 Chuchow-Yamchow railway loan, neither of which, however, resulted in the establishment of railways because of political intervention. Since then, American interests have been shy of making investments in or granting credits to Chinese railways. Naturally the countries making the initial investments in Chinese railways occupied the most favorable position in providing those railways with new equipment from time to time—another instance of the fact that investment and trade usually go hand in hand. China bought most of her railway equipment from Great Britain and Belgium, therefore, since they were the largest investors in Chinese railways. Secondly, in an effort to encourage exports some European countries made it possible for their manufacturers to grant liberal credit terms to foreign purchasers through the operation of an export credit guarantee system by means of which a large portion of the credit risk was shifted from the manufacturers to their respective governments. European manufacturers thereby were enabled to sell railway equipment to China on a credit instead of strictly cash basis. Thirdly, the prices quoted by European manufacturers were lower, partly because of currency manipulations and partly because of the lower costs of labor in European countries. In a poor country like China the price of a commodity is almost always more significant than its quality.

The importation of railway equipment declined sharply after the war broke out; around half a million dollars' worth was imported each year in 1938 and 1939 and none at all after Pearl Harbor. Meanwhile China was suffering large-scale destruction of her railways and railway equipment. Of the 8,310 miles of railways in China proper (Manchuria excluded) about 6,566 miles have reportedly been seized by the enemy. Since most of the railroads were located in areas of heavy fighting, they sustained great damage and much loss of rolling stock and other equipment. Large sections of trunk lines were destroyed by Chinese forces themselves in the course of military operations and these were not rebuilt by the Japanese. Furthermore the Japanese have in most cases failed to keep the railroads now in

use in occupied territories in good repair or normally supplied.

Since railroad development is a key to the industrialization of China, rehabilitation and reconstruction of existing roads will be a most important concern after the war. Mr. Chang Kia-ngau, former Minister of Communications, estimates that to rebuild the lines destroyed and to complete those partially finished during the war (a total of 2,850 miles) China will altogether have to buy 456,000 tons of rails, 8,610 cars and wagons and 761 locomotives at an estimated cost of about \$100,000,000. Since the 456,000 tons of rail will cost about \$20,000,000, this will leave about \$80,000,000 worth of locomotives, railway cars, wagons and other railway materials to be purchased and shipped, provided that credits, manufacturing capacity and shipping tonnage are sufficiently available. Because China will urgently need other goods as well and in view of the probability of congested transportation facilities, probably three or four years will be required to complete the shipment. This prospect indicates that China will import about \$20,000,000 worth of railway equipment each year immediately after the war.

Where will China procure such materials? Historically speaking, Great Britain as the largest investor in Chinese railways will be the most interested nation. Belgium, Germany and other European countries preoccupied with their own rehabilitation problems will temporarily be left out of the picture. The only other country in a position to assist China in railway building will be the United States. Not only will China need to rehabilitate existing railways but also, as we have said, to build many new railroads for which the purchase of railway equipment may run into a much larger sum than the \$100,000,000 required for rehabilitation of the old. The whole situation depends upon what kind of credit arrangements China can obtain from Great Britain and the United States and involves the much wider question of the state of international relations.

E. AUTOMOBILES AND BICYCLES

The importation of automobiles, trucks, motorcycles, and bicycles in the three years from 1935 to 1937 is summarized as follows:

CHINA'S POSTWAR MARKETS

<i>Kind</i>	<i>Quantity (annual average)</i>	<i>Value (annual average)</i>	<i>Important Suppliers</i>
Trucks and chassis	3,505	US\$2,413,000	U.S.A. 73% Germany 23 Gt. Britain 2
Buses and chassis	89	113,000	Germany 73 U.S.A. 10
Passenger automobiles and chassis	2,087	1,391,000	U.S.A. 83 Gt. Britain 9 Germany 2 France 2 Italy 2
Auto parts and accessories		817,000	U.S.A. 81 Germany 6 Japan 6 Gt. Britain 5
Motorcycles and parts		137,000	U.S.A. 51 Germany 38 Gt. Britain 8
Bicycles and parts		1,638,000	Japan 70 Germany 16 Gt. Britain 6
Tires and tubes		1,439,000	Japan 49 Gt. Britain 20 U.S.A. 19 Canada 9
Other motor vehicles and parts		127,000	U.S.A. 24 Japan 23 Germany 20 Gt. Britain 9
TOTAL		8,075,000	

The most important items in this group—trucks, passenger cars, bicycles and tires and tubes—will now be discussed separately.

(1) *Trucks and buses*

In 1935 China imported 3,018 units of trucks and buses, in 1936—3,334 units, and in 1937—4,430 units. About 90% of such vehicles were chassis with the bodies remaining to be built in China. The increasing use of trucks and buses in the last few prewar years was largely due to the rapid extension of highways into all parts of China. A substantial number of trucks, sometimes converted into buses, were used to carry persons and goods to places inaccessible to railways while in large cities such as Shanghai, Tientsin and Hankow trucks began to be used increasingly for local deliveries. The outbreak of the war and the relentless bombing of the few railways forming the main arteries of transportation made truck transport

a military as well as a civilian necessity. When the Chinese army was forced to withdraw from the coastal cities in the latter part of 1937, it was apparent that continued resistance would have to depend upon a sufficient number of trucks to move men and supplies from the coastal ports to the inland cities or from place to place in the interior where no other effective means of transportation were available.

Since then, trucks have become a most important item of war supplies and their procurement and operation have been one of the most serious concerns of the Chinese Government. Trucks were imported through Shanghai, Kowloon and Canton, through Haiphong in Indo-China, through Rangoon in Burma via the famous Burma Road or through any port where importation was still possible. They were in fact among the few items whose importation was considerably increased by the war. When the \$25,000,000 wood oil credit already mentioned was granted in the latter part of 1938, trucks were first on the list of orders. These trucks were shipped either to Haiphong or to Rangoon and for some time formed the backbone of the whole transportation system moving supplies from the disembarkation ports to the battlefield. A considerable percentage of subsequent credits granted by the Export-Import Bank again was used for the procurement of trucks and parts while still another large number was obtained under the Lend-Lease program. Almost all leading makes of American trucks were represented on Chinese highways, most of them light trucks to suit the road and bridge conditions of the interior. Figures for the average number of trucks imported each year from 1938 until the closing of the Burma Road in the middle of 1942 are not available but should exceed the prewar figure by a wide margin.

The heavy importation of trucks during the past four years cannot have failed to impress the Chinese people with the importance of trucks as a means of transportation nor to cultivate the habit of using them once the war is over. Under painful circumstances and at great cost a large army of drivers and mechanics have been trained which ought to assure an adequate supply of personnel for the operation of trucks in the postwar period. Nevertheless, it must be noted that for a poor country like China, lacking the means of producing either trucks or the oil to run them, truck transport will usually prove to be very expensive compared with railroads, water carriers or mule carts. Essentially, truck transport has been a wartime military

necessity and its chief postwar use will be found in places where railway or water transportation is unavailable. Probably a large number of trucks will be converted into passenger buses, even where water transportation is available, since bus transportation is decidedly quicker and in most cases more convenient. But as far as transportation of goods is concerned, trucks will have little chance to compete with railroads or water carriers if the latter are available.

Thus we come to the question of the availability of railroad or water transportation when the war is over. Waterways are not easily destructible but railways and their rolling stock can be wiped out by bombing or other means without much difficulty. Certainly there is little reason to expect that the enemy will leave intact those railways under occupation once he is forced to withdraw. Instead China may expect to reconquer a land devoid of all railways, trucks, boats or mule carts; under such circumstances the importation of trucks to bear the main burden of transport will again become an immediate necessity. In spite of its expensive character, therefore, China may well continue to import trucks in large quantities for some time after the war. Time will be required to repair and build railroads, to resupply the waterways of Central China with cargo-carrying junks, and to provide the prairies of North China with a sufficient number of mule carts. Trucks will be indispensable for effecting quick relief and speeding up reconstruction work.

The main problem boils down to the kind of trucks China should import in order to achieve the most economical results. In this respect the most important consideration will be the relative fuel cost of different types of trucks. Before the war an increasing number of German diesel trucks were imported which won popularity because their fuel cost was decidedly lower than that of gasoline-operated trucks. After the war broke out, however, diesel trucks were not so easily available in America, where most of China's war purchases have been made. In addition the initial cost of diesel trucks was heavier so that with a given amount of money only a smaller number could be procured, thus reducing transportation capacity at a time when high capacity was most needed. In summary, a policy of expediency necessitated the purchase of gasoline-operated trucks during the war. After the war the question of making a choice between gasoline and diesel trucks will again arise; it will be

decided in the light of fuel economy and the relative performance of these two types.

In view of the fact that most Chinese highways and bridges are narrow, winding and poorly built, light trucks will be preferred over heavy trucks. For the same reason the use of trailers has not been popular in China although they would increase the hauling tonnage of trucks. Since most Chinese truck drivers have not been carefully trained and lack proper knowledge of maintenance and servicing, trucks in China are usually subjected to more wear and tear than in the United States. Moreover, a large supply of spare parts should be maintained at all times in order to operate a truck fleet efficiently. Many instances can be cited of trucks which failed to win popularity in China because of the difficulty of obtaining spare parts for them. Another point to note is that free training courses on the mechanics of a truck, reinforced by carefully prepared instruction manuals, will go a long way toward pushing the sale of any given type of truck in China.

The price, however, will remain the most important consideration. In order for the price to be reasonable enough to correspond with Chinese purchasing power, it would be highly desirable for American manufacturers to establish truck assembly plants in China and to utilize Chinese labor in manufacturing certain truck parts to be assembled there. Such a project would not only operate to lower the price considerably but would also help to teach a growing number of Chinese the mechanics of making and operating a given truck, who would as a result unconsciously push its sale because of their knowledge of its qualities. If this kind of cooperative arrangement can be worked out between American and Chinese industrialists, such a venture will eventually result in the complete manufacture of trucks in China from start to finish.

(2) *Passenger cars*

In a country where coolies still pull rickshaws, automobiles will long remain a luxury or an occupational necessity for a selected few. In prewar years most of the passenger automobiles imported were concentrated in Shanghai, Tientsin, Nanking and a few other coastal cities where a number of the populace were rich or important enough to own them. Annual imports during the last three prewar years amounted to about 2,000

units and the volume was further reduced after the war broke out. In fact probably not more than five hundred passenger cars were imported into Free China from the outbreak of war up to the time the Burma Road fell to the enemy. Since that time not a single automobile has entered China although a few spare parts have been shipped by air. Owing to the scarcity of oil and spare parts most of the few hundred passenger cars previously imported are no longer in serviceable condition.

It would be an illusion to anticipate any such wide demand for automobiles after the war among the rank and file of the Chinese people as will be found in America, for such a demand has never existed due to the lack of purchasing power. Probably one to two thousand units can still be imported and absorbed each year immediately after the war, but such a market will certainly appear negligible in the light of automobile production in the United States and other countries. Not until the purchasing power of the Chinese population is sufficiently raised through a process of industrialization will there be a substantial demand for automobiles.

Price and fuel costs are again important considerations in the selection of automobiles. As a rule most of the cars imported into China were low-priced and a number of European makes found favor because of their low fuel consumption. An American car is generally high-powered but probably a low-powered American make will be more enthusiastically accepted if its price can be considerably lowered. The old practice of permitting automobile dealers or agents in China to charge high commissions on sales, thereby increasing the price, worked directly against the interests of manufacturers and should be abolished in the postwar automobile trade.

(3) *Bicycles*

The annual importation of bicycles and parts in the last few prewar years actually exceeded that of passenger automobiles by a wide margin. In the United States bicycles are generally considered more or less as sporting goods but in China, especially in the north, they have become regular vehicles which are fairly well within the financial reach of the common people. During the last few prewar years about three hundred thousand units, either complete or in parts, were imported annually. This trade was dominated for many years by Japan, followed by Germany and Great Britain. In spite of their inferior

quality, the notoriously low price of Japanese bicycles succeeded in establishing a large market in China as well as elsewhere. This low price was only possible because of the equally low price Japan paid for United States scrap iron and steel and the relatively low cost of Japanese labor.

Chinese industrialists failed to make bicycles in any large quantities because of Japanese competition in the prewar years. Should Japanese industrial facilities be severely damaged as a result of the war, China then might have the opportunity of making bicycles herself. Their manufacture depends upon the availability of steel tubings, steel bearings and rubber tires and tubes, all of which will have to be imported for some time; it also involves a great deal of labor which can be economically supplied in China. The existence of a good market for bicycles and the comparative simplicity of fabricating them with certain parts imported from abroad should make their manufacture a profitable industry in China. In case Japanese industrial facilities are not so seriously impaired as to make impossible the mass production of bicycles at an abnormally low cost, then China probably will still import as many bicycles from Japan as previously and to the virtual exclusion of other manufacturers. The establishment of a bicycle industry therefore would face the same difficulty that existed in prewar years. The price factor plays an unusually important role because bicycles are purchased by a large marginal class of Chinese who are just able to buy them at a given price but who would have to defer their purchases if the price were higher.

(4) *Tires and tubes*

Although in prewar years the United States supplied the most trucks and passenger automobiles to China, she did not furnish a majority of the tires and tubes used in automobiles and other vehicles. Instead Japan led in such exports to China, furnishing a major portion of the tires and tubes used on rickshaws and bicycles. The postwar sale of tires and tubes for these conveyances (especially for the over 100,000 rickshaws) could easily run into substantial figures. In the last few prewar years mule carts were also equipped with pneumatic tires; in fact many provincial and local governments made such equipment compulsory for carts entering cities in order to preserve the good appearance of city roads. Mule carts have long been one of the most prevalent forms of transportation in

China, especially in the north, and their low-priced pneumatic tires also came from Japan.

In the last several prewar years industry in Shanghai for making various kinds of rubber products such as overshoes, tubes, rubber toilet articles, etc. was rapidly expanding. A few large factories had just started to make tires and tubes for bicycles and automobiles when the war broke out. Although China does not produce crude rubber, her proximity to the natural rubber supply and the existence of a growing market for tires and tubes should economically justify the establishment of rubber tire factories. While in this country most rubber tires are manufactured for automobiles, in China they have been used extensively for other vehicles. So far, British and American manufacturers have sold China very few tires and tubes other than the automotive variety. Probably China will continue to import such tires and tubes from Japan for some time during the postwar period although eventually she will herself manufacture them. Meanwhile the importation of a large number of trucks immediately after the war will necessitate the purchase of a proportionate number of automobile tires and tubes from Great Britain and the United States.

F. AIRPLANES AND SHIPS

(not for military use)

The importation of airplanes and ships in the last three prewar years is summarized as follows:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>
Airplanes	US\$303,000	U.S.A. 82% Gt. Britain 10 Germany 8
Airplane engines and parts	158,000	Germany 50 U.S.A. 49
Ships, boats and parts	263,000	Gt. Britain 61 Japan 12 Germany 10
<i>TOTAL</i>	<i>724,000</i>	

Chinese commercial aviation started in 1929 with the formation of the China National Aviation Corporation, a joint Sino-American enterprise. Another company, a Sino-German firm called the Eurasia Aviation Corporation, was established in 1931. Both were joint enterprises between the Chinese

Government and foreign interests. Progress was rapid in the prewar years and about 13,800 kilometers of air routes had been developed with thirty airplanes operating them. Regular mail and passenger airplanes were also established between some of the most important cities of China such as Shanghai, Nanking, Tientsin, Peiping, Canton, Chungking, Kunming and others. In 1936 Hongkong was made the port of call where connection was made by the Chinese National Aviation Corporation with the Pan American Airways trans-Pacific service to the United States and with the Imperial Airways services to Europe and Australia. The China National Aviation Corporation played a relatively leading role in Chinese commercial aviation. The Eurasia Aviation Corporation, operating mainly in the north-west of China, was reorganized into an entirely Chinese-owned and operated firm following the Chinese Government's severance of relations with Germany in July 1941.

By disrupting overland communications and making rapid transportation a matter of necessity instead of one of convenience, the war has given a great impetus to civil aviation in China. While most of the old air routes have been seized by the enemy, many new airlines have been set up in Free China and extensive connections made with foreign countries. After the fall of Canton and Hankow the airline between Hongkong and Chungking became an important transportation link between the outside world and Free China, until Hongkong also fell in December 1941. After the fall of Burma and the closing of the Burma Road air transport between Free China and India became almost the only practical means of moving men and supplies to or from China. As a consequence of the war the Chinese people as a whole have become more air-minded than ever before and air transportation is no longer regarded as a novelty even in places where people have yet to see a railroad. Many airfields have also been built in various places to accommodate United States and Chinese air forces, nearly all of which fields can be used as civilian airports when the war is over.

The end of the war therefore will find China in possession of at least one ready-made transportation system complete with trained personnel and equipment, which can begin to function in any locality almost as soon as the enemy withdraws. Since time will be required to repair the various railways and high-

ways wrecked by the enemy, the need for air transport will continue unabated in the immediate postwar period in spite of its expensiveness. In fact many areas will need immediate relief measures as soon as fighting ceases while many businessmen will want to rush to their previous places of business to investigate and map out future plans. Many airplanes therefore will be imported and the activities of both the China National Aviation Corporation and the Eurasian Aviation Corporation will be greatly expanded. The import value of airplanes in the immediate postwar period may easily exceed the prewar figure by perhaps four or five times.

With regard to the importation of ships and boats in the postwar period, the Chinese Government may possibly cooperate with foreign interests in the establishment of an oceanic line. In this case ocean-going vessels will most likely be purchased from the United States inasmuch as she will possess a great surplus of shipping tonnage when the war ends. The Chinese Government has already obtained several Liberty ships through Lend-Lease and may procure more by outright purchase. The most important type of shipping vessel needed will not, however, be the ocean-going ship, but the river boats and barges which ply China's coastal and inland waterways. In prewar years few of these vessels were imported. The war has damaged a number of ship-building docks in Hongkong and Shanghai and may destroy more as the fighting continues. His shipping tonnage drastically reduced by United States submarine warfare, the enemy has stripped the occupied areas of all kinds of shipping facilities for his own use. As a result China apparently will need a great many more power-propelled river boats and barges than she can possibly build herself in the immediate postwar period. The importation of ships and barges may therefore also exceed the prewar figure by several times.

G. TIMBER

The United States and Canada were the two most important suppliers of timber to China in the prewar years, especially of the soft wood of the Oregon pine variety. The importation of timber into China during the last three prewar years is summarized as follows:

<i>Kind</i>	<i>Annual Import Value</i>	<i>Important Suppliers</i>	
Hardwood (logs)	US\$1,220,000	Japan	22%
		North Borneo	17
		Philippine Islands	9
		U.S.A.	8
		Canada	7
Hardwood (sawn)	387,000	Philippine Islands	26
		Straits Settlements	24
		Japan	21
		North Borneo	15
		U.S.A.	37
Softwood (logs)	2,111,000	Canada	21
		Japan	17
Softwood (sawn)	3,217,000	U.S.A.	53
		Australia	24
		Canada	21
		U.S.A.	36
Railway sleepers	1,936,000	Australia	24
		Canada	30
		U.S.A.	33
		Canada	27
		Japan	9
<i>TOTAL</i>	<i>9,394,000</i>	Australia	5

China is endowed with large tracts of timber land in the central and southern regions, especially in Fukien, Kiangsi, Hunan and Szechuan provinces. For centuries no effective measures were taken to conserve Chinese forestlands and the only hindrance to reckless exploitation was the difficulty of inland transportation. Consequently those areas accessible to cheap transportation have been stripped of timber while in those regions where timber is still plentiful transportation is so difficult that the cost of moving the timber to market becomes prohibitive. Furthermore the quality and size of most items of Chinese timber, such as Chinese pine and Chinese fir, cannot compare favorably with the same classes of timber imported from abroad; and modern construction methods especially demand materials of sizes and quantities that Chinese timber cannot provide. Thus China must rely heavily on imported timber materials in localities far from the timber-producing areas or where large modern buildings are constructed. Chinese timber will of course still be used for various purposes and in a number of cases the comparative price determines whether imported or domestic timber should be used on a given project.

It may be interesting to note here that, while a large quantity of railroad sleepers was imported in the last few prewar years, one or two railways were able to secure sleepers made of domestic timber because they were built across certain timber-producing districts. This fact constitutes another proof of the importance of transportation to the timber trade.

The outbreak of war brought about a temporary reduction in the value of timber imports from \$6,864,000 in 1937, to \$6,475,000 in 1938. When fighting shifted inland, imports of timber materials into occupied areas showed a considerable increase, their value amounting to \$9,332,000 in 1939 and \$13,405,000 in 1940. A substantial proportion came from Japan, contributing about 45% in 1933 and more than 60% in 1940. Northern ports such as Tientsin, Chinwangtoo and Tsingtao supplanted Shanghai as principal ports of entry. These increases were largely due to the construction activities of the enemy who was just then embarking upon a program for the industrial exploitation of North China. Free China's supply of timber, however, has been derived entirely from domestic sources since the fall of Canton in 1939.

After seven years of war thousands of homes and buildings have been razed and more will be destroyed as fighting continues. The need for timber for postwar rehabilitation will be tremendous and it is apparent that the domestic supply will be far from sufficient, especially once industrialization gets under way. Possibly Japan may be required to ship timber to China as an item of reparation and Manchuria may also become a source of supply. But in view of the magnitude of postwar requirements, timber (especially the low-priced, soft wood items) will still have to be imported in substantial quantities from the United States and Canada. The postwar importation of timber will certainly exceed the prewar level by a wide margin.

H. CEMENT AND RELATED PRODUCTS

The most important item in this group is cement, followed by emery-cloth, mosaic tiles and various refractory materials like fire brick and fire clay. The average annual import value of this group of goods during the last three prewar years was \$1,276,000, distributed among important supplying countries as follows: Japan 26%; French Indo-China 16%; Great Britain

16%; the United States 10%; and Germany 9%. In the last several prewar years the number and production of cement factories in China had been steadily growing, so that in spite of the fact that the Chinese Government had undertaken a fairly extensive public works program the importation of cement began to decline. For instance the quantity of cement imported was reduced from 68,321 metric tons in 1935 to 34,954 metric tons in 1936 and then to 25,416 metric tons in 1937, with import values correspondingly decreased from \$573,000 in 1935 to \$273,000 in 1936 and to \$160,000 in 1937. The main sources of foreign supply were Japan, French Indo-China and Hongkong. Estimates showed that in 1937 factories in China could produce 1,240,000 metric tons of cement—a quantity almost sufficient to meet China's total requirements for building purposes at that time.

The war damaged a large number of these cement factories, nearly all of which were located in occupied areas. As they closed down, the importation of cement rose from 25,416 metric tons in 1937 to 62,660 metric tons in 1938 and to 67,444 metric tons in 1939. About 80% was shipped into occupied areas and more than half came from Japan. Only a few small cement factories have been set up in Free China and some cement was imported from French Indo-China from 1938 to 1940 prior to the latter's occupation by the Japanese forces.

The necessity of repairing damaged buildings and undertaking extensive construction for carrying out a program of industrialization will create such a large demand for cement that the output of Chinese cement factories which have escaped destruction will be far from sufficient. An increased importation of cement to the extent of four or five times the prewar level is therefore most likely. Cement being a cheap but heavy material, the nearest source of supply will always be the most economical; and if the cement factories in Japan, French Indo-China and Hongkong are not destroyed, China will probably continue to buy heavily from them. Japan may possibly be required also to deliver a certain quantity of cement as an item of reparation. If such factories are destroyed, however, then the cement factories now operating on the west coast of the United States will become the most important source of supply.

The importation of refractory materials during the last three prewar years amounted only to an average value of \$166,000.

In steel mills, power plants and other industrial establishments where furnaces are used, refractory materials are indispensable. In the long run China probably will produce her own refractory materials since most of them are too heavy and clumsy to be easily imported, but in the immediate postwar period a substantial quantity will probably have to be imported.

CHAPTER III

POSTWAR CHINA AS A MARKET FOR PRODUCERS' GOODS

A. PETROLEUM PRODUCTS

In view of the fact that very few petroleum deposits have been discovered until quite recently, China has been a steady importer of petroleum products. The average values of petroleum products imported during the last three prewar years are summarized as follows:

<i>Kind</i>	<i>Average Quantity 1935-1937</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>
Gasoline including naphtha and benzine	47,172,000 gals.	US\$7,337,000	Netherlands India 61% U.S.A. 34
Kerosene	108,248,000 gals.	13,211,000	Netherlands India 60 U.S.A. 33 Japan 2
Liquid fuel	324,000 metric tons	5,393,000	Netherlands India 62 U.S.A. 28
Lubricating oil	11,999,000 gals.	2,412,000	U.S.A. 81 Netherlands India 9 Japan 5
Paraffin wax	30,000 metric tons	2,440,000	Netherlands India 75 U.S.A. 15 Burma 6
TOTAL		30,793,000	

From the above figures we can see that during the last three prewar years about two-thirds of the petroleum products imported by China came from Netherlands India. Situated in close proximity to Chinese coastal ports, Netherlands India enjoyed the advantage of quick and cheap transportation denied the United States and other producers. Both British and United States oil companies owned refineries in Netherlands India, however, and their practice had long been to ship oil to China whenever economical. So long as Netherlands India could pro-

duce sufficient quantities of oil for export and so long as China remained dependent on foreign sources for oil supply, the shipment of petroleum products from the former to the latter was logical and might have grown to even larger proportions at the expense of other sources had the war not broken out.

The oil business in China has been controlled for years by three large companies: the Socony-Vacuum Oil Company, the Texas Company and the Asiatic Petroleum Company. These concerns operated oil tankers and barges, owned oil tank installations in most of the treaty ports and after years of effort built up a nation-wide system of distribution by means of which their products reached thousands of Chinese villages and towns. For many years the most important product they sold in China was kerosene, the so-called "oil for the lamps of China," but the rapid construction of highways in recent years has facilitated motor transportation while the heavy requirements of war have also increased the consumption of gasoline. The urgency of the demand required it to be shipped to Free China at any cost and only the insurmountable difficulties of transport limited the quantity imported. In order to relieve acute shortages of gasoline and other petroleum products in the interior, alcohol and charcoal gas were substituted wherever possible while synthetic gasoline and fuel were obtained from vegetable oils (chiefly tung oil) through the molecule-cracking process. Some time ago the Chinese Government succeeded in discovering and opening up a region rich in oil deposits and located in the northwestern part of Kansu province. Deposits were of good quality but output has been small for lack of drilling and refining equipment. Meanwhile the demand for gasoline in the interior has remained acute and insatiable. So long as the Burma Road is closed there apparently exists no visible means of shipping any sizeable supplies of oil for civilian use into Free China.

The importation of petroleum products into occupied areas declined temporarily after the war broke out but gradually recovered its previous position. Shanghai for instance imported 18,469,000 gallons of gasoline and 12,784,000 gallons of kerosene in 1937; 9,518,000 gallons of gasoline and 19,366,000 gallons of kerosene in 1938; 17,113,000 gallons of gasoline and 20,259,000 gallons of kerosene in 1939; and 17,781,000 gallons of gasoline and 31,690,000 gallons of kerosene in 1940. Some of

the northern ports like Tientsin and Tsingtao also showed increases in their petroleum imports. A substantial portion of such imports was undoubtedly consumed by Japanese military operations and around 10% of the total was imported from Japan itself. In view of the fact that she is not a major producer of petroleum, Japan probably will not continue to make any large oil shipments to China after the war is over.

In considering the postwar prospects of the oil business in China, the following factors should merit our attention:

(1) *China's domestic production of petroleum*

Some mining experts have given the opinion that only a small commercial oil reserve will be found in China proper. According to H. Foster Bain (*Ores and Industry in the Far East, 1933*) only the north Shensi basin, comprising a strip of land covering northern Kansu, a portion of southern Mongolia and the western part of Szechuan possess oil reserves sufficient to permit large-scale oil production. Recent findings, however, indicate the presence of rich oil fields on both sides of the Tianshan Range in northern Sinkiang and in the Chilienshan Range in the Kansu corridor. Estimates of the total oil reserves in China proper run from 1,375,000,000 barrels (according to the United States Geological Survey) to 2,227,000,000 barrels (according to the National Geological Survey of China). So far only three oil fields have been in actual production at one time or another. The northern Shensi field yields oil through wells sunk at Yenchang and Yunping but for lack of proper equipment the output has been negligible and is used almost exclusively to meet local needs. Certain oil fields in Sinkiang have also been operated by Russian interests for some time. Recently, however, it was reported that the Russians had left the province and removed their drilling equipment because of local political differences. The most promising oil fields now in operation are located in Kansu province. Prospecting work was started by the National Resources Commission of China in 1938 and drilling began in 1939. About fourteen wells have been sunk thus far and all are producing, three of them yielding great quantities at considerable pressure. Although a large number of small refineries have already been set up, their production has been seriously handicapped by a lack of adequate drilling and refining equipment. A considerable quantity of such equip-

ment was shipped from the United States, but was destroyed in Burma by the enemy before it could be trucked into China through the Burma Road.

Evidently the Kansu oil fields will be capable of large-scale production once adequate drilling and refining facilities are installed, but the fact they are situated in a region so remote from the most populous areas of China will make their production for commercial purposes contingent upon the construction of a railway or pipeline direct to the consuming centers. Failing this, Kansu oil could not possibly compete successfully with imported oil in such marketing centers as Shanghai, Tientsin and Hankow not to mention the cities of southern China. Eventually Manchuria, where large deposits of oil shale have been found and coal deposits are especially suitable for liquefaction, will be another important source of oil supply. The enemy has constructed a number of very large plants there for coal liquefaction but we may assume they will all be destroyed when Manchuria is reoccupied. Some oil shale production will still be available but much equipment will be needed to refine and process it.

Thus China will continue to depend upon foreign sources of oil supply in the immediate postwar period and until such time as oil from the interior can be transported to coastal regions by means of pipelines and/or railways or until an economical process of coal liquefaction is discovered and successfully applied. The more highly China is industrialized the more oil she will need; consequently the prospect of selling petroleum products to China will continue to be favorable for some time after the war.

(2) The relative position of different petroleum products

The war has greatly curtailed the consumption of kerosene for lighting purposes; instead the Chinese have been using pressure lamps burning vegetable oil. After the war, however, more and more people gradually will turn to electric lighting although localities where electricity is unavailable will probably continue to use pressure lamps. The days of selling "oil for the lamps of China" are slowly passing. Unless new uses for kerosene are popularized, we have reason to believe that its importation will decline. On the other hand the consumption of gasoline will continue to expand so that eventually China will

import a good deal more gasoline than kerosene, thus reversing the trend of prewar years. If we use the prewar three year average as a basis of estimate, then probably China will import annually some 60,000,000 gallons of gasoline and about the same amount of kerosene in the immediate postwar period. Because of her impoverishment by the war, China will not immediately consume a great deal more petroleum products than in prewar years.

Possibly more heavy oil too will be used than previously, for in the case of both highway and inland water transportation the use of diesel engines will be economically desirable. During the war when American trucks were being purchased to help move Chinese supplies, much discussion centered around the question of whether it was more advantageous to purchase diesel than gasoline trucks (see pages 50-51). The initial cost of diesel trucks is higher but the fuel cost is so much lower that in the long run the diesels might achieve greater economy. The fact that both fuel oil and gasoline had to be imported and also that not so many diesel as gasoline trucks were available from the United States temporarily settled the argument. It may be renewed, however, after the war when a free choice can be made between heavy oil and gasoline; if diesel trucks are favored, the first obviously will be imported at the expense of the latter. Lubricating oils will be imported in proportion to the number of machinery and tools in operation in China. Probably no substantial increase will occur until China's industrialization program has gotten fairly well under way.

(3) *The importance of installations and personnel to the oil trade*

In China as elsewhere success in the oil business depends both on a well-integrated system of distribution including storage tanks and barges and, what is perhaps even more important, on a trained personnel. The well-entrenched position of the three oil companies mentioned above was in no small measure due to their storage and transportation facilities in various treaty ports and their moderately efficient system of distribution in cooperation with Chinese merchants. For example when the Universal Trading Corporation as the purchasing agency of the Chinese Government began in 1939 to buy oil products in the United States with the proceeds of the wood oil credit,

two oil companies were able to outbid all others because they alone possessed extensive oil installations in Far Eastern ports such as Haiphong and Rangoon, where oil must be unloaded for trans-shipment to China.

The war has destroyed a number of the oil installations owned by these companies in China but their personnel and connections with Chinese merchants have to a certain extent remained intact. The abolition of extra-territorial rights and the recent conclusion of a series of treaties between China on the one hand and the United States and Great Britain on the other will enable such companies to build installations not only in treaty ports but in the interior as well. Working in cooperation with the Chinese Government, they may prove to be of great assistance in developing China's oil resources by setting up refineries in the producing districts and by laying pipelines to facilitate distribution. Because of the nature of their business, oil companies must either invest in order to continue operations or else quit the field and make way for those more willing to run the risk of new ventures of capital. Their post-war prospects in China will be closely linked with the extent of the investments they are prepared to make and with the degree of cooperation they endeavor to work out with the Chinese Government and merchants.

B. DYES, PIGMENTS AND PAINTS

In the last three prewar years the importation of dyes, pigments and paints into China was as shown in the table on page 67.

For many years Germany dominated the import trade in dyes; especially in aniline dyes and sulphur black representing half the total imports of this group were German goods predominant. Strong competition by the United States and Japan in supplying indigo dyes did not seriously reduce German supremacy in this trade. Only in printing ink, a rather insignificant item, did Germany yield leadership to the United States. The German hold on the Chinese dyestuffs market was due to a number of factors—the high reputation long enjoyed by German dyestuffs, the great variety of products they specially prepared for the Chinese market and the reasonable prices quoted for most of their products. Because a few great fortunes were made by cornering the German dyestuff stocks in China

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>
Aniline dyes	US\$4,085,000	Germany 66% U.S.A. 12 Gt. Britain 9 Japan 7
Indigo blues	3,932,000	Germany 48 U.S.A. 25 Japan 17 Switzerland 6
Printing inks	536,000	U.S.A. 50 Japan 23 Germany 20 Gt. Britain 4
Paints and varnish	491,000	U.S.A. 27 Gt. Britain 23 Japan 18
Sulphur black	1,095,000	Germany 59 Japan 24 U.S.A. 15
<i>TOTAL</i> (including other materials than listed herein)	12,264,000	Germany 48 U.S.A. 18 Japan 12 Gt. Britain 8 Switzerland 3

during the First World War, when the German supply (the only supply available to China at the time) was cut off by the Allied blockade, the approach of the Second World War brought about renewed hoarding of dyestuffs. As a result while the importation of dyestuffs and paints declined from \$10,852,000 in 1937 to \$9,147,000 in 1938 following the outbreak of war between Japan and China, it rose to more than \$12,000,000 in both 1939 and 1940. In each year from 1937 to 1940 about half the dyestuffs imported continued to come from Germany in spite of her being forced to ship them overland via the Trans-Siberian Railway after 1939 on account of the Allied blockade. Since only a small quantity of dyestuffs could be shipped to the interior because of the lack of transport facilities, at one time such excessive stocks accumulated in the coastal ports that they had to be sold at reduced prices. Along with German dyestuffs increasing quantities of Japanese dyestuffs were also imported into occupied areas. German imports ceased when war broke out between Germany and Russia in 1941 while American and British dyestuffs were unavailable after Pearl Harbor. Japan has been the only source of supply for occupied areas since the end of 1941. Japanese production, however, has

been considerably reduced because most of her factories have been converted to making explosives, thereby curtailing her exports to the occupied areas. So far as Free China is concerned, the supply of imported dyestuffs has dwindled to the vanishing point and the people have resorted to the use of native dyes.

In prewar years a number of small dye factories had been established in Tientsin and Shanghai which were engaged chiefly in the manufacture of sulphur black. For lack of sufficient capital and technical skill, no factories have yet been built for making synthetic dyes from coal tar products. This is a highly specialized industry so that it is unlikely China will be able to make synthetic dyes on any large scale in the immediate postwar period. For a considerable time to come China will continue to rely primarily on importation.

Since dyes and paints are not absolutely essential, the impoverished condition of the Chinese people during the postwar period will not be conducive to a large consumption of such imports. The principal consumer of dyes is the textile industry, which in China will emerge from the war on so reduced a scale that the importation of dyes is unlikely to approach the prewar level.

But with the general impairment of German industrial facilities by persistent bombing, German production of dyestuffs after the war probably will be so much curtailed it may be unable to rewin its dominance over the Chinese market. Japanese dyes have seldom been of superior quality and her converted dye factories will probably be destroyed during the course of the war. Thus the only important suppliers for the Chinese market will be American and British manufacturers. In prewar years the United States already ranked next to Germany in exporting dyestuffs to China. Given the elimination of the two Axis competitors, United States dye manufacturers can certainly look forward to an expanding business in postwar China.

C. CHEMICALS AND PHARMACEUTICALS

For a number of years the export of chemicals and pharmaceuticals to China was also dominated by Germany. Their average annual import value for the last three prewar years was US\$15,963,000, with the percentage distribution among countries of origin as follows: Germany 39%, Japan 19%, Great

Britain 18%, the United States 8%, France 3%, and Belgium 2%. In other words about 60% of the chemicals and pharmaceuticals imported into China came from the Axis countries. The most important items may be summarized as follows:

<i>Kind</i>	<i>Average Import Value</i>	<i>Important Suppliers</i>
Sulphate of ammonia	US\$4,316,000	Germany 47% Gt. Britain 24 Japan 8 Belgium 6 Netherlands 4
Chlorate of potash	482,000	Germany 38 Japan 24 France 14 Sweden 12
Caustic soda	709,000	Gt. Britain 60 U.S.A. 26 Japan 13
Soda ash	534,000	Gt. Britain 76 Japan 14
Bleaching powder	333,000	Japan 66 Germany 28
Industrial explosives	221,000	Germany 55 Gt. Britain 26
Proprietary medicine	1,625,000	Germany 41 Japan 17 Gt. Britain 13 U.S.A. 12 France 8

(1) *Sulphate of ammonia*

The most important single item of chemicals China imported was sulphate of ammonia, the modern fertilizer. The Chinese farmer has used human and animal manure for centuries as his principal fertilizer and only in recent years has sulphate of ammonia been introduced to the Chinese farm. Its use was largely concentrated in the coastal provinces, especially in Chekiang, Fukien and Kwangtung, yet the mere fact that it was used by the farmer, the common man of China, swelled the volume of its sale to substantial figures. Certainly far greater quantities would have been imported had its use been extended to the inland provinces. The importance of this chemical to the economy of China lies not only in its eventual use as a principal fertilizer but also in the fact that its manufacture is a basic process from which many chemicals vital to national defense can also be manufactured. Obviously the supply of a

chemical so important should not depend permanently upon foreign sources. With the cooperation of Chinese banks a large factory was set up in 1936 by the Yungli Chemical Industries capable of producing about 150 tons per day. No sooner had it begun production when war broke out and as a war industry it was one of the first objectives bombed by the Japanese. Thus China was left once again without a fertilizer industry.

The importation of fertilizers into occupied areas continued for some time after the war began, since coastal cities still were open to ocean transportation until the end of 1941. In 1937 the import value amounted to \$5,748,000, in 1938 to \$5,561,000, and in 1939 to \$6,644,000. After Pearl Harbor, however, very little fertilizer was imported. In the meanwhile both the Chinese Government and manufacturers contemplated establishing factories in the interior for making ammonia and other vitally needed chemical products. Under a series of credits granted to the Chinese Government by the Export-Import Bank of Washington since 1939, a substantial sum was allocated for the procurement of machinery and equipment for making ammonia, nitric acid, soda and other related chemicals. Coke-oven plants for making the coke from which ammonia is made were also included. But for the closing of the Burma Road, one or two sets of such machinery could have been imported and at least one ammonia plant could have been put into operation. The Burma debacle, however, prevented complete shipment of any of this equipment and no ammonia plant has so far been built in Free China. Fortunately farmers in Free China had not yet become accustomed to the use of modern fertilizers so that the lack of them did not so seriously affect agriculture as in coastal provinces.

But now it is virtually certain that a number of ammonia plants will be built after the war. In addition, impoverishment of the coastal regions like Fukien and Kwantung, brought about by famine and the loss of remittances from overseas Chinese, will not be conducive to the purchase of fertilizers. Their post-war importation is therefore likely to decrease, especially since there is reason to believe that sooner or later China will become self-sufficient in the supply of ammonia sulphate. Some supplies may also be obtained from Manchuria if the ammonia plants established there by the enemy are not destroyed in the war. The relative abundance of coal and the existence of a large

potential market will favor the growth of a domestic fertilizer industry.

(2) *Other chemicals*

In prewar years a number of firms located mostly in Tientsin and Shanghai were already engaged in the manufacture of industrial chemicals such as alkali and acid products. Most of these were destroyed or taken over by the Japanese and only a few small factories were successfully moved to the interior. The lack of domestic production necessitated increased imports of chemicals during the first three years of the war when ocean transportation was still available. In 1937 the importation of chemicals other than ammonia sulphate amounted to \$8,987,000, in 1938—\$7,495,000 and in 1939—\$10,583,000. The occupied areas had to import many chemicals which normally could have been provided by domestic factories while Free China needed large quantities of explosives for war purposes. Since Pearl Harbor neither area has imported any large quantities and many factories using chemicals have been forced to close down as a result. The end of the war will reopen some factories using chemicals and others making them and at the same time decrease the demand for war chemicals such as explosives. The postwar importation of chemicals other than ammonia sulphate will probably approximate the prewar level.

(3) *Medicines and drugs*

The war accelerated imports of medicines and drugs during the first four years when shipping could still be carried on via the ordinary routes. The import value of these products increased from \$3,161,000 in 1936 to \$3,222,000 in 1937, to \$3,813,000 in 1938 and then to \$5,783,000 in 1939. As fighting continued, the number of sick and wounded mounted and the need for medicines grew correspondingly month by month. In spite of increased shipments of medical supplies the need was far from satisfied; the war-stricken people could hardly even afford to buy the little medicine available. Lack of proper medical care accounted for the tremendous number of casualties China has suffered both in the armed forces and among the civilian population.

During the course of the war a substantial quantity of medical supplies was freely contributed to China through American

charitable organizations. When the \$25,000,000 wood oil credit was granted in 1939, about \$1,000,000 of the proceeds were spent on the purchase of American medical supplies for immediate shipment to China; subsequent credits permitted further substantial purchases of medical goods from this country. After the fall of Rangoon and the closing of the Burma Road, medical supplies were one of the few items shipped to China by air; the quantity was necessarily limited and the need has remained desperate.

As soon as the war ends, large-scale shipments of medical supplies to China will be vital and their importation in the next few years will probably average as high as during the first three years of the war. Hospitals and dispensaries will have to be resupplied while druggists and chemists again will need to build up diversified stocks. The general deterioration of health conditions in all parts of China as a result of the war may give rise to epidemics and plagues which can only be prevented or alleviated by large supplies of medicines. All kinds of sulfa drugs and many others will be in constant demand. While many preventive medicines will be manufactured in China, the lack of special equipment and expert knowledge will keep up the level of imports for a long time to come. Inasmuch as in prewar years the Axis countries controlled about 60% of the trade in chemicals and pharmaceuticals, their defeat along with the probable loss of a major part of their manufacturing facilities will present a golden business opportunity to American and British chemical and pharmaceutical industries.

The fertilizer trade, for many years an object of competition between German and British manufacturers, will probably lose most of its importance once China begins domestic production of chemical fertilizers. But still there are many other chemicals which both American and British manufacturers can supply in the absence of German and Japanese competition. In the case of pharmaceuticals the large-scale purchase of American medical supplies during the war has already created a good-will among the Chinese people which will be of great future value to the United States in the sale of drugs. Previously the Chinese regarded German drugs as the best; since the war, however, they no longer consider American drugs inferior. In the development of sulfa drugs, atabrine and most lately penicillin, American manufacturers have made remarkable contributions to

the medical field and the opening-up of the Chinese market to them will probably turn out to be one of the fruits of those contributions.

D. RUBBER AND RUBBER GOODS (excluding tires and tubes)

The importation of raw rubber and rubber goods into China during the last three prewar years was as follows:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>	
Raw rubber	US\$2,277,000	Straits Settlements	42%
		Netherlands India	30
		French Indo-China	11
		U.S.A.	6
Rubber goods	890,000	Japan	71
		U.S.A.	8
<i>TOTAL</i>	<i>3,167,000</i>		

In the last several prewar years a growing industry in Shanghai and in a few other treaty ports for the manufacture of rubber goods created an increasing demand for crude rubber, imported largely from the Straits Settlements and Netherlands India. After war broke out, a number of rubber goods factories were closed down temporarily and the importation of raw rubber was reduced accordingly from \$2,527,000 in 1937 to \$1,143,000 in 1938. As the war shifted inland, most of these factories resumed operations and the ensuing mass migration from the coastal cities to the interior created a tremendous demand for rubber shoes. Thus imports of crude rubber again rose to more than \$2,500,000 in 1939 and to about \$3,200,000 in 1940, most of which, however, went to the occupied areas. The lack of shipping facilities after 1941 must have considerably reduced crude rubber shipments to these areas even though the main rubber-producing regions have also been occupied by the enemy. Very little crude rubber has been imported by Free China in the last several years.

Unless the rubber price should rise sharply after the war (which is unlikely) Chinese importation of crude rubber and rubber goods will tend to increase. Rubber was mainly used in prewar China for overshoes and rubber soles for shoes, and these requirements will continue so long as rubber shoes are cheaper than leather. Only a handful could afford leather shoes in prewar days and the next best thing were shoes made of cot-

ton fabrics and rubber soles. Rubber tires and tubes for automobiles, bicycles, rickshaws and mule carts will also be in great demand (see pages 53, 54). A number of factories probably will be established for manufacturing such goods in China in the immediate postwar period, for it is characteristic of these factories that they can be started on a relatively small scale. Given a reasonable supply of crude rubber, therefore, a rapid growth of small rubber goods factories is most likely in postwar China.

E. COAL, FUEL AND TAR

The most important item in this group of imports is coal. The concentration of industry in Shanghai far from coal mines, the generally unexploited state of China's coal resources, and the difficulty of transporting coal from producing districts to consuming regions forced China in prewar years to import considerable quantities of coal from French Indo-China, Japan, Formosa, Manchuria and even India. The average annual import value of this group in the last three prewar years was \$2,433,000, of which French Indo-China supplied 40% (almost exclusively anthracite), Japan 15% and the United States 7% (almost entirely asphalt).

The outbreak of war cut off nearly all domestic sources of coal from Shanghai, the outstanding ones being the Kailan mines in North China and the Hweinan mines near Nanking. As a result coal imports into Shanghai and other occupied areas increased tremendously from a value of \$1,459,000 in 1937 to \$6,029,000 in 1938 and to \$7,664,000 in 1939. After Pearl Harbor coal imports into occupied areas declined considerably for lack of shipping facilities. Since it was also difficult to move coal from occupied mines to coastal cities, the consumption of coal in Shanghai and other occupied cities had to be drastically curtailed. In Free China the coal supply has been practically self-sufficient, the only item imported under this heading being asphalt of which about 3,000 tons were purchased for surfacing a section of the Burma Road.

How much coal China will import after the war depends partly upon the extent of the destruction the enemy inflicts upon various coal mines when he is forced to evacuate occupied China. Since coal-consuming industrial plants will also probably be destroyed, postwar China will be unlikely to import as much coal as during the first three years of the war, particularly if

postwar industry is not so highly concentrated in Shanghai and coal mines damaged by war can quickly resume operations. After all, coal is one of China's greatest mineral resources and any program of industrialization certainly will lead to the exploitation of new coal mines, which in turn will help to satisfy increasing industrial needs. The return of Manchuria and Formosa will give China an additional supply of coal, Probably she will continue to import anthracite from French Indo-China but imports of bituminous coal may no longer be necessary. In the long run China will certainly become self-sufficient in terms of coal production while even in the immediate postwar period decreased imports as compared with the prewar level are likely.

In regard to asphalt, more will be imported after the war to surface and repair a number of main highways and as in prewar years such material will continue to come from the United States.

F. WOOD, BAMBOO, RATTAN, STRAW AND THE MANUFACTURE THEREOF

In prewar years this group of imports consisted mainly of veneer and plywood, imported chiefly from Japan, red and rose-wood from Thailand, sandalwood from India and Australia, match splints from Japan, corkwood from Portugal, rattan from the Straits Settlements and buntal fibre for making summer hats from the Philippine Islands. The average annual import value during the last three prewar years was \$2,348,000, distributed among the supplying countries as follows: Japan 18%, Straits Settlements 18%, Philippine Islands 15%, Australia 15% and Thailand 10%. The outbreak of war caused a temporary decline in such imports but Japan soon succeeded in enlarging considerably her volume of exports to China under this heading. A substantial quantity of plywood and shooks for making cases and casks, valued at more than \$1,500,000 in 1940, was also imported from Japan.

The postwar prospects of these goods will naturally depend upon the extent of their use under changed conditions. New developments in the manufacture and uses of plywood have been remarkable for example, and possibly China will purchase plywood not only from Japan but from other countries like the United States and Great Britain. Rattan is imported for making outdoor furniture, buntal fibre for making summer hats

and match splints for making matches. These imports will probably remain about the same. Sandalwood is mainly used for incense in religious ceremonies, and redwood or rosewood for artistic woodwork and such imports will decline. In all, we may assume that this group of imports will retain approximately its prewar level.

G. RAW COTTON

China was on the threshold of self-sufficiency in raw cotton supply when war broke out. In 1937 for the first time in many years she actually exported more cotton than she imported—US\$9,200,000 worth of exports as against \$4,700,000 worth of imports. The acreage under cotton cultivation had steadily increased and both government and private efforts had been directed toward improvement of the staple and the rendering of financial assistance to the Chinese cotton farmer. The resultant increase of domestic production caused as rapid a decline in imports of raw cotton as was registered in imports of cotton goods through the expansion of domestic mills. As late as 1931 China still imported about 2,800,000 quintals of raw cotton from abroad at a value of \$279,000,000 (Chinese currency). Yet six years later in 1937 such imports amounted to only 153,000 quintals, or less than 6% of those in 1931 in spite of a steady multiplication of Chinese cotton spindles, which created a larger consumption of raw cotton. The remarkable progress achieved in domestic output proved that fundamentally China is a *supplier* of raw cotton as well as a *consumer*. Only because of the lack of appropriate measures to improve cotton cultivation and disturbed conditions in the interior during the period of civil warfare was it necessary for Chinese mills to rely mainly on imported cotton. Once these unfavorable factors no longer governed, the natural result was relative self-sufficiency in China's raw cotton supply.

During the three years before the war imports of raw cotton in terms of countries of origin were as follows:

	1935 quintals	1936 quintals	1937 quintals	Average Import Value
British India	212,962	205,599	59,511	US\$ 3,427,000
Egypt	55,185	60,798	39,314	1,872,000
U.S.A.	275,902	94,161	24,716	4,085,000
Other countries	4,613	46,346	29,645	850,000
TOTAL	548,662	406,904	153,186	10,234,000

When we consider that domestic cotton output for 1937 was estimated at 6,683,471 quintals—or about 40 times the quantity of cotton imported during the same year—we can see that cotton no longer comprised a very important Chinese import.

During the first four years of war, mills in Shanghai had to rely heavily on foreign cotton to maintain their production; cotton in the producing districts was either collected forcibly by the enemy at fixed prices for Japanese mills or destroyed in the fighting which had spread far into the interior. In 1937 for instance Shanghai imported only 141,151 quintals of foreign cotton, but after 1937 her imports increased from 146,855 quintals in 1938 to 2,318,207 quintals in 1939 and to 2,303,243 quintals in 1940—in other words about sixteen times. Cotton imports for the whole of China advanced from 165,918 quintals in 1938 to 2,477,328 quintals in 1939 and to 2,444,141 quintals in 1940 (more than ninety per cent went to Shanghai). The value of cotton imports for the whole of China amounted to about US\$65,000,000 in 1940. Because of the guerrilla warfare waged in occupied areas, the lack of transportation facilities for bringing cotton to the market, the forcible collection of cotton by the enemy with payment in unpopular puppet government money or no payment at all—because of all these and other factors, Chinese farmers in the occupied areas began to grow less cotton and more products which could be directly consumed. In this way they achieved an economy of self-sufficiency at the expense of cotton production. After Pearl Harbor all cotton imports ceased so that mills in both Japan and occupied China had to depend upon Chinese cotton as their principal source of supply. The enemy has reportedly made great efforts therefore toward raising cotton production in the occupied areas. Farmers were compelled to grow cotton instead of other crops and failure to meet a given quota might often be followed by severe punishment. How far the enemy has succeeded in increasing cotton production in occupied China has not been estimated but the persistent dearth of cotton and cotton goods in Japan as well as in occupied areas which has been reported clearly indicates that production in the occupied territory is far from adequate.

When the Burma Road was still open, Indian cotton was imported into Free China, to feed the mills in Kunming. But

the closing of the road cut off all such imports so that mills since then have operated entirely with native cotton grown in Shensi, Hupeh and Honan provinces. Difficulties in transportation prevented its full utilization and a substantial portion has been consumed by industrial cooperatives in hand-spinning and weaving.

What is the possibility that China will need great quantities of foreign cotton at the end of the war? Certainly the following factors will come into play. Firstly, cotton production apparently has declined in all parts of China during the war. It would not be surprising therefore should postwar production fall below prewar output. Secondly, transportation will probably continue disrupted for some time after the war so that relatively little cotton from the interior can be shipped to mills in coastal cities, provided such mills are left intact. Thirdly, the present world war so far has not seriously affected world cotton production as a whole. The most important cotton-producing countries—namely the United States, India, Brazil and Egypt—lie outside the actual fighting zones although the war has already destroyed many spindles in Great Britain, France, Italy, Germany and Russia. Thus after the war the 1939 figure of 146,000,000 spindles may be greatly reduced. (Of this total the United States possessed 25,000,000 spindles, Great Britain 36,000,000, Japan 11,500,000, Germany 12,900,000, Russia 10,300,000, India 10,000,000, France 9,800,000 and Italy 5,300,000). The consequence may be a surplus of cotton which will so force down the price that it will be readily exportable to any country that needs it. Whatever domestic cotton China lacks to fill her needs therefore may be cheaply supplied by imports. All these factors point to the probability that China will import a substantial quantity of cotton postwar.

On the other hand this prospect depends partly on whether cotton mills in the occupied areas survive the war. At present about 4,000,000 spindles are located in these areas—mostly in Shanghai, Tientsin and Tsingtao. If, let us say, about 2,000,000 spindles are destroyed either by the enemy during his withdrawal or in the course of battle, the consumption of cotton would be reduced proportionately. In this case less raw cotton but more cotton piece goods would be imported and China's home production, though reduced, might then be able to satisfy her needs. The chances are that in view of the

likelihood of a great surplus of cotton in the world market, mills in China will find it desirable to use foreign cotton at certain price levels. The swift recovery of China's textile industry may increase the consumption of raw cotton so rapidly that domestic production will be unable to catch up with requirements. Therefore the annual imports of about \$10,000,000 worth of raw cotton during the last three prewar years will probably resume for some time after the war.

H. WOOL

During the last few prewar years the Chinese woolen industry was growing steadily, indicating an increasing consumption of woolen goods among the population generally. Although China produces large quantities of wool in the northern and central provinces, this wool is usually a coarse fibre suitable only for rugs and carpets rather than wearing apparel. The lack of scouring and carding equipment also added to the difficulty of using Chinese wool in the mills. Thus a large quantity of wool, especially wool tops, had to be imported for raw material. As these mills enlarged their facilities the quantity of wool imports increased proportionately. For instance in 1935 imports amounted to 2,934,939 kilograms; in 1936 they grew to 6,203,119 kilograms; and in 1937 they further increased to 7,307,585 kilograms. The average annual value of wool and wool tops imported during the last three prewar years was \$4,395,000, distributed among the important supplying countries as follows: Great Britain 77%, Japan 10%, Australia 7% and New Zealand 7%. For many years the importation of wool was almost monopolized by British merchants in China.

Wool imports were drastically reduced by the outbreak of war since most of the mills were situated in the fighting areas during its first year. Wool imports dropped accordingly to only 499,499 kilograms in 1938—about 7% of the 1937 figure. The shifting of the battlefront in 1939 made possible the reopening of some mills and brought about a rise of imports to 2,859,868 kilograms in the same year and to 3,041,371 kilograms in 1940 (each at a value of about \$2,746,000 and \$4,801,000 respectively). Among the supplying countries Australia gradually began to ship more and more wool to China and by 1940 had surpassed Great Britain as the principal supplier of wool tops.

The United States did not become a supplier until 1940 when she shipped about 725,000 kilograms to China. The Pearl Harbor attack cut off all sources of wool supply to the occupied areas except Japan. Since Japan produces very little wool herself and formerly re-shipped processed wool imported from other countries, apparently the volume of her wool exports to the occupied areas has been negligible since then. So far as Free China is concerned, no wool has been imported since 1938 so that the few mills operating in the interior must depend entirely upon the domestic supply.

When the war is over, China will certainly possess fewer woolen spindles than in the last few prewar years. Though a number of new mills will have to be built, we doubt whether postwar consumption of woolen goods will equal the prewar level. Woolen goods are more of a luxury than a necessity in China and can be easily dispensed with in case of more urgent needs. Nor will the immediate postwar prospect of a low general purchasing power favor the consumption of such goods. Consequently the importation of wool will probably decline. The principal source of supply will probably be Australia instead of Great Britain, for the first is geographically closer to China and is adequately provided with scouring and carding facilities.

CHAPTER IV

POSTWAR CHINA AS A MARKET FOR CONSUMERS' GOODS

A. FOOD, BEVERAGES AND TOBACCO

Under this heading we include the following items: cereals and flour; sugar; tobacco; fishery and sea products; fruits, seeds and vegetables; animal products, canned goods and groceries; medicinal substances and spices; and wines, beer and spirits. Nearly all of these are consumed directly and constitute a most essential group of consumers' goods. While some are necessities of life, others add only to the comforts of living and may be dispensed with under certain circumstances. As articles of trade they will have different prospects in the postwar period, each of which will be discussed in separate sections.

(1) *Cereals and flour*

Sorely burdened by primitive agricultural methods and an inadequate transportation system, for many years China has imported large quantities of cereals and flour. In no other land has a people's existence been so dependent on the grace of God. Serious floods or droughts have always necessitated heavy imports of food supplies from abroad. The value of such imports reached as high as \$329,000,000 (Chinese currency) in 1932 and \$275,000,000 in 1933, when serious floods inundated sections of central China. The relatively high cost of shipping food supplies from the interior to the coastal cities on account of inadequate transportation facilities made imports of rice and flour commercially desirable even during normal times. The average Chinese in Shanghai usually ate native rice from September to April, when the rice crops were harvested and marketed, and foreign rice from May to August, when native rice shipments from nearby regions dwindled almost to the vanishing point.

During the several years before the war the food situation in China had improved appreciably. Year by year a considerable reduction occurred in the value of imports of cereals and

flour, the figure for 1933 being \$275,000,000, for 1934—\$112,000,000, for 1935—\$136,000,000, for 1936—\$49,000,000, and for 1937—when the war broke out—\$59,000,000 (all in Chinese currency). The years 1936 and 1937 saw no serious floods or general drought and bumper crops were harvested. These favorable conditions, combined with improvement in transportation and the scientific work carried on by government agricultural stations, helped to curtail food imports. In terms of American dollars the average import value of this group from 1935 to 1937 was \$27,826,000; the most important items were as follows:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>	
Rice and paddy	US\$18,037,000	French Indo-China	52%
		Siam	31
		Burma	15
Wheat	6,192,000	Australia	83
		Argentina	13
Wheat flour	1,793,000	Australia	38
		Canada	30
		U.S.A.	25

Most of the cereal imports were consumed in coastal cities, especially in South China. Only when serious floods or drought caused a general famine did they reach the interior. The fact that the provinces of the interior, which now comprise the most important part of Free China, have always been self-sufficient in terms of food supply has contributed in no small measure to the successful continuation of resistance against the enemy in spite of his blockade. The latest agricultural statistics show that the normal prewar self-sufficiency in foodstuffs of the provinces constituting Free China has on the whole been maintained. Even in 1942 despite the partial crop failure in Hunan and the continued rise in the price of cereals, the total crop was still up to normal. Present indications are that throughout the war Free China will remain self-sufficient in the one basic food—rice. There is, of course, no denying the fact that owing to shortages of other foods and a fantastic rise in prices most of the population is undernourished and suffers from deficiency diseases. Moreover, this condition of relative self-sufficiency has not held true for regions neighboring the occupied areas, such as localities in Honan and Kwangtung provinces where famines of serious proportions have occurred.

The people in the occupied areas have fared far worse even than Free China. By cutting off communications between the interior and the coastal areas, the war has closed the main channels whereby the food supplies of the former could be shipped to the coastal cities. Consequently the latter have had to rely heavily on imported rice and wheat flour. In spite of the fact that great numbers had migrated to the interior and tremendous casualties were inflicted upon those still remaining, thereby decreasing considerably the number to be fed in such areas, imports of cereals and flour into occupied China increased steadily as the war spread. Rice imports, mainly from French Indo-China, Thailand and Burma, increased from 3,457,251 quintals in 1937 to 4,061,231 quintals in 1938, dropped to 3,202,167 quintals in 1939 and rose again to 6,495,269 quintals in 1940. Very little wheat was imported in 1938 since most of the flour mills were located in the fighting areas and forced to suspend operations. But in 1939 about 4,670,837 quintals were imported, of which about 64% came from Australia and 35% from the United States. The relative cheapness of wheat flour as compared with rice during that year accounted for the reduction of rice in favor of wheat imports. When in 1940 the price of wheat rose more rapidly than that of rice, wheat imports were reduced to 1,488,510 quintals while rice imports jumped to more than 6,000,000 quintals. The importation of wheat flour amounted to 2,547,783 quintals in 1938, 3,572,813 in 1939 and 3,203,493 in 1940. Australia, Japan and the United States were the major supplying countries. All together the total import value of this group increased from US\$17,281,000 in 1937 to \$38,146,000 in 1938, to \$60,471,000 in 1939 and then to \$95,446,000 in 1940.

The rapid increase of such imports indicated the growing shortage of food supplies in the occupied areas—a shortage brought about not only by the falling-off of agricultural production in fighting areas but also by the wanton looting of foodstuffs by enemy troops. The presence of more than a million enemy soldiers in the occupied territory resulted in an unbearable drain on its food resources and undoubtedly a substantial proportion of cereal imports was consumed directly by the enemy himself. We may note that the shipment of rice since 1937 has been exactly contrary to its normal direction. In normal times most rice imports were taken by coastal cities in South

China where it was the staple food, with very little going to North China where wheat flour was more important. In the three years following the outbreak of war, however, North China also became a heavy importer of rice because of the demands of enemy troops. In the meanwhile rice imports into South China rapidly declined following the fall of Canton and Kowloon; yet for these coastal regions with their dense population and limited farming areas rice imports were an absolute necessity. The cutting-off of the rice supply from abroad precipitated a great famine in these regions which has become more severe and widespread as the war has continued. Since 1942 the enemy's shipping facilities have been so seriously impaired by Allied submarine warfare that rice shipments from French Indo-China and Thailand to occupied areas probably have had to be curtailed greatly. The main sources of wheat supply are also gone. The neglect of proper flood control during the war, the guerrilla nature of the warfare and the scarcity of farm implements and fertilizers have all affected agricultural production adversely. Rice riots and mass starvation have become common phenomena; yet so long as the war lasts no way exists of preventing the situation from deteriorating further.

As soon as the war ends, the shipment of cereals and flour to such areas will become an immediate concern of the Allied forces. This task will presumably be a function of the newly established United Nations Relief and Rehabilitation Administration, which has already drafted a program to set up the necessary machinery for administering relief in liberated areas. In the case of occupied China, immediate and large shipments of wheat and flour from Australia, Canada and the United States will certainly save the lives of millions now on the verge of starvation. It may not be possible, however, to obtain any substantial supplies of rice from French Indo-China, Thailand or Burma immediately after the war, for these countries may be seriously affected themselves by Allied counter-offensives.

Upon the withdrawal of enemy troops from China the heavy imports of cereals and flour characteristic of the first four years of war probably will not resume, although emergency relief supplies may run into considerable quantities. The war has considerably reduced China's total population, particularly that of the coastal regions which must live on imported cereals.

A smaller population in the coastal cities will consume proportionately less food and therefore require fewer cereal imports, always providing other factors are equal. But since domestic transportation will scarcely return to normal immediately after the war, the cost of importing cereals may be more economical than that of shipping cereals from the interior to coastal cities. In this case obviously a larger proportion of the cereals consumed in coastal cities will come from abroad, even though the total volume of consumption may be smaller than in prewar years. Presumably the annual importation of about \$27,000,000 worth of cereals and flour of the last three prewar years will be resumed and continue for some time after the war, or at least until transportation conditions in the interior have sufficiently improved. Of course weather will always play a decisive role and a year of extremely bad crops may easily increase cereal imports several times over the import figure of a more or less normal year.

(2) *Sugar*

The amount of sugar imported by China during the last three prewar years can hardly be judged by the figures reported by the Chinese Customs, because in the last two prewar years Japanese sugar was freely smuggled into North China in open defiance of customs' authorities. Thus according to Chinese Customs Statistics sugar imports sharply declined during this period while in fact the consumption of imported sugar was probably only slightly reduced. The figures given by the Chinese Customs for the last three prewar years were as follows:

<i>Kind</i>	<i>1935 metric tons</i>	<i>1936 metric tons</i>	<i>1937 metric tons</i>
Molasses	32,250	24,909	27,468
Sugar	260,129	158,570	157,054
Sugar candy	445	224	293
TOTAL US\$	\$10,138,100	\$6,074,258	\$6,493,122

The average import value for each of these three years was \$7,568,000, distributed among the supplying countries as follows: Japan 35%, Netherlands India 33%, Hongkong 17%, Formosa 7%, Philippine Islands 2% and the United States 2%. The percentage supplied by Japan would have been much larger had smuggled sugar been included; since the sugar imported from Formosa was also controlled by Japan, we can

readily see that the prewar sugar trade was dominated by Japanese interests. Imports from the Philippine Islands chiefly consisted of molasses while those from the United States were saccharine. Since the customs figures were distorted by smuggling, truer to fact would be the 1935 figure as a basis for the average annual import value of the last three prewar years. That is, probably about \$10,000,000 worth of sugar was imported each year during this period.

We should note that China is herself a sugar-producing country; at one time Chinese sugar was exported even to Great Britain. The producing districts are located in South China and in Szechuan province, where Chungking, the capital of Free China, is situated. Operating on a small scale and with crude facilities and out-of-date methods, Chinese producers not only lost the export market altogether but eventually found foreign competition increasingly difficult to meet even in the home market. Prewar international competition in the sugar trade was severe and China served as a kind of dumping ground for Japanese and other foreign sugar. Native sugar, however, was still able to retain its market in the producing districts and thanks to its lower price preserved a portion of its market even in regions where imported sugar had penetrated. The establishment of a number of modern sugar mills in South China during the last few prewar years also helped to boost domestic production. Indications were, therefore, that imports of sugar, smuggled or unsmuggled, would have been much reduced had war not broken out.

After the war began, sugar imports temporarily declined from 157,054 metric tons in 1937 to 103,236 metric tons in 1938, inasmuch as fighting was then concentrated in North and Central China where most of the sugar imports were consumed. In 1939 after Japanese forces had gained complete control of coastal regions in North and Central China and had pushed the fighting into South China where native sugar was produced, imports increased to 225,519 metric tons. Obviously native sugar was no longer available for shipment to other parts of China. Poor crops in Formosa during 1939-1940 and restrictions on the export of sugar from Japan led to a decline of sugar imports to 164,760 metric tons in 1940. The increasing shortage of shipping facilities after 1942 must have further curtailed importation while at the same time the pro-

duction of native sugar in occupied areas must have been reduced because of the lack of fertilizer and the destruction of sugar cane by guerrilla fighting. In the meanwhile Free China has relied entirely on native production; thus far consumption requirements have barely been met. Indeed, after seven years of continuous fighting, the population in both free and occupied areas must have become accustomed to getting along with an absolute minimum consumption of sugar.

After the war several factors will operate to reduce Chinese imports of sugar. The return of Formosa will bring China a most important source of supply that will go a long way toward helping to satisfy domestic consumption needs. Because of the impoverishment of the people and the loss of population in coastal regions where imported sugar is mainly consumed, an increase in postwar consumption is unlikely. Possibly also some of the sugar-refining facilities in Hongkong, Netherlands India, Japan and the Philippines will be destroyed before the end of the war, so that China may have to import Hawaiian or Cuban sugar at a considerably increased price—a situation which will also decrease sugar consumption in China. Taking all these factors into consideration, we may assume that in the postwar period probably only half as much sugar will be imported as in the last three prewar years—around \$5,000,000 worth.

(3) Tobacco

The average import value of tobacco for each of the last three prewar years was \$5,186,000, of which 83% consisted of tobacco leaf and the rest of cigarettes and cigars. The percentage distribution among supplying countries was as follows:

<i>Kind</i>	<i>Annual Import Value</i>	<i>Important Suppliers</i>	
Tobacco leaf	US\$4,367,000	U.S.A.	93%
		Japan	4
		Philippine Islands	1
Cigarettes, cigars and prepared tobacco	819,000	U.S.A.	48
		Great Britain	28
		Philippine Islands	13

The importation of tobacco leaf was closely related to the development of the cigarette industry in China. In addition to a number of native varieties of tobacco unsuitable for cigarettes;

for many years China has grown certain adapted American varieties in the north. Its quality, however, is not good enough for high-grade cigarettes nor is its production large enough to take care of all the requirements of Chinese factories. Consequently the factories blended both Chinese and American tobacco with the proportion of the latter increasing as the grade became higher. In prewar years the habit of cigarette-smoking had spread rapidly among the Chinese population and the manufacture of cigarettes became an important industry. As a result increasing quantities of tobacco leaf were imported, mostly from the United States. In 1935 the quantity imported was 8,058,653 kilograms, in 1936, 11,380,973 kilograms and in 1937 16,882,229 kilograms. The outbreak of war destroyed a number of such factories and also cut off the domestic source of tobacco leaf from the large cigarette factories at Shanghai, some of which, however, remained in operation under Japanese management. Accordingly an even larger importation of tobacco leaf was required not only from the United States but also from other countries such as India, Japan, and Korea, where cheap, low-grade leaf was available. While 18,933,255 kilograms of tobacco leaf were imported in 1938, of which about 18,000,000 kilograms came from the United States, 34,748,762 kilograms were imported in 1939, of which about 19,500,000 kilograms came from the United States, 11,800,000 kilograms from India and 2,600,000 kilograms from Japan and Korea. The quantity was further raised to 39,221,330 kilograms in 1940, of which about 26,890,000 kilograms came from the United States, 7,650,000 kilograms from India and 3,500,000 kilograms from Japan and Korea. The import value of tobacco leaf in 1940 was around \$10,000,000—almost double the average annual import value of the last three prewar years. Almost all such imports went to the occupied areas, chiefly Shanghai.

After war broke out between Japan and the United States, all leaf shipments to occupied China ceased except for insignificant quantities from Japan and Korea. Since the domestic source of leaf supply was more readily available to Free China than to occupied areas, the production of cigarettes in the latter regions has subsequently been reduced drastically. In Free China the producing capacity of the few cigarette factories removed to the interior has been too small to meet potential

consumption. The price of cigarettes has likewise become prohibitively high during the course of inflation. Those who smoked in prewar years had either to resort to native pipes or to give up smoking altogether; no doubt, therefore, the cigarette-smoking population of China has greatly shrunk.

For some time the war encouraged imports of cigarettes into China (especially Free China) since production in the interior has been far from adequate. Most of the cigarettes were shipped from Hongkong via southern ports such as Kowloon, Wuchow, Mengtze, Luichow and others. Imports increased from 110,000,000 in 1937 to 341,000,000 in 1938, to 744,000,000 in 1939 and to 828,000,000 in 1940; more than 70% went to Free China. The extension of hostilities in the Pacific following Pearl Harbor brought all such shipments to an abrupt halt. Since then, only a negligible quantity of American cigarettes has been flown in for United States air force personnel so that in the absence of sufficient domestic production most of the population has had to carry on without cigarettes.

Obviously time will be required to recultivate the smoking habit. The possibility of further destruction of cigarette factories during the withdrawal of the enemy coupled with a decline in the consumption of cigarettes will not induce any large postwar imports of tobacco leaf. Probably, therefore, imports of tobacco products not only will fall far short of the 1938-1940 figures but even somewhat below the prewar level.

(4) *Fishery and sea products*

Of the average annual import value of \$5,285,000 for this group of products during the last three prewar years, about 58% came from Japan, 11% from Hongkong, 6% from the Straits Settlements, 4% each from Canada and French Indo-China and 3% from the United States. The most important item was salted fish whose import value comprised about 20% of the total value. Also included in this group was a number of sea food specialties such as seaweed, awabi, bêche de mer, compoy, cuttlefish, mussels, shark's fins, fish maws, etc., most of which have little nutritional value as compared with their high price. A downward trend from 1935 to 1938 was noticeable in the importation of such products but this was reversed in 1939 and 1940 apparently because of the large number of

Japanese in China. So far as Free China is concerned, practically none of these products has been imported.

Since destruction of Japan's shipping facilities must be considered a pre-requisite to her defeat, presumably very little will remain of the Japanese fishing fleet when the war is over, nor will Hongkong or other fishing ports be left with any considerable number of fishing boats. The supply of fishery and sea products thereby will be reduced automatically, nor is there any reason why the Chinese Government should not impose certain restrictions on the importation of such delicacies as those listed above whose consumption is unnecessary. The postwar importation of this group therefore will be considerably curtailed.

(5) Fruits, seeds and vegetables

The most important items in this group of imports were oranges, currants, raisins, mushrooms and copra, the last-named being used as raw material for cocoanut oil. Of the average import value of \$1,976,000 during each of the last three prewar years, 28% came from the United States, leading in oranges, raisins, apples and lemons; 20% from the Straits Settlements, leading in copra; and 20% from Japan, leading in mushrooms. The war provoked great changes in the volume and nature of these imports. While only a few thousand quintals of beans were imported in 1937, about 796,575 quintals were imported in 1938, mainly from Manchuria and at a value of more than \$2,400,000. The volume of bean imports in 1939 and 1940 was 1,158,750 quintals and 463,074 quintals respectively. Importation from Japan of mushrooms and all kinds of vegetables also increased, presumably because of the large numbers of Japanese soldiers and civilians in China. Thus the total value of such imports rose to about \$8,800,000 in 1940—more than four times the annual import value of this group for the last three prewar years.

Upon the return of Manchuria to China and the withdrawal of the Japanese from all Chinese territory, the peacetime volume of such imports will shrink considerably. As an agricultural country China herself produces a great variety of fruits and vegetables, whereas most of the items imported were considered more as delicacies than necessities and beyond the reach of the common man. The importation of copra was on account of its cheapness as compared with other oil materials used in

the making of soap. The intensive fighting now going on in the South Pacific will probably destroy a considerable number of coconut plantations and materially reduce the output of copra, thereby raising its price. A high price for copra will certainly discourage its shipment to China. Taking all factors into consideration, we may conclude that postwar imports will fall below the prewar level.

(6) *Animal products, canned goods and groceries*

The most important items in this group were condensed milk, butter, evaporated milk, milk food, confectionery, biscuits, coffee, cheese, various kinds of canned foods and birds' nests (a Chinese food delicacy). The average annual import value for the last three prewar years was about \$3,150,000, distributed among important supplying countries as follows: the United States 20%, the Netherlands 17%, Australia 14%, Japan 8%, Great Britain 7% and Netherlands India 6%. The United States led in the export of canned foods and milk, the Netherlands in condensed and evaporated milk and Australia in butter and some milk foods.

The war had pronounced effects on the volume and character of these imports also. Greatly increased were imports into occupied areas of canned sea products, macaroni, table and pie fruits and other foodstuffs—nearly all from Japan and presumably for the consumption of Japanese soldiers and civilians in China. Considerable quantities of tea amounting to about 5,000,000 kilograms in 1939 and 7,200,000 kilograms in 1940 were also imported into Tientsin, Tsingtao and Shanghai from Japan and Formosa, apparently because Chinese tea from the interior could no longer be shipped to occupied areas. Thus the total value of this group increased from \$2,475,136 in 1937 to \$2,939,255 in 1938, to \$4,587,952 in 1939 and to \$8,463,996 in 1940. Meanwhile the importation of milk, condensed and evaporated, and other dairy products remained the same or decreased.

Japan will hardly continue to export these goods to China in such volume after her armies have been driven out. With the return of Formosa and the resumption of transportation between tea-producing districts and coastal regions, China will produce more tea than she can consume herself. Tea imports will therefore be unnecessary. So far as dairy products are con-

cerned, China has been neither a producer nor a consumer, for the consumption of milk and its related products has been the privilege of a small class of relatively well-to-do and educated people. The war has made that class even smaller and any increase in postwar imports of dairy products is unlikely unless they are included as emergency relief to children in liberated areas. Evidently the Netherlands will be unable to export milk products to China for some time after the war and whatever can be imported probably will come mostly from the United States and Australia.

The remarkable development of dehydration processes during the war may, however, bring about imports of certain classes of food products which otherwise could not be shipped. Probably a great influx of tourists and business people will pour into China after the end of the war; in order to provide for their comfort and cater to their tastes a substantial quantity of canned foods will have to be imported. Thus while some items will decline drastically, others may enjoy appreciable increases. In all, the postwar import value of this group probably will approximate the prewar level.

(7) Medicinal substances and spices

The average annual import value of this group during the last three prewar years was \$2,609,000, distributed among supplying countries as follows: Hongkong 24%, the Straits Settlements 16%, Korea 12%, French Indo-China 8%, Japan 6% and the United States 3%. The relatively important items were ginseng and wild ginseng (which Chinese medicine regards as a tonic of great potency), pepper, cardamons, putchuk, betelnuts, malt and various kinds of herbs. By inflicting casualties and spreading disease on the one hand and by interrupting the shipment of modern medical supplies on the other, the war has stimulated the practice of Chinese medicine and accordingly imports of various herbs have greatly increased. As a trading center for Chinese medicinal substances Hongkong engaged in both export and import trade, receiving such cargoes from other countries, processing them and then re-shipping them to various parts of China. Some of these were actually produced in the interior of China, shipped to Hongkong via southern ports and after repacking or processing re-shipped to occupied areas as a kind of import. Thus while the import value of these goods

declined slightly from \$2,130,511 in 1937 to \$1,984,855 in 1938, it soon rose to \$3,816,462 in 1939 and to \$5,571,878 in 1940. Such imports, of course, ceased after 1941.

While there is no denying the fact that some herbs in Chinese medicine are endowed with great medical value, Chinese medicine as a whole, it must be admitted, is not built on such a scientific basis as to justify its popular application to the exclusion of modern medicine. In fact it was only due to the scarcity of the latter in a war-torn land that the population again resorted to ancient Chinese medicine, which was psychologically speaking at least better than none at all. With the arrival of modern medical supplies and preparations after the war, imports of this group can be expected to drop considerably short of the prewar level.

(8) *Wines, beer and spirits*

Generally speaking, the Chinese are not a great drinking nation and their consumption of wines and liquors has been so far met by domestic production. A comparatively small volume was imported in prewar years and the average annual value from 1935 to 1937 amounted to only \$636,703 with Great Britain supplying 36% and France 27%. After war broke out, a large quantity of Japanese beer and sake poured into occupied areas, mostly for the consumption of Japanese in China. The import value accordingly rose to \$821,901 in 1938, to \$1,661,046 in 1939 and to \$1,990,422 in 1940. As soon as Japanese forces withdraw from China, such imports will automatically decrease. Moreover, since World War II has caused a shortage of liquors in the United States and Europe, no large supply will be available for export to the Far East. Postwar imports of wines and liquors will continue to be insignificant.

B. OTHER CONSUMERS' GOODS

Under this heading are included the following items: cotton piece goods and cotton yarn; woolen yarn and woolen piece goods; flax, ramie, hemp, jute and their products; rayon and rayon piece goods; paper, books and wood pulp; fats and oils other than petroleum products; hides, leather and other animal substances; glass and enamelware; photographic goods; and sundries. A substantial proportion of such goods is for clothing

purposes and some of the items listed (such as cotton yarn and wood pulp) can in fact be considered producers' goods. We have treated them as consumers' goods either because they are immediately convertible into such goods or because they are not so important as their finished products. For instance cotton yarn may be bought by the farmer and woven into cloth by him for his own consumption. Similarly, as an import woodpulp is far less important for China than its finished product, paper. As stated before, it is only for the sake of simplification that such a classification has been adopted.

(1) *Cotton piece goods and cotton yarns*

For many years before 1931 cotton piece goods and cotton yarns headed the list of imports into China. Since 1930, however, there has been a rapid decline of such imports, as evidenced by the following figures: 1930—\$233,400,000 (Chinese currency), 1931—\$188,600,000, 1932—\$139,800,000, 1933—\$71,300,000, 1934—\$35,800,000, 1935—\$27,700,000, 1936—\$18,200,000 and 1937—\$21,500,000. This decline was brought about chiefly through the steady development of China's textile industry which in the last five prewar years was well on its way towards supplying most of China's clothing needs. The average import values from 1935 to 1937 of the principal items in this group may be summarized as follows:

<i>Kind</i>	<i>Average Value</i>	<i>Important Suppliers</i>	
Cotton piece goods, grey	US\$1,310,000	Japan	97%
		Gt. Britain	2
Cotton piece goods, white or dyed	2,799,000	Japan	52
		Gt. Britain	36
Cotton piece goods, printed	557,000	Japan	89
		Gt. Britain	10
Cotton piece goods, miscellaneous	526,000	Japan	58
		Gt. Britain	15
Cotton yarns and thread	1,331,000	Gt. Britain	63
		Japan	14
Cotton goods, sundry	818,000	Japan	48
		Gt. Britain	16
TOTAL	7,341,000		

As shown above, the export of cotton piece goods to China was controlled mainly by two countries—Japan and Great Britain. At the very beginning Great Britain took the major share of the trade but gradually yielded ground to Japanese competition, until eventually about 70% of these goods came

from Japan. A few years before the war Japanese cotton goods began to lose ground also—this time to domestically produced cotton goods, a substantial proportion of which, however, were made in Japanese-owned mills in China.

Theoretically, the war should have encouraged imports of Japanese cotton goods into occupied areas. Such in fact was the case in the first year of the war but in the next two years these imports declined as shown in the following table:

	1937	1938	1939	1940
Total value of cotton goods imported	\$6,302,000	\$8,938,000	\$8,147,000	\$26,313,000
Japan's share	3,991,000	5,745,000	3,935,000	2,590,000
Great Britain's share	1,586,000	1,775,000	1,134,000	476,000
Hongkong's share	49,000	109,000	1,344,000	18,919,000

Imported cotton goods from both Japan and Great Britain increased in 1939, apparently because at that time a number of mills in the occupied areas had temporarily suspended operations. As soon as these resumed operations, imports from both Japan and Great Britain began to fall off, indicating that the clothing needs of the occupied areas were being partially taken care of again by domestic production. The abnormal increase in 1940 was due essentially to the trans-shipment of cotton goods produced in Shanghai via Hongkong to the interior of China. Although such an increase should not be considered real, it did reflect the serious shortage of cotton goods in the interior, where only about 300,000 cotton spindles were operating as compared with the more than 4,000,000 spindles in occupied areas.

Severing of the direct transportation routes whereby cotton goods produced in coastal cities could be shipped to the interior necessitated not only trans-shipments from Hongkong but also imports of cotton yarn and goods from India and elsewhere at that time when the Burma Road was still open. In fact about \$2,000,000 worth of Indian cotton yarn was imported into China via the Burma Road and other routes in 1940 alone. In order to meet the urgent clothing needs of its army, the Chinese Government utilized part of its wood oil credit to purchase about \$1,800,000 worth of cotton cloth and blankets from America in 1940. This was probably the largest order placed by China for United States cotton goods in the last twenty years but because of the transportation difficulties encountered along the overland routes from the ports of disembarkation to the in-

terior, not all of these materials reached their final destination.

After Pearl Harbor and the fall of Burma, the imports of cotton goods into Free China ceased entirely. Since the few mills operating there could hardly produce enough to make up for the quantity previously imported, the population turned to native spinning, weaving and knitting while other kinds of textile work accomplished by means of simple and improvised equipment also helped to alleviate the situation. Largely through the revival of native spinning and weaving crafts, the Chinese in the interior have barely managed to fill their most elementary clothing needs.

Following the extension of Pacific hostilities at the end of 1941, the inhabitants of the occupied areas also began to find themselves short of clothing materials. Cotton was lacking to feed the mills both in the occupied areas and Japan and the enemy laid priority claim on all cotton goods produced in her occupied territories. As a consequence people there also took up native spinning and weaving in order to satisfy their basic clothing wants.

The revived use of spinning wheels and hand looms holds no promise for a real solution to China's clothing problem after the war. Yet to restore the cotton mills in occupied areas to full production (providing they are not destroyed) and to establish new mills will be no easy task. During the interval, importation will comprise the only means of satisfying the clothing wants of the population. Thus large postwar imports of cotton goods at probably double the prewar level appear very likely, at least until domestic production can again be raised by new mills.

Where will China purchase the cotton goods she will need after the war? If Japan surrenders before her production facilities have been partly destroyed, then she will probably continue to supply China with a substantial quantity of such goods. The low cost of her labor coupled with her proximity to the Chinese market and her skill in the production of low-grade cotton goods will always place her in an advantageous position in competition with other countries. The only country able to compete with Japan will be China herself. But China will need time to rebuild her textile industry after the war.

If Japan falls only after most of her production facilities have been wiped out, however, then India will be the most logical source of cotton goods for China. The number of spindles and

looms in the Indian cotton industry has steadily increased in the last decade and the war has further stimulated her production of cotton goods. Like China, India possesses both raw materials and a cheap supply of labor and in addition the steady development of her textile industry over a number of years has improved her productive efficiency in this field. In the absence of competition from Japanese or Chinese mills, Indian goods would likely dominate the low-grade cotton goods market as well as the low count cotton yarn trade. Imports of Indian cotton goods will be facilitated further if a railway can be constructed across the Burmese border to Kunming in Yunnan province—a project which is already underway in fact.

With Japan eliminated from the cotton goods trade, Great Britain would have a chance to recoup some of her trade losses to Japan during the prewar years. But in view of the relatively high cost of her labor, her exports to China will probably be limited to high class cotton goods, especially bleached or dyed items. United States cotton mills have directed production chiefly toward supplying the domestic market and never have been in recent years an important supplier of cotton goods to China. The high cost of labor in the United States and the fact that most of her mills are situated on the Atlantic coast will always place her in a disadvantageous competitive position in the Far Eastern market. As methods of production have been well standardized, the cost of labor and of transportation plays a decisive role in the cotton goods trade. While China may buy some quantities of high class cotton goods or specialties from America, United States manufacturers probably will be unable to undersell Indian or British mills despite the probability that Japanese competition will be temporarily removed.

In the long run China has every reason for hoping to become self-sufficient in the production of cotton goods. Unless she fails abjectly in her program of industrialization, postwar imports of cotton goods will prove short-lived and the prewar steady decline of such imports eventually will resume. From the business point of view, foreign textile manufacturers may find it more advisable to establish cotton mills in China itself than to export cotton goods there. In disposing of the idle spindles which may accumulate after the war, therefore, American mills well may look into the possibilities of setting up cotton mills in China on a basis of cooperation with Chinese industrialists.

(2) *Woolen goods and woolen yarns*

The importation of woolen goods and woolen yarns during the last three prewar years is summarized as follows:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>	
Woolen piece goods	US\$3,439,000	Japan	41%
		Gt. Britain	36
Woolen yarn and cord	1,006,000	Japan	63
		Gt. Britain	27
TOTAL	4,445,000		

Like cotton goods, the export of woolen goods to China during the last few prewar years again was dominated by two countries—Japan and Great Britain. The closing-down of a number of woolen mills in the fighting zones caused an increase in such imports from \$4,078,000 in 1937 to \$4,873,000 in 1938—more than 60% of which came from Japan, especially woolen yarns and cords for knitting. As some of these mills resumed operations, imports of woolen goods began to taper off, their import value amounting to \$4,834,000 in 1939 and \$3,899,000 in 1940. The percentage of woolen goods imported from Japan also dropped from 50% in 1939 to 30% in 1940 as Chinese mills began to compete directly with Japanese goods. The woolen goods imported from Great Britain were usually superior in quality and their trade position during the war years remained fairly steady until the end of 1941, when hostilities spread to all areas of the Pacific. Nearly all woolen goods were imported into occupied areas and trade statistics show that only a very small quantity went to Free China. Very few such goods came from the United States either before or during the war.

For the common man of China woolen goods are not a necessity but a comfort and luxury. The use of woolen yarn for knitting was growing fairly popular in the coastal cities in prewar years but the wearing of woolen clothes (in most cases Western clothes) has been limited to a small, well-to-do and educated class. After the war some demand will again arise from this class while the possible influx of a large number of foreigners will also create a demand for woolen goods. But on the whole the demand for such imports will not be widespread and most of the clothing needs of the Chinese population will have to be filled by cheaper materials.

Because of the scarcity of fine wool in China and the low purchasing power of the people, the postwar development of a

native woolen textile industry will be comparatively slow. Evidently, therefore, imports of woolen goods in the immediate postwar period will at most approximate the prewar level and possibly will be slightly lower. If Japanese woolen mills are destroyed, then Great Britain alone will be left as an important supplier of woolen goods to China. In the absence of Japanese competition both Australia and the United States will also be able to supply some woolen goods although the quantity will not be very large.

(3) *Rayon and rayon goods*

A potential market will exist in China for United States and British manufacturers of rayon and rayon piece goods since the two most important prewar suppliers to China—Japan and Italy—will probably have lost a considerable proportion of their production facilities by the time the war is over. The average annual values of rayon imports during the last three prewar years are summarized as follows:

<i>Kind</i>	<i>Average Value 1935-1937</i>	<i>Important Suppliers</i>	
Rayon yarns	US\$2,263,000	Italy	49%
		Japan	46
Rayon piece goods	970,000	Japan	75
<i>TOTAL</i>	<i>3,233,000</i>		

After war broke out, imports of these goods increased considerably from \$5,180,000 worth in 1938 to \$7,891,000 in 1939 and \$10,541,000 in 1940. This increase was essentially due to the large importation of rayon piece goods, almost entirely from Japan; their import value rose from \$3,044,000 in 1938 to \$3,899,000 in 1939 and to \$6,810,000 in 1940. The importation of rayon yarns, while registering a slight decline at \$2,137,000 in 1938, rose to \$3,991,000 in 1939 and to \$3,731,000 in 1940, with Japan again supplying a major proportion of such imports. Thus Japan's share of the total imports of this group was 88% in 1938, 66% in 1939 and 84% in 1940, with Italy lagging far behind.

This tremendous increase of rayon imports from Japan serves to explain why in the same period Japan did not increase her shipments of cotton goods to China. In the export of cotton goods to China, she had to compete not only with Chinese cotton mills in occupied areas but also with Japanese mills in China. But in selling rayon goods she found no competition

from domestic production since rayon mills were virtually non-existent in China. Furthermore, Japan's war preparations included emphasis on producing rayon instead of cotton goods because she had to import cotton while she could make rayon with wood pulp from her own country or Manchuria. These imports also seem to indicate the existence of a wide market for rayon goods so long as they could be sold at a reasonably low price. By virtue of their applicability to a multitude of uses, rayon goods began to compete not only with cotton products but with silk and woolen goods as well, especially when the so-called rayon goods were made of both rayon and other fibres.

The manufacture of rayon is an industry which is still in the process of development. New uses and new methods of production are being discovered as a result of constant research, so that by the time the war ends many finer and cheaper rayon fibres may be on the market. With the production facilities of Japan and Italy temporarily knocked out, the increasing production of rayon in the United States and Great Britain would certainly find an outlet in China. The extent to which rayon and rayon piece goods will be used in postwar China will depend mainly upon their prices. If these compare favorably with those of cotton goods, certainly a large volume will be imported. Since labor costs in the United States and Great Britain will necessarily be higher than in China, however, it will be more economical to import rayon yarns and weave them there than to import rayon piece goods, unless looms and other equipment for weaving and finishing are not sufficient. Sooner or later China will build rayon factories of her own; she has the raw materials—cotton or wood pulp—as well as a domestic market large enough for the profitable operation of such an industry. United States and/or British manufacturers therefore may find it advantageous to establish mills in China in cooperation with Chinese interests so that the cost of rayon production and marketing can be reduced to a minimum. Only by bringing down the cost of rayon goods as low as possible can a profitable market for them be firmly rooted in the Chinese economy.

(4) *Flax, ramie, hemp, jute and their products*

This group includes a great variety of textile materials such as jute, flax, hemp, ramie, cordage, rope, sheer linen, hessian

cloth, gunny bags, embroidery linen, kapok, etc., but by far the most important are gunny bags and embroidery linen. Since they are used for entirely different purposes and imported from different countries, they will be discussed separately.

Gunny bags: The average annual import value of gunny bags—old and new—during the last three prewar years was about \$1,309,000. About 35% of these consisted of new bags from India while the other 65% were old ones from both India and Japan. The largest jute-producing country in the world, India is the principal supplier of gunny bags (which are made of jute). They are used in China to pack cereals, cotton, seeds and other agricultural produce. Made of tough fibres, they can be used over and over again; hence old bags are also marketable at a reduced price. The used bags imported from Japan were actually made in India, bought by Japanese traders and then resold in China after being used to pack agricultural produce for shipment to Japan. Since a major portion of China's produce consists of agricultural staples moved pack by pack from the interior to the coastal cities or vice versa, the use of gunny bags became a most practical and important means of packing goods for storage or shipment.

The war between China and Japan created an extraordinary demand for gunny bags in occupied areas. The import value of gunny bags remained around the prewar level in 1938 and 1939, amounting to \$855,000 and \$1,475,000 respectively, but in 1940 it rose to about \$7,366,000, nearly nine-tenths of which was attributable to shipments to Tientsin and Tsingtao. The strong demand for gunny bags in North China during that year was probably a consequence of the enemy's efforts to collect cotton and other agricultural produce from the interior of North China for shipment to Japan, as well as to the necessity of sending various food supplies to troops stationed in the occupied areas. Such a demand is not expected to persist after the enemy leaves China. On the other hand, since practically no new gunny bags have been imported either into Free or occupied China since the end of 1941, most of the old stocks must be completely worn out through repeated use even though the movement of agricultural staples has considerably slackened on account of decreased production and greater transportation difficulties. When the war is over, replenishment of stocks will be necessary in order to resume the normal movement of com-

modities to the marketing centers. The importation of gunny bags will therefore probably show some increase over the prewar level and nearly all such imports will come from India.

Embroidery linen materials: These materials were imported for making linen goods, one of China's most important exports in prewar years. The embroidery and cross-stitch work of Chinese linen was the result of a great handicraft practiced by Chinese women in the coastal provinces, especially in South China. The materials they used came mostly from Great Britain. The average annual import value of these materials during the last three prewar years was about \$2,534,000 with Great Britain contributing around 82% of the total, Belgium 9% and Japan 3%. During the first two years of the war when Japanese forces had not yet reached South China, their shipment to China remained fairly steady, their import value amounting to \$2,294,000 in 1938 and \$3,204,000 in 1939. About 70% went to the southern port of Swatow, the most important producing center for Chinese linen goods. When war spread to South China in 1940, imports dropped sharply to \$833,000 and ceased altogether after Pearl Harbor.

The postwar importation of embroidery linen materials will depend upon these three factors: firstly, the continuation of a wide foreign market for Chinese linen goods; secondly, the availability of such materials in China *vis à vis* their availability in Great Britain and other countries; and thirdly, the presence of handicraft labor in China. In the absence of shipments since 1942, the market for Chinese linen goods in the United States and elsewhere has been greatly reduced by competitive products and time will be required to recover some of the ground lost. During the war cloth made of ramie has been used in the interior on a small scale in place of linen for cross-stitch work and will probably continue to be used even though high class goods require the use of imported linen. The serious famine now prevalent in South China, where most of the linen goods were produced, will certainly reduce the supply of handicraft labor and therefore the output of linen goods. Thus the importation of embroidery linen materials probably will decline substantially as compared with the prewar level.

The average annual value of this group of imports as a whole during the last three prewar years was about \$5,389,000. Since any decline in imports of linen will be offset to some

extent by a possible increase in the shipment of gunny bags, the total import value will show little change in the immediate postwar years.

(5) *Paper and paper products*

From 1935 to 1937 the importation of paper and paper products into China ran as shown in the table on page 104.

The import trade in most paper goods was highly competitive and as can be seen from the table none of the major supplying countries contributed more than 20% of the total imports in the last three prewar years. The general trend of competition indicated steady gains by Germany and Japan but after war broke out Japan gained considerably at the expense of Germany. While the total value of paper imports fell from \$19,101,000 in 1937 to \$13,358,000 in 1938 and then recovered to \$18,422,000 in 1939 and \$19,108,000 in 1940, the percentage of Japanese imports rose from 22% in 1937 to 32% in 1938, then to 54% in 1939 and to 42% in 1940. In the meanwhile the percentage of German goods fell from 25% in 1938 to 13% in 1939 and to little more than 1% in 1940. Paper imports from the United States at first fell from \$2,347,000 in 1937 to \$1,231,000 in 1938 and to \$1,371,000 in 1939, but rose to \$4,990,000 in 1940 (or 26% of the total paper imports in that year). Most of the paper goods imported after the war began went to the occupied areas; because of transportation difficulties only a moderate quantity of these imports reached Free China. After Pearl Harbor only Japan could ship paper to the occupied areas but the quantity imported must have been drastically curtailed for lack of shipping facilities. So far as Free China is concerned, a moderate quantity of banknote paper has continued to be imported by air since the fall of Burma, but there have been few imports of other items. The trade prospects of various paper imports are commented on as follows.

Books, periodicals and maps: Hongkong was the principal foreign supplier of books to China. As a free port Hongkong imposed no duty on paper while China admitted books but not paper items free, so that it was economically desirable in certain cases to print books in Hongkong for export to China. After war started even more books were imported from Hongkong since some of the large printing establishments in Shanghai were

<i>Kind</i>	<i>Annual Import Value</i>	<i>Important Suppliers</i>	
Books, maps and old newspapers	US\$1,825,000	U.S.A.	39%
		Hongkong	37
		Japan	13
Common newsprint paper	5,266,000	Germany	29
		Canada	23
		Norway	10
		Sweden	9
		Japan	9
		U.S.A.	3
Paper boards	937,000	Germany	57
		Japan	10
		Sweden	10
		U.S.A.	5
		Norway	4
Cigarette paper	927,000	Japan	51
		Italy	17
		France	12
		U.S.A.	9
		Gt. Britain	6
Craft paper	706,000	Sweden	28
		Canada	20
		Japan	10
		Germany	9
Printing paper (not made of mechanical wood pulp)	1,132,000	Japan	24
		U.S.A.	19
		Germany	16
		Austria	13
		Norway	12
		Sweden	3
Banknote, bond and drawing paper	501,000	U.S.A.	74
		Germany	6
Packing or wrapping paper	563,000	Germany	36
		Sweden	32
		Japan	11
Paperware	2,960,000	Gt. Britain	48
		U.S.A.	34
		Japan	6
Wood pulp	616,000	U.S.A.	37
		Canada	22
		Sweden	19
		Finland	7
TOTAL (including other paper products than listed above)	18,508,000	Germany	20
		U.S.A.	16
		Japan	15
		Gt. Britain	9
		Sweden	8
		Canada	8
		Norway	6
		Austria	4

destroyed during the course of fighting. These imports ceased when Hongkong was seized by the enemy at the end of 1941. In prewar years China used to purchase a large quantity of old newspapers and periodicals from the United States for remanufacturing purposes—a fact which accounts for the leading position of the United States as a supplying country under this heading. Such exports continued to be shipped to coastal ports until the end of 1941.

Whether or not China will continue to import books from Hongkong after the war depends upon to what extent the printing establishments there have been damaged as well as upon the postwar tariff situation of Hongkong relative to that of China. Most probably Hongkong will be severely contested by the opposing forces with attendant large-scale destruction of its properties. As the number of paper mills has been and will be further reduced as the war progresses, the postwar consumption of old newspapers for remanufacture will be likely to decline, especially when a hardly sufficient stock of old newspapers in other countries will be on hand for export. So generally speaking Chinese importation of books, periodicals and old newspapers after the war will be somewhat lower than the prewar level.

As soon as the war is over many universities and institutions will have to order large quantities of reference books for their libraries. During the course of the war nearly all Chinese universities moved to the interior and a great number of reference books were lost on the way or destroyed by the enemy. In order to make up the loss a sum was appropriated from the series of credits granted by the Export-Import Bank for the purchase of books and periodicals in America. Most of them, however, failed to reach China before the Burma Road was closed and educational institutions in Free China have remained seriously short of reference books. Thus, while imports of books and newspapers may decline as a whole, American and British publishers especially may enjoy more business with China along these lines than in prewar years.

Newsprint and common printing paper: Common printing and newsprint paper was by far the most important of all paper goods imported by China and was also subject to the keenest competition among supplying countries. Germany, Canada,

Norway, Sweden, Japan, Austria and the United States all entered the contest with Germany taking the lead in the last two prewar years. The Chinese newspaper industry had been steadily developing during prewar years, thus creating a large demand for newsprint paper. Yet for lack of an adequate supply of wood pulp China possessed not a single mill for making such paper. After the war broke out a number of leading newspapers in the coastal cities either suspended operations for some time or moved to the interior, thereby causing a reduction of newsprint imports from \$5,993,000 in 1937 to \$2,909,000 in 1938. The enemy, however, soon began to publish newspapers in the occupied areas for propaganda purposes and the import value of newsprint increased to \$4,418,000 in 1939 and \$3,529,000 in 1940, most of it coming from Japanese paper mills. It has not been possible to ascertain how much newsprint was imported into the occupied areas after Pearl Harbor but presumably the quantity must have been considerably reduced because of shipping difficulties. In the meanwhile the newspapers in the interior have had to depend largely on a kind of native paper which is coarse, brownish and very hard on the eyes. The circulation of these newspapers was also greatly limited.

The fact that the war has destroyed a number of printing machines in coastal regions together with the possibility it will destroy more before the war ends is likely to cause a reduced consumption of newsprint paper in China during the immediate postwar period. The generally impoverished condition of the people will also limit the circulation of newspapers and magazines. Moreover, with the possible elimination of Germany and Japan as two leading suppliers of newsprint and with the rapid development of new uses for wood pulp in the manufacture of rayon and plastics and in other fields, the supply of newsprint paper may be so reduced as to make its price prohibitive to large-scale consumption in China. Therefore postwar imports of newsprint paper may fall somewhat below the prewar level but at the same time a much larger proportion of such supplies will come from Canada and the United States.

Banknote and bond paper: The largest Chinese purchaser of banknote and bond paper after the war will be the government itself. A substantial quantity has already been purchased during the war almost exclusively from America. As the policy

of the Chinese Government long has been to print its own currency and public securities, China will import large quantities of such paper in the postwar period.

Cigarette paper: Cigarette paper obviously is consumed in proportion to the quantity of cigarettes produced. Since both production and consumption of cigarettes postwar probably will decline, imports of cigarette paper will fall off correspondingly. Imports during the first three years of war were about one-third larger than during the last three prewar years, for the war had closed the few mills in China capable of making such paper. The increased production of cigarettes by enemy factories in occupied areas also accounted partly for the larger consumption of cigarette paper. Japan was the most important supplier in the last few prewar years and during the first two war years but in 1940 the United States succeeded in forging ahead. In the postwar period the United States will probably continue to be the leading supplier in this trade.

Paper boards: In the last few prewar years almost 60% of the paper boards imported by China came from Germany but Japan took the lead during the first two years of the war. By 1940, however, the United States led in such shipments to China. The war has greatly stimulated their manufacture in the United States and their applicability has been tremendously widened. Relatively inexpensive, paper boards are likely to find a good market in postwar China for packing, insulation and other purposes. The importation of such materials will probably rise above the prewar level, therefore, and the United States will continue to be the principal supplier.

Paperware: Paperware was imported principally from Great Britain and the United States in the last three prewar years. After the war began, total imports fell from \$2,453,000 in 1937 to \$592,000 in 1938 and then recovered to \$1,102,000 in 1939 and \$1,863,000 in 1940, but it was Japan which became the principal supplier of such goods to China. The war has developed and popularized a great number of new paper articles, many of which will find a future market in China because of their low price. Of course most of them can eventually be manufactured domestically but time will be needed to install the machinery necessary. The postwar importation of paperware possibly will approximate the prewar level.

Wood pulp: In prewar years all of the chemical wood pulp and part of the mechanical pulp used by Chinese paper mills were imported from abroad. Average annual imports during the last three prewar years ran to around 13,500 metric tons, of which about 12,000 tons were chemical pulp. During the war a number of paper mills were destroyed or suspended operations so that imports fell from 16,000 metric tons in 1937 to 1,900 metric tons in 1938 but rose again slightly to 2,800 metric tons in 1939. In 1940 as some of the mills began to resume operations, imports rose to 7,270 metric tons. The fact that most of the mills were located in coastal cities while timber for wood pulp could be found only in regions inaccessible to transportation facilities made such imports a matter of necessity for most Chinese mills. Thus far no mills have been established to make chemical wood pulp on a relatively large scale.

Although attempts will be made postwar to build paper mills in the interior using domestic pulp, imports of pulp probably will continue to be necessary for those mills located in coastal regions. Some pulp also will be imported from Manchuria. The making of chemical pulp, whether by sulphite, sulphate or soda processes, requires large quantities of chemicals as well as special technique and equipment, none of which will be readily available in postwar China. The temporarily reduced number of paper mills, however, will cause a somewhat lower consumption of wood pulp than prewar.

After considering the postwar prospects of each of these items of paper imports, we may conclude that the total importation will probably fall below the level of the last three prewar years. Their consumption will increase, however, as Chinese purchasing power recovers from the effects of war. Given the temporary or partial elimination of Germany and Japan as two leading suppliers of paper goods, the United States and Canada will undoubtedly take a much larger share of this trade than in prewar years. Sooner or later China herself will construct a number of paper mills to manufacture some of the items previously imported, and eventually sufficient quantities of wood pulp will be secured from timberlands in southwestern China or Manchuria once transportation facilities improve. Meanwhile China will continue to rely heavily on importations to meet her needs for various paper products, although for some time such imports perhaps will be reduced in quantity.

(6) *Leather, hides and other animal substances*

Formerly China exported hides but owing to a lack of adequate tanning facilities she normally imported high-grade leather from a number of countries—principally the United States and Germany. The average import value of these goods during each of the last three prewar years amounted to about \$1,460,000 with the United States supplying 21%, Germany 18%, Japan 8% and Australia 6%. In addition to all kinds of high grade leather for shoes, machine belts and other purposes, this group also included a quantity of skins and furs not produced in China, cow bones for various kinds of bone goods, elephant tusks for art goods and numerous kinds of bones and horns used in Chinese medicine such as deer horns, tiger bones, rhinoceros horns etc.

Imports declined slightly in 1938 to a value of about \$1,316,000 but rose to \$2,218,000 in 1939 and \$3,416,000 in 1940. This increase was due to a number of reasons—the closing-down of native tanneries during the course of the war, the forcible collection of hides by the enemy in occupied areas which necessitated importing hides to feed the tanneries still in operation, the increased importation of foreign furs and skins because domestic materials were held up in the interior and the general rise of prices. By far the major portion of these goods went to the occupied areas. The United States continued as the principal supplier until the outbreak of hostilities in the Pacific at the end of 1941.

With a large production of hides and skins, certain important tanning materials such as gall nuts, and a potential market for leather of all kinds, China should prove eminently suitable for the establishment of modern tanneries. In fact a growing number were already being built in the last few prewar years, which accounted for the steady decline of these imports during this period. Postwar still more modern tanneries probably will be set up so that the more adequate supply of domestic leather resulting may replace some of the leather goods previously imported.

As native drugs gradually yield ground to modern, the use of various kinds of bones and horns will certainly decline. The possible scarcity of skilled handicraft labor in the postwar

period may also cause a decrease in imports of cow bones and elephant tusks. In all, the importation of this group of goods will probably fall below the prewar level.

(7) *Glass, chinaware and enamelware*

The average annual import value of this group during the last three prewar years was \$1,778,000 distributed among the important supplying countries as follows: Japan 30%, Germany 21%, Belgium 16%, Kwantung Leased Territory 11%, the United States 6% and Great Britain 5%. Japan led in supplying chinaware, glass bottles and glass tableware; Germany in eyeglasses, optical glass and enamelled ironware; and Belgium and the Kwantung Leased Territory in plate and window glass.

The war caused only a temporary decline in total imports, their value amounting to \$1,116,000 in 1938, \$1,589,000 in 1939 and \$2,022,000 in 1940. At the same time it indirectly gave Japan an increasing share of the trade year after year so that by 1940 about 82% were imported from Japan (more than half consisted of chinaware), since military operations had cut off the shipping route between the porcelain center in Kiangsi province and the markets in coastal regions.

The end of the war will enable the porcelain-producing district in Kiangsi to resume production and shipment to coastal cities, thereby automatically reducing imports of chinaware from Japan. The glass-making facilities of the three principal supplying countries—Germany, Japan and Belgium—may be seriously impaired by the time the war is over while the return of Manchuria will make the plate glass factory in the Kwantung Leased Territory a domestic source of supply. Thus the postwar importation of these goods is likely to decline as compared with prewar. In view of the fact that the war has greatly stimulated the glass industry in the United States, the market forfeited by Belgium and the Axis countries should be easily taken care of by American manufacturers.

(8) *Fats, oils, resins and soap (excluding petroleum products)*

In addition to petroleum products China also imported a fairly large quantity of miscellaneous oils, fats, resins and soap whose annual import values during the last three prewar years were as follows:

<i>Kind</i>	<i>Annual Import Value</i>	<i>Important Suppliers</i>	
Vegetable oils	US\$1,177,000	Kwantung Leased Territory	28%
		Gt. Britain	8
		Straits Settlements	7
Non-vegetable oils	1,426,000	Japan	31
		U.S.A.	10
		Gt. Britain	9
		Netherlands India	5
		Norway	4
Resin and gum	452,000	U.S.A.	39
		British India	11
		Japan	5
Soap	327,000	Japan	39
		U.S.A.	35
		Germany	13
		Gt. Britain	6
TOTAL	3,382,000		

The vegetable oils which China imported consisted mainly of soy bean oils from the Kwantung Leased Territory, essential oils from various countries and cocoanut oil from the Straits Settlements. The most important non-vegetable oils were fish oils mainly from Japan, cod-liver oil from Norway, artificial essential oils from various countries and turpentine from the Netherlands and the United States. Resin came mostly from the United States and shellac from British India. The import trade in soap—mainly toilet soap and fancy items—was shared largely by Japan and the United States. Prewar a number of Chinese soap factories were operating in coastal cities so that China was relatively self-sufficient in the supply of household and laundry soap.

The war caused a number of increases in the importation of these goods. Substantial quantities of soy bean oil were exported from Manchuria in 1938 and 1939 to coastal cities in North China since vegetable oils produced in the interior could no longer be shipped there. Imports of household and other soaps from Japan also increased considerably, apparently because domestic production had been interrupted by fighting in the coastal cities where most of the factories were located. The unavailability of the native oil produced in the interior for soap necessitated increased imports of non-vegetable oils as substitutes. Thus the total import value of this group rose from \$3,241,000 in 1938 to \$6,849,000 in 1939 and to \$5,743,000 in 1940.

As such increases basically were caused only by the dislocation of domestic production in the course of fighting, the end of the war presumably will reduce such imports to the normal level. The return of Manchuria will give China a domestic source of oil as well, while the use of essential oils will be curtailed in the absence of a large postwar demand for cosmetics and toilet preparations. While more soap factories may be lost as the war goes on, the manufacture of soap is so relatively simple that China should be able to rebuild her factories rapidly and supply her population with sufficient quantities of common soap. Taking all these factors into consideration, we may conclude that imports of this group will show a considerable decline in comparison with the prewar level.

(9) *Photographic goods*

The average annual value of photographic goods, including cameras, moving picture films, and photographic supplies, was about \$2,418,000 during the last three prewar years, with the United States supplying 59%, Germany 27% and Great Britain 4%. Germany led in the export of cameras and photographic lenses while the United States easily outdistanced all other countries in supplying motion picture films. The United States, closely followed by Germany, also led in the export of photographic materials and supplies to China. After war broke out, their annual import value during the first three war years averaged only around \$1,500,000. Japan, however, began to sell China considerable quantities of photographic supplies and exceeded both the United States and Germany in this particular class in 1939 and 1940. Nearly all such goods were shipped to occupied areas.

Thus far the use of photographic goods in China has been more recreational than educational and the limited purchasing power of the Chinese people postwar will not be conducive to large-scale imports of photographic supplies and motion pictures. The probable influx of tourists after the war, the growing popularity of American motion pictures in China and the increasing use of films as a means of propaganda and education will certainly create a greater demand for such goods than existed during the war years. But until general living conditions improve, photography and motion pictures will remain a privilege for a limited few. Imports will at most, therefore, ap-

proximate the prewar level but, with the temporary elimination of Germany and Japan as important suppliers, United States manufacturers should certainly take a much larger share of this trade.

(10) *Sundries*

Under this heading are included various imports not otherwise listed, among which the most prominent are clocks, watches, fire engines, miscellaneous metalware, bedsteads, casements, jewelry, ornaments, musical instruments, building materials not otherwise mentioned, buttons, cosmetics, perfumery, toys, sporting goods, live animals and parcel-post items. The annual import value of this group in the last three prewar years averaged about \$25,057,000. Most of these must be considered luxuries—so far as China is concerned—but the end of the war will see greatly depleted stocks and release a sizeable though perhaps short-lived demand. Thus the import value of these sundries probably will approximate the prewar level.

CHAPTER V

A SUMMARY OF CHINA'S POSSIBLE POSTWAR PURCHASES

On the basis of our discussion regarding the individual prospects of various import items we shall make a general estimate of China's postwar purchases as a whole. So many factors lie beyond the scope of our present knowledge and so many assumptions may or may not prove to be valid that such an estimate will necessarily be arbitrary and in many cases only guesswork. Its justification lies in the fact that it is based on a certain logical and historical sequence and may help us to view the problem in a somewhat realistic fashion.

A table is therefore given showing: the average value of each class of imports during the last three prewar years; the United States' average share in the same period; the yearly value of each class of imports in the immediate postwar period; and the United States' possible share in each (in U.S. thousand dollars):

<i>Kind</i>	<i>Average Value (1935-1937)</i>	<i>Average Share, U. S. (1935-1937)</i>	<i>Estimated Average Value Postwar</i>	<i>Possible Share, U. S.</i>
I. CAPITAL GOODS				
A. Machinery and tools				
(1) Electrical machinery	5,970	941	20,000	14,000
(2) Textile machinery	5,473	277	15,000	5,000
(3) Hand and machine tools	1,849	425	6,000	5,000
(4) Boilers, steam and gas engines	2,569	343	5,000	3,000
(5) Food machinery	1,050	106	2,000	1,500
(6) Tele-communication equipment	2,096	763	4,000	3,000
(7) Scientific instruments	2,248	426	3,000	2,000
(8) Printing machinery	980	276	1,000	800
(9) Pumping machinery	400	123	1,000	800
(10) Agricultural machinery	80	16	200	150
(11) Other machinery	7,273	1,437	10,000	6,000
<i>Sub-total</i>	29,988	5,133	67,200	41,250
B. Iron and steel	28,827	4,953	40,000	30,000
C. Non-ferrous metals	6,785	2,422	6,000	4,000
D. Railway equipment	5,464	352	20,000	12,000

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<i>Kind</i>	<i>Average Value (1935-1937)</i>	<i>Average Share, U. S. (1935-1937)</i>	<i>Estimated Average Value Postwar</i>	<i>Possible Share, U. S.</i>
E. Automobiles and bicycles	8,075	3,985	14,000	10,000
F. Airplanes and ships	724	331	4,000	3,500
G. Timber	9,394	3,347	12,000	6,000
H. Cement and related products	1,276	129	2,000	150
TOTAL	90,533	20,652	165,200	106,900
II. PRODUCERS' GOODS				
A. Petroleum products	30,793	10,015	30,000	10,000
B. Dyes, pigments and paints	12,264	2,248	10,000	6,000
C. Chemicals and pharmaceuticals	15,963	1,313	16,000	8,000
D. Rubber and rubber goods	3,167	205	4,000	200
E. Coal, fuel and tar	2,433	168	1,200	200
F. Wood, bamboo and rattan	2,348	36	2,300	60
G. Raw cotton	10,234	4,085	10,000	2,000
H. Wool	4,395	3	3,000	30
TOTAL	81,597	18,073	76,500	26,490
III. CONSUMERS' GOODS				
A. Food, beverages and tobacco				
(1) Cereals and flour	27,826	572	27,000	2,000
(2) Sugar	7,568	179	5,000	150
(3) Tobacco	5,186	4,515	4,500	4,000
(4) Fishing and sea products	5,286	159	3,000	100
(5) Fruits, seeds and vegetables	1,976	554	1,500	300
(6) Animal products, canned foods and groceries	3,150	642	3,000	630
(7) Medicinal substances and spices	2,609	82	2,000	80
(8) Wines and liquors	637	1	500	10
TOTAL	54,238	6,704	46,500	7,270
B. Other Consumers' Goods				
(1) Cotton piece goods and cotton yarn	7,341	115	25,000	2,000
(2) Woolen goods and woolen yarn	4,445	27	4,000	500
(3) Rayon goods	3,233	40	5,000	2,000
(4) Flax, ramie, hemp, jute and manufacture thereof	5,389	17	5,000	30
(5) Paper and paper products	18,508	2,920	15,000	5,000
(6) Hides, leathers and other animal substances	1,460	302	1,000	500
(7) Glass chinaware	1,718	101	1,000	50
(8) Fats, oils and resin (excluding petroleum)	3,382	474	1,500	300
(9) Photographic goods	2,418	1,423	2,000	1,600
(10) Sundries	25,057	7,532	27,000	8,000
TOTAL	72,953	12,951	86,500	19,980
GRAND TOTAL	299,321	58,380	374,700	160,640

From the foregoing table the following conclusions may be drawn:

(1) *The total value of China's purchases in the immediate postwar period will probably run around \$374,700,000 per year, an increase of more than 25% over the average import value of the last three prewar years. In arriving at this figure, however, the rise of the price level in terms of United States currency during the war years has not been taken into consideration. If we assume a rise of 30% over the prewar price level, the yearly value of China's postwar purchases will then have to be raised to \$487,110,000, an increase of 62% over the prewar level.*

(2) *The total value of capital goods to be imported will increase tremendously in the postwar period as compared with prewar even without considering this 30% rise in the price level. In other words not only the total value but also the volume of such imports will be very much larger. This prospect is only natural for undoubtedly China will find it necessary to make up the losses in capital goods she has suffered during the war in order to carry out her program of industrialization. In addition to this factor is the likelihood that most postwar credit arrangements will be limited to the procurement of capital goods.*

Meanwhile imports of producers' goods will decline slightly. An increase of capital goods normally brings about a corresponding expansion in the use of non-durable producers' goods. But in spite of prospectively heavy imports of capital goods, losses of Chinese production facilities can not possibly be made up in one or two years sufficiently to require imports of producers' goods approximating the prewar level. Furthermore not all of these goods will need to be imported and in the future China may even achieve a high degree of self-sufficiency in respect to cotton and coal with little difficulty, providing her industries are well-distributed in producing districts and consumption of such materials does not suddenly increase.

The shipment of foods, beverages and tobacco to China will also decline because of a smaller population in the coastal regions and reduced purchasing power. The shipment of daily food necessities such as cereals and flour will be an emergency requirement as soon as the war ends but may not recur if China is favored with good crops in the postwar period. The import

of other items such as fishery and sea products, medicinal substances, wine and liquors will also be reduced by lack of purchasing power. The decline of population in China after more than seven years of fighting is a factor which so far has not been sufficiently recognized nor has its extent been given any accurate estimate. Such a decline will be reflected to some extent in reduced postwar imports of food supplies.

Importation of other consumers' goods will probably remain around the prewar level due to a prospective postwar deficiency in domestic production and also to the need of traders to lay in minimum stocks for current and near-term requirements. As an agricultural country China can always produce adequate food supplies but she must be further industrialized in order to produce other consumers' goods in quantities large enough to meet all her needs. The decline of population in coastal cities will have little effect on food production because most food commodities are grown in the interior, but this decline together with the loss of production facilities will bring about a decrease in the production of other consumers' goods needed both by coastal regions and the interior. Hence little likelihood exists that the importation of other consumers' goods will decrease in spite of the possibility of an appreciable decline in population.

(3) *Taking into consideration the 30% rise of the price level, we may expect an all around increase in the value of all classes of imports as compared with the prewar level.* The value of the three major classes of imports may be adjusted as follows (in U.S. thousand dollars):

I. Capital goods	214,760
II. Producers' goods	99,450
III. Consumers' goods (foods and tobacco)	60,450
IV. Others	112,450
	<hr/>
TOTAL	487,110

The most important items of imports will be as follows:

(1) Machinery and tools	87,360
(2) Iron and steel	52,000
(3) Petroleum products	39,000
(4) Cereals and flour	35,100
(5) Sundries	35,100
(6) Railway equipment	26,000

(7) Chemicals and pharmaceuticals	20,800
(8) Cotton piece goods	32,500
(9) Paper and paper products	19,500
(10) Automobiles and bicycles	18,200
(11) Timber	15,600
(12) Raw cotton	13,000
(13) Dyes, pigments and paints	13,000
(14) Non-ferrous metals	7,800
(15) Sugar	6,500
(16) Rayon and rayon goods	6,500
(17) Flax, ramie, hemp and jute goods	6,500
(18) Tobacco	5,850
(19) Airplanes	5,200
(20) Woolen goods	5,200
(21) Rubber and rubber goods	5,200

No doubt the most important item in China's postwar purchases will be machinery and tools. This view is logical as well as wishful thinking. Probably a substantial proportion will be procured in the form of reparations from the enemy in second-hand condition or under certain credit arrangements, but the fact remains that China must have them by all means.

Next to machinery and tools, iron and steel will comprise the most important postwar import. Since one of China's most urgent tasks after the war will be rebuilding her railways, the shipment of steel rails alone will amount to several hundred thousand tons. Millions of Chinese will have to replace worn-out tools and implements and will need wires and nails to patch up huts and houses. If, let us say, the per capita use of iron and steel is only one pound per year, the total consumption of 400,000,000 people obviously would amount to at least 200,000 tons. The domestic production of iron and steel in the postwar period will be far from sufficient and even in the long run China may not be self-sufficient in this basic metal because of the relative paucity of her iron deposits. As her industrialization program progresses she will produce more iron and steel but at the same time will consume a good deal more than she can produce, so that imports will grow even larger. The same tendency will hold true regarding some of the non-ferrous metals such as copper, brass, aluminum and others.

Imports of petroleum products, cereals, flour and cotton piece goods tended to run into substantial figures because these were purchased by the common people. The use of kerosene as lamp oil, however, is on the decline. The availability of

cheap coal and the possibility of increasing domestic oil production will in the long run discourage oil imports. The importation of cereals and flour can be drastically reduced by good crops as well as by improvements in transportation facilities. As Chinese cotton mills recover and increase their productive capacity, imports of cotton piece goods will resume their previous decline. These three classes of imports may fall off once China gets back on her feet economically.

The purchase of railway equipment, chemicals, pharmaceuticals and paper and rayon products will probably continue for some time after the war and even at a somewhat higher level. China can absorb railway materials in almost unlimited quantities, for new railway construction will require at least ten to fifteen years. With regard to chemicals and pharmaceuticals, the importation of ammonia fertilizers will probably decrease as domestic production increases but the market for pharmaceuticals can be easily broadened as general living standards improve and modern drugs win greater popularity. Although China plans to set up a number of paper mills, postwar consumption of paper will increase more rapidly than domestic production, especially if and when the Chinese literacy rate is raised by popular educational measures. The consumption of rayon goods also will probably increase steadily and while some domestic mills for making rayon will be set up, a substantial quantity will remain to be imported.

The raising of the Chinese living standard through industrialization will lead to a considerable increase in the purchase of automobiles, bicycles, dyes, pigments, paints, tobacco products, airplanes and ships, flax and jute goods, woolen goods and rubber and rubber goods. On the other hand the increasing availability of a domestic supply may reduce the shipment of timber, raw cotton and sugar. On the whole we can safely predict that the industrialization of China will result in a tremendously increased volume of imports. A few items may fall off as a result, but such decreases will be negligible as compared with the gains made in other imports. It is a time-honored rule that an industrialized country always imports and exports more than an industrially backward country.

(4) *The share of the United States in China's postwar purchases, taking into account the 30% rise of the price level, may be estimated as follows (in U.S. thousand dollars):*

I. Capital goods	138,970
II. Producers' goods	34,437
III. Consumers' goods (foods and tobacco)	9,351
IV. Other goods	25,974
TOTAL	208,732

The most important imports from the United States will be:

(1) Machinery and tools	53,625
(2) Iron and steel	39,000
(3) Railway equipment	15,600
(4) Automobiles and bicycles	13,000
(5) Petroleum products	13,000
(6) Chemicals and pharmaceuticals	10,400
(7) Sundries	10,400
(8) Timber	7,800
(9) Dyes, pigments and paints	7,800
(10) Paper products	6,500
(11) Non-ferrous metals	5,200
(12) Tobacco	5,200
(13) Airplanes and ships	4,550
(14) Cereals and flour	2,600
(15) Rayon goods	2,600
(16) Cotton piece goods	2,600
(17) Raw cotton	2,600
(18) Photographic goods	2,340

By supplying about \$208,000,000 worth of goods each year in the immediate postwar period (according to our estimate), the United States will easily take the commanding position in China's import trade; in other words probably about 43% of China's postwar purchases will be made in the United States.

More than 60% of United States' shipments to China will consist of capital goods of which the most important will be machinery and tools, iron and steel, railway equipment and automobiles. The United States' position in regard to supplying capital goods to China will be the most favorable—firstly, because postwar she undoubtedly will have a surplus of certain capital goods or of the facilities for producing them; secondly, because few if any European countries will be able to export capital goods; and lastly because adequate credits for the procurement of capital goods are more likely to be arranged here than elsewhere. In view of her limited purchasing power and relative backwardness in terms of industrial skill, China will provide a good market for second-hand machinery and tools, scrap iron and steel and used railway equipment. China must

buy as cheaply as possible while the United States must dispose of her old surplus facilities in order to make room for more efficient installations. The needs of both buyer and seller will therefore correspond provided no artificial barriers restrict the movement of such goods.

China will of course obtain a portion of the capital goods she needs in the form of reparations from the enemy. For the sake of permanent peace and in the name of justice it will be absolutely necessary to strip the enemy of his war industries (if, that is, they still remain in operation when the war is over) in order to use such facilities to make up at least part of the losses China has suffered. Seizure of the enemy's industrial facilities will give her industrialization program as a whole a good start but will not materially reduce the quantity of capital goods to be procured from the United States. What most effectively limits China's purchases is not her lack of capacity for absorbing capital goods but rather her lack of purchasing power, which obviously will remain unreduced so long as the enemy's facilities are obtained without payment.

China will also procure some capital goods from Great Britain; the extent of such purchases will depend upon the relative attractiveness of the terms Great Britain can offer as compared with American terms. Most probably Great Britain will not possess so many surplus capital goods to offer for export as the United States. But British manufacturers have had longer experience and sometimes stronger groups of representatives in Far Eastern trade who certainly will do their best to increase their share if they can afford to do so. Thus, while potentially the United States will occupy a unique position in supplying capital goods to China, competition will prevail and business transactions will still be partially contingent upon the relative attractiveness of the terms offered by supplying countries.

That the United States will greatly increase her share in supplying producers' non-durable goods to China appears unlikely. China will always find it more economical to import oil from less distant sources such as Netherlands India, Burma and the Persian Gulf while at the same time the tremendous and ever-growing consumption of oil in the United States may prevent her from exporting oil altogether. China is already a cotton-growing country and whatever she lacks in domestic production will probably be more cheaply supplied by other countries such as Brazil, Egypt and India. Certainly the United

States will find it difficult to sell cotton to China without drastically reducing the present price level. So far as coal, rubber and wool are concerned, the United States will not be an important exporting country. Sooner or later China will manufacture her own chemical fertilizers; meanwhile British manufacturers will spare no effort to regain the market they so laboriously built up during prewar years. With regard to dye-stuffs and pharmaceuticals, United States manufacturers should be able to increase their share considerably—at least until such time as German industries recover from the devastation of war. Thus on the whole China will not be a particularly attractive market for producers' non-durable goods from the standpoint of the United States.

Nor will China need to purchase a major portion of her food supplies from the United States. Fundamentally she should be self-sufficient in all her principal foods but since this goal is unlikely to be achieved in the immediate postwar period, she will obtain most food items such as rice, sugar and sea products from neighboring countries in the south seas—namely French Indo-China, Thailand, Burma, Netherlands India, the Philippine Islands and Japan. The United States will be in a position to supply wheat and wheat flour to China but will have to compete with Canada and Australia. The one item in this group which the United States will increasingly export to China as the living conditions of the Chinese people improve will be tobacco and tobacco products. The soil of China has not yet been able to grow tobacco as fine as American species so that the latter will be needed for high-grade cigarettes. In the immediate postwar period the demand for American tobacco will not be very substantial since it will take time for the population to resume the smoking habit; but as living conditions improve, the consumption of American tobacco will grow. The prospect is good that imports of dairy products from the United States will also increase with the betterment of living conditions although this trade will be shared with Australia. In short the war has proved that even in her present stage of agricultural backwardness Free China can be made self-sufficient in the principal foods. Given an orderly process of industrialization and a well-planned system of transportation, it will not be too difficult for China as a whole to derive all her staple foods from domestic sources.

In respect to other consumers' goods, however, United States manufacturers can look forward to an expanding market, especially when China begins to step up her industrialization program. The difference of living standards between the American and Chinese people is so wide at present that the minimum consumption requirements for the average American actually equal the maximum standards of consumption for a very limited few in China. Thus the consumers' goods manufactured for the American masses cannot be bought by the common people of China, while those bought by the masses of China, with a few exceptions, cannot be made economically in the United States at the present level of labor costs. To lower American wages in order to make products cheap enough for foreign consumption would obviously be unwise. Infinitely preferable for all concerned would be to help raise the living standards of all countries so that they too could afford to buy the variety of goods now consumed by the American public. But if industrialization in China progresses rapidly and efficiently, the purchasing power of the population will also increase quickly and the class of people who can buy what the average American buys will greatly expand.

This possibility will mean a far wider demand for high class textile goods, a larger market for paper, leather and photographic goods and a rapidly growing consumption of all those items now listed as sundries. What China has considered sundry articles of trade because of their limited consumption include a number of products widely used in the United States, such as certain building materials, clocks, watches, plastics, cosmetics, sporting goods, floor coverings etc. They can become important imports when the Chinese standard of living begins to approach that of the average American. While a portion of such goods will be made domestically, many more will be imported on account of their increased consumption. American industries engaged in the production of such goods will then enjoy a foreign market which they can consider an extension of their own domestic market and capable of absorbing the substantial volumes of products commensurate with mass production methods.

(5) *In making these estimates we do not assume that they will remain unchanged.* Should China succeed in her program of industrialization she will undoubtedly buy more and more from

abroad as the years go by; for a population of 450,000,000 the estimated total annual postwar imports of only \$487,000,000 must be considered abnormally low.

A year of good or bad crops may influence to a certain degree the character as well as the extent of her purchases since for a considerable time after the war China will remain predominantly agricultural. But fundamentally the means of increasing her purchasing power will lie in industrial development. Whatever friction may occur between Chinese political parties, it is virtually impossible that civil warfare again will retard the process of industrialization. With or without outside help China is determined by all means available to build up her own industrial plant. We have every reason to expect that she will recuperate rapidly from the devastating effects of war and that the purchasing power of the Chinese people will rise steadily as industrialization moves ahead. Given a certain degree of freedom of trade among nations, we may justifiably assume that these estimates represent only the minimum value of China's purchases in the postwar period.

Many other factors also will have a bearing on these postwar purchases. One outstanding factor will pertain to international measures adopted for currency stabilization. The rate of exchange stabilized between the United States and the Chinese dollar or between the Chinese dollar and the British pound sterling, together with the postwar methods of clearing international payments, are questions which, depending on their outcome, may encourage or discourage Chinese imports as a whole or may favor purchases in one country at the expense of another. To avoid confusion and chaos in postwar international trade, adequate measures of currency stabilization must be agreed upon by the United Nations even before the war ends. Although various monetary plans have already been under study and discussion by the governments of the United Nations, only the future course of events will determine how the Chinese dollar is stabilized in relation to major foreign currencies and how such measures will affect China's purchases abroad.

A second factor of importance will be the extent to which foreign credits are available to China and on what terms they are granted. Few countries will be in a position to grant credits to China; apparently she will have to take what she can get. Credits may be granted by foreign governments or private

sources and may take the form of a lump sum, a series of commodity credits or long-term investments. The character of the credits available will certainly influence the extent and the direction of her postwar purchases.

Thirdly, we do not yet know what kind of controls—national or international—will be set up regarding the supply and demand of certain basic commodities. Will international agreements in wheat, cotton, sugar, oil or other commodities be arranged? Will agreement be reached by British and American manufacturers to allocate their markets for the purpose of avoiding competition—as was already the case in prewar years? Will government control of exports through a complicated system of priorities and licenses continue for some time after the war? The answers to all of these questions obviously will be determined by the kind of trade policies the various governments concerned decide to pursue.

Fourthly, the future peace of the world will depend greatly upon the kind of peace terms imposed on the vanquished enemy and the political alignments of the various countries. Neither civil nor international wars ever promote trade and China can only increase her purchases from abroad given a long period of peaceful development.

Lastly and most fundamentally, China's capacity to buy from abroad will be contingent upon her ability to export. Trade is necessarily a two-way traffic and no country can import goods indefinitely without being able to offer goods or services more or less equivalent in return. Directly or indirectly therefore, China's postwar purchases will be governed to a certain extent by the volume and value of her exports. Even when credits are granted they will eventually have to be paid for by means of future exports. Thus, in order that we may answer more fully the question of what China will import, we need also to consider her postwar exports. Immediately after the war she will probably have to import a good deal more than she can export. She will be so economically exhausted that only by buying more capital goods will she be able to increase her productive capacity and thereby her ability to export. Temporarily, the effect of the volume of her exports (relative to imports) on her purchases will not be so pronounced as that of availability of credits and other means of payment.

CHAPTER VI

THE POSTWAR PROSPECTS OF CHINESE EXPORTS

In considering the postwar prospects of Chinese exports several probabilities may safely be taken for granted. Firstly, because the ability of a country to export is governed primarily by the nature of its production and since China is and for some time will remain an essentially agricultural country, she will also remain a supplier of raw materials such as textile fibres, vegetable oils, animal products and ores. By paralyzing the fairly industrialized sections of the country the war has in fact made China even more agricultural than during the last few prewar years. Whatever she can sell abroad will therefore be derived mainly from what she can grow or dig from her soil.

Secondly, we can assume that a considerable decrease will take place in regard to most Chinese postwar exports. The lack of farm labor due to heavy casualties, the gradual deterioration of agricultural production, the necessity of growing crops for local consumption instead of for export as a result of the enemy's blockade and the disruption of transportation facilities during and immediately after the war—all point to a decreased volume of exports. Of course the production of a few items has remained steady in spite of the war but these must be considered exceptional cases. Although certain Chinese products will enjoy a good postwar market the supply may possibly be insufficient to meet the demand. The problem then will be how to keep the market open in spite of reduced quantities of exports so that goodwill can be maintained or built up for future business.

Thirdly, as a direct or indirect result of the war a number of markets for Chinese exports may have disappeared or considerably narrowed by the time the war ends. The market for any particular Chinese product may be killed or weakened through competition, substitutions, government restrictions and tariffs, changes of tastes and fashions, losses of purchasing power on the part of the consuming public etc. The successful

substitution of nylon for silk and the increasing competition of synthetic bristles with hog bristles, for instance, will undoubtedly have their adverse effects on postwar China markets even when transportation conditions again permit the uninterrupted shipment of such exports. The possible elimination of Japan as a major industrial power may materially change the character of Chinese exports to that country while the cessation of hostilities may bring about a considerable decline in the demand for certain strategic materials produced in China. Any import duties or other restrictions imposed by foreign governments will certainly slow down or stop altogether the shipment of various Chinese exports.

Fourthly, although some markets will be adversely affected by the war, others may be capable of great expansion. If China buys more goods from the United States for example, it should stand to reason that the United States will also buy more from China. The probable weakening of Japanese competition in the world market may also give China an opportunity to sell more of those goods whose markets were formerly dominated by Japan. Since trade relations between any two countries are conducted on the basis of mutual benefit, the materials produced in China for export will go only to those countries where they are in demand, but in the long run especially to those where China can sell her goods and thereby secure the means of buying from them.

In order that China may find postwar markets for her products or rather so that she may keep markets open for them, the Chinese Government and people will have to exert every effort toward the improvement of the quality of exportable products, the maintenance of a fair and stable price level and the lowering of the cost of production. The history of China's foreign trade contains only too many instances where markets were lost because of violent price fluctuations, a lack of adequate supply and uniform quality, improper handling and packing, adulteration or other undesirable practices. But as a matter of fact the Chinese Government had already established in prewar years a number of commodity testing bureaus in various ports for the purpose of maintaining a high standard of quality in certain principal exports such as wood oil, cotton, silk, wool, bristles etc. The operation of these bureaus brought satisfactory results and we can assume that governmental in-

spection and testing of exports will continue after the war. The postwar importance of such exports as a means of payment for industrial purchases or as a form of security for credits is too apparent for the Chinese Government to neglect their promotion and encouragement. We are confident therefore that in the postwar period due effort will be made both by the Chinese Government and people to make their products as marketable as possible under existing circumstances.

Finally, because China's natural resources have remained relatively unexplored, new sources of exportable raw materials may always be discovered. In the past China's principal lines of exports have undergone many fluctuations, with some gradually losing their foothold in the world market while new ones were soon discovered to meet the changing needs of the times. Before the first World War, for instance, wood oil was not a significant export, but as its quick-drying qualities became better appreciated by paint and varnish manufacturers its export increased steadily to meet the growing demand, until it finally achieved the top place among China's exports. Possibly a better substitute eventually may be found for wood oil, in which case its export would naturally decline.

China may also possess certain agricultural and mineral products with potentialities for export so far undiscovered. Historically speaking, the discovery of an exportable product in China has always been a haphazard sort of business, an almost accidental find by some foreign missionary or trader without the benefit of organized or systematic research. Given political stability and faced with the increasing necessity of financing imports primarily by means of exports, China probably will pay increased attention to the search for and promotion of new postwar exports.

In the light of these probabilities China's postwar exports may be conveniently divided into four classes which we have designated as Classes A, B, C, and D. Class A will include those Chinese exports whose production has not been seriously affected by the war and whose world market will be capable of postwar expansion. Class B will refer to those exports the production of which has been seriously affected by the war but which will still enjoy a normal postwar market. Class C will include those exports whose production has not been seriously affected by the war but whose postwar market will be poor.

Class D will include those goods which have suffered loss of both production and market because of the war and whose prospects are rather doubtful for the postwar period. Naturally Class A exports will fare the best and Class D the worst, with Classes B and C falling in between. In the following table (in terms of U.S. thousand dollars) an attempt is made to ascertain what major Chinese exports will fall under each heading, to estimate the possible yearly values of various exports on the basis of their average values in the last three prewar years and thereby to arrive at a total figure showing to what extent Chinese exports will serve as a means of payment for postwar purchases.

	<i>1935-1937 Average Export Value</i>	<i>1935-1937 Average U. S. Purchases</i>	<i>Possible Annual Export Value Postwar</i>	<i>Possible U. S. Yearly Purchases Postwar</i>
<i>Class A</i>				
Wood oil	21,067	14,295	30,000	26,000
Tea	9,623	895	15,000	2,000
Sheep wool	5,155	4,041	6,000	5,500
Medicinal plants and sub- stances	3,237	421	3,500	800
Antimony	3,066	346	3,500	500
Goat and kid skin	3,036	2,539	3,500	3,000
Skin mats and rugs	2,125	1,642	2,500	2,000
Leathers	2,093	368	2,100	1,500
Lambskin	1,745	1,696	2,500	2,500
Hides, skins and others	1,310	798	2,000	1,500
Tea oil	942	622	2,000	1,800
Weasel skin	935	933	1,500	1,500
Bamboo	889	70	1,000	200
Human hair and hair nets	764	380	1,000	700
Straw braid	694	37	700	40
Camel wool	671	140	1,000	300
Curios and antiques	321	156	1,000	800
TOTAL	57,673	29,379	78,800	50,640
<i>Class B</i>				
Egg albumen and yolk	5,700	1,692	4,000	2,000
Eggs, frozen or dried	5,633	122	4,500	250
Sesame seeds	5,261	1,967	3,000	2,000
Linen embroidery	4,928	3,196	3,000	2,500
Peanut oil	4,081	2,010	3,000	2,000
Cotton yarn	4,009	....	1,000	....
Peanuts, shelled	3,505	10	2,500	10
Fruits and nuts	3,099	545	2,000	1,000
Cotton piece goods	2,124	....	500	....
Beans	1,918	2	1,000	....
Oilcake and meal	1,883	95	1,000	....

CHINA'S POSTWAR MARKETS

	<i>1935-1937 Average Export Value</i>	<i>1935-1937 Average U. S. Purchases</i>	<i>Possible Annual Export Value Postwar</i>	<i>Possible U. S. Yearly Purchases Postwar</i>
Fresh eggs	1,877	4	1,500	4
Hats, fibre or straw	1,817	578	500	400
Silk pongees	1,816	21	1,000	50
Bran	1,864	....	100	....
Laces and trimmings	1,807	1,220	1,000	800
Wool carpets and rugs	1,792	729	1,500	1,000
Drawn thread work	1,573	1,098	1,000	1,000
Silk embroidery	1,247	77	500	80
Mats	1,197	29	500	30
Cotton seed oil	1,607	1,031	1,200	1,000
Peanuts in shell	1,125	....	600	....
Millet	1,021	20	50	....
Miscellaneous textile goods	1,055	....	500	....
Rapeseed	814	....	300	....
Linseed	807	236	800	300
Chinaware, fine	265	75	200	100
TOTAL	63,825	14,757	36,750	14,524
<i>Class C</i>				
Tin ingots	9,022	158	8,000	7,000
Bristles	7,215	3,398	6,000	3,000
Tungsten ore	5,753	806	4,000	3,000
Ramie	2,031	....	1,000	100
Iron ore	1,234	....	....	....
Salt	856	....	300	....
Nutgalls	597	110	300	100
TOTAL	26,708	4,472	19,600	13,200
<i>Class D</i>				
Silk, raw	12,258	4,182	8,000	4,000
Cotton, raw	8,444	1,504	4,000	2,000
Sausage casings	3,361	929	2,000	1,500
Coal	3,125	....	500	....
Cattle and buffalo hides	2,853	253	1,400	300
Tobacco leaf	2,580	....	500	....
Silk piece goods	1,871	36	1,200	30
Paper	1,813	....	500	....
Figs	1,549	....	500	....
Meats	1,383	51	500	80
Fire work	586	8	100	....
Lard	561	1	250	1
Cotton, fly and waste	1,961	459	1,000	400
Silk waste	1,897	527	1,000	500
Vegetables	5,284	211	2,000	200
TOTAL	49,526	8,161	23,450	9,011
Other merchandise	24,334	1,190	20,000	2,000
GRAND TOTAL	222,066	57,959	178,600	89,375

In order that we may explain the methods by which we arrived at such estimates, the postwar prospects of supply and demand of each major export item will be briefly commented on as follows:

CLASS A

(1) *Wood oil*

Four reasons justify an optimistic estimate regarding the postwar market for wood oil (also called tung oil). Firstly, the world requirements for drying oils have always exceeded the output and will continue to do so for a long time to come since wood oil represents one of the finest drying oils discovered thus far.

Secondly, in terms of performance no real substitute has been found for wood oil, which dries by polymerization rather than oxidation and forms a hard, waterproof film resistant to both acids and alkalis. The most widely used drying oil has been linseed but it is not considered either an alternate or a substitute for wood oil from the standpoint of performance, each serving separate and distinct purposes. Oiticica oil is a fairly good substitute running about 75% efficient but supplies of this oil have been relatively sparse. The chemical treatment of certain oils whereby certain desirable quantities are added has been receiving much attention but no satisfactory substitute for wood oil has been discovered so far as price and performance are concerned.

Thirdly, the cost of producing wood oil in China is unusually low, thereby enabling it to compete favorably with substitutes and making it intrinsically the most economical of all drying oils. The producing districts lie mainly in Free China and have not been seriously affected by the war. The postwar annual production of wood oil should easily reach 150,000 metric tons or more if markets are available. The basis of wood oil production involves a sort of supplementary cultivation; large tung tree plantations do not exist in China. A few tung trees usually grow on the hilly side of every Chinese farm in the producing district; the farmers gather the nuts when they are ripe during leisure hours and sell them to oil millers for whatever they can bring. The fact that wood oil is more or less a by-product and that climatic conditions in certain parts of China are particularly favorable to the growth of tung trees so greatly reduces production costs that cost of transport actually figures as a

more important factor in the price structure than that of production.

This situation held true especially during the war when wood oil had to be shipped by trucks from the interior to Haiphong or Rangoon for export to the United States. In 1940 and 1941 the Chinese Government actually was forced to incur a heavy loss by selling wood oil at around 28¢ per pound in the United States in order to stabilize the price and fulfill the delivery requirements of the \$25,000,000 wood oil credit. No doubt the restoration of normal traffic along the Yangtze following the end of the war will considerably reduce the transportation costs, thereby lowering the price substantially. Provided no great change occurs in the value of United States currency, a price of about 15¢ per pound may be considered fair perhaps and over a period of time should prove satisfactory to both consumers and producers alike.

Fourthly, in view of the huge consumption of wood oil by the United States paint and varnish industry, competition from United States producers of wood oil is not expected to be significant for years to come. The annual production of wood oil in the United States for the last two years amounted only to about 1,562 metric tons, whereas given a stable, reasonable price and a constant supply the annual consumption of wood oil by American industry could easily reach 130,000 metric tons (as estimated by experts of the United States Government). Naturally nearly all of this will have to be furnished by China. Moreover the use of wood oil in other countries can also be considerably expanded when the world situation improves. We may therefore assume that immediately after the war an annual exportation of 90,000 metric tons of wood oil at a price of 15¢ per pound is entirely possible. About 80% of such shipments will probably go to the United States.

(2) *Tea*

Chinese tea production is scattered among innumerable small farms in Central and South China and has not been seriously affected by the war. In prewar years the major tea-producing countries were British India, Ceylon, Netherlands India, Japan, China and Formosa. The major countries consuming Chinese tea were Great Britain and France with respect to black tea, Morocco and Algeria with respect to green tea,

Soviet Russia with respect to brick tea and the United States with respect to relatively more green than black tea.

The continual drain of manpower from farms to war industries and the fighting forces may have adversely affected the production of Japanese tea, or at least will certainly do so when the war reaches its final stages. The war will also have the probable effect of making Japanese tea unpopular in the foreign market for a considerable period. Cultivated on large plantations in Netherlands India, tea production there has been gravely disrupted by the war so that time will be needed to recruit labor and resume production.

Meanwhile the British Empire has remained the world's leading tea consumer although indications are that the consumption of tea in the United States has been growing. In 1941 for instance the United States imported 107,593,723 pounds of tea—an increase of 7,017,084 pounds over 1940 imports in spite of the extreme hazards of wartime shipping. Due to growing world consumption and a possible decline in tea production in Netherlands India and Japan, Chinese tea has a good prospect for increasing sales in the United States and elsewhere. The return of Formosa will also increase the available supply of tea for export. (This increase will be taken into consideration in Chapter VII.)

(3) *Sheep and camel wool*

The chief producing districts for these products are Inner Mongolia, the northwestern provinces such as Kansu, Suiyuan, Shansi, Shensi and a number of provinces in Central China. Most Chinese sheep wool is particularly suitable for and chiefly used in making carpets and rugs, about 75% of which were shipped to the United States in prewar years. Following the occupation of coastal provinces in North and Central China, the enemy has been collecting sheep wool in the occupied areas for his own use but the most important producing districts are still beyond his grasp. A certain quantity of wool has been collected by the Chinese Government and delivered to Soviet Russia in accordance with the terms of a barter agreement. But owing to the difficulty of transportation considerable quantities of wool have been left to accumulate in the northwestern provinces which will be available for export once the normal

transportation route to the chief exporting port of Tientsin is reopened. The demand for carpets and rugs in the United States has also been mounting on account of war restrictions imposed on their production. The use of camel wool too has been growing because of its warmth. The export of sheep and camel wool should therefore show some increase over the pre-war level.

(4) *Medicinal plants and substances*

Most Chinese medicinal plants and substances are found in the interior. In recent years their qualities and uses have become more fully appreciated by the medical world in general through scientific applications of them. They are likely to find a growing demand postwar as scientists increase their knowledge of their potency and usefulness.

(5) *Antimony*

As a leading producer of antimony China contributed about 50% of the world supply in the last three prewar years. The producing districts are located mainly in the province of Hunan—nearly all in Free China. As a metal, antimony is used in such alloys as antimonial lead, babbitt metal and type metal, which find application in the manufacture of storage batteries, printing equipment and anti-friction bearing appliances. As an oxide it is used in paints and enamelware while antimony salts are used by the match industry and in various chemical processes. The military uses of antimony include shrapnel balls, bullet cores for rifles and artillery ammunition. Under a credit arrangement established by the Export-Import Bank in the early part of 1941, the Chinese Government pledged itself to deliver certain quantities of antimony along with other strategic metals to the United States over a period of years. Meanwhile, however, the United States has been producing antimony for her own use and obtaining even more from Mexico and Bolivia than from China. While China may find it difficult to recover her former position as a major supplier of antimony to this country, she will still be able to retain her market in European and Asiatic countries since none of these is known to possess a sufficient domestic supply. Antimony is more a peacetime than a wartime metal, so that the end of the

war will lead to its wider use in various peacetime industries. The postwar export of Chinese antimony should therefore show some increase over the prewar level.

(6) *Goat and kid skins, weasel skins, other skins and furs, skin mats and rugs and lambskins*

For years the United States has been the most important buyer of Chinese skins and furs. According to present indications the end of the war will see a general increase in the buying power of the American people for consumers' goods, so that we have every reason to expect a sustained demand in the United States for skins and furs of various kinds.

For lack of an export market during wartime many wild animals in China such as the weasel, racoon, marmot and fox have been allowed to multiply; a good harvest of such furs and skins probably can be reaped therefore when the war is over. With regard to domestic animals, large quantities of goat skins, sheep skins and rabbit skins are normally produced in Free China which will also be available for export once transportation conditions return to normal. Quite possibly therefore, postwar exports of such skins and furs as were mentioned will exceed the prewar level by a substantial margin.

(7) *Feathers, duck and goose*

In prewar years duck and goose feathers were used mainly as bedding and padding materials but the war has brought about a new use in the making of clothing for aviators and of soldiers' apparel for Arctic climates because of their lightness, warmth and remarkable buoyancy in water.

The shipment of feathers from China to America temporarily ceased after the Pearl Harbor attack. In order to obtain supplies for military use the United States Government has been buying feathers from the Chinese Government with air transportation provided by the former. While the end of the war will curtail their use in the military field, their value as a bedding material will not be lessened and their new military uses will certainly be applied to some extent to civilian wear. European countries will also resume buying feathers after the war though probably in reduced quantities. Chinese exportation of feathers will therefore run around the prewar level.

(8) *Tea oil*

Tea oil is obtained from the seed of the tea plant, the kernels of which contain about 60% oil, and is used for edible and pharmaceutical purposes. The production of tea oil along with tea itself has not been seriously affected by the war and the United States, the most important prewar buyer of tea oil, will probably import it in increasing quantities in the postwar period.

(9) *Bamboo and straw braid*

Bamboo grows extensively in Central and South China and war has had little effect upon its production. Generally it is used as a material for building huts and low priced houses and also for tropical furniture and implements. The postwar demand for bamboo should be fairly high in tropical countries where the population needs cheap building materials. Exports of straw braid can also be expected to remain fairly constant, as presumably there always will be a demand for cheap summer hats made of this product.

(10) *Human hair and hair nets*

The hardships of war probably have had the effect of discouraging bobbed hair among Far Eastern peoples, so that abundant quantities of long hair for making hair nets should not be lacking in the postwar period. The United States used to be the principal buyer and unless American women's fashions change drastically, she will probably increase her purchases to satisfy an accumulated postwar demand.

(11) *Curios and antiques*

The war has cut off the normal flow of Chinese curios and antiques to the United States and other countries, so that the demand will be fairly strong when the war ends. Quite a number of Chinese collections must have been broken up because of the war and most of these eventually will find their way to some foreign market in the postwar period. Antiques have also been discovered in the interior and will be available for export.

CLASS B

(1) *Egg products*

For years egg products were counted among China's most important exports. Great Britain was the leading buyer, espe-

cially of moist and fresh eggs, while Germany also took a fairly substantial quantity in prewar years. Because of high import duties only dried egg products could be shipped to the United States in large quantities. The principal ports of export were Shanghai, Tientsin and Tsingtao. On account of their perishable nature and for lack of refrigeration facilities in the interior, most of the egg products available for export were produced in districts surrounding the exporting ports or at places nearby.

Like wood oil, egg products are also a sort of by-product of the Chinese farm. Large-scale chicken farms are non-existent and the raising of chickens is seldom considered a separate and independent business. Exports formerly represented only a very small fraction of China's total egg production; certainly a great deal more could have been exported had the interior possessed more adequate transportation facilities for their shipment. This same lack of transportation immediately after the war will hamper the exportation of egg products; in addition the poultry stock in Chinese farms probably will have been considerably reduced.

So far as the postwar market for Chinese eggs is concerned, there are few prospects of shipping egg products to the United States in the face of her high import duty and her substantial increase in domestic production during the war. But Great Britain and other European countries may continue to buy egg products from China; they will need to import at least the same quantities of food proteins, of which Chinese egg products could serve as one of the most economical sources. The industrial uses of egg products will also be further developed in the postwar period.

(2) *Sesame seeds, peanuts, peanut oil, linseeds, beans and cottonseed oil*

The most important producing districts of sesame seeds, beans and linseeds are Honan, Hopeh and Shantung provinces in North China, and Kiangsu, Anhwei and Hupeh provinces in Central China. All these provinces have been partially occupied by the enemy and a serious famine has set in both in Honan and Anhwei provinces. No doubt agricultural production as a whole has seriously deteriorated in such areas.

Peanuts and peanut oil are produced in Shantung and the neighboring provinces. The lack of an export market during the

war, coupled with the measures taken by the enemy to discourage peanut-growing in order to increase cotton cultivation, has naturally resulted in a considerable decline in the production of these commodities, which is unlikely to recover immediately after the war. Furthermore the likelihood of a serious food shortage in all the coastal provinces will also prevent any large-scale exports of edible seeds and oils, which will be needed to satisfy home consumption first. In prewar years sesame seeds, peanut oil and cottonseed oil were shipped mainly to the United States while peanuts went mostly to a number of European countries including the Netherlands, Germany, Great Britain and France. Beans were exported principally to Japan, India and the south sea islands and linseeds to Japan and Australia. The demand for these products will continue in the postwar period and China should not find it too difficult to increase their exportation once agricultural production has sufficiently recovered.

(3) *Linen embroidery, silk embroidery, lace and trimmings and drawn thread work*

The producing districts for cross-stitch linen embroidery, lace and trimmings and drawn thread work were located chiefly in Kwangtung province near Swatow and also in Kiangsi and Chekiang provinces. This work was usually done by women in the households using materials and patterns distributed by dealers. Most of such linen materials were imported from Great Britain and to a lesser extent from Belgium and other countries. Their production depended upon the availability of materials, the functioning of a distribution system and the presence of a skilled working population. The war has not only cut off the source of materials and the export market, thereby halting production altogether, but also has dispersed and partially destroyed the skilled working population in such areas. Once the war is over, working materials can easily be imported again but skilled labor will not be so readily available.

The same situation will prevail in regard to the making of silk embroidery. Increasing Chinese industrialization in postwar years will draw more labor into factories; such handicraft goods are unlikely to be produced as cheaply as prewar. With the advancement of the educational level, however, perhaps more artistic and original work will be produced. The United States

was the most important buyer of Chinese linen goods in prewar years, taking about 70% of total exports along this line. Since they comprise an item of consumers' goods, they should continue to find a good market in the United States in spite of limited supplies.

(4) *Cotton yarn, cotton piece goods, silk pongees and other textile goods*

We can safely assume that exports of these goods, especially cotton yarn and cotton piece goods, will decline considerably since China will urgently need to import such goods herself. Not until she possesses at least as many spindles in the postwar as in the prewar years will she be able to export any appreciable volume along this line although a strong demand for such goods is likely from Netherlands India, French Indo-China and other areas in the southern Pacific. Silk pongees were produced largely for export and their production must have been greatly curtailed during the war.

(5) *Fruits and nuts*

Certain Chinese fruits and nuts such as chestnuts, walnuts, lichees and others enjoy promising export possibilities and in fact were already exported in sizable quantities before the war. The general deterioration of agricultural production, however, will also affect the supply of fruits and nuts available for export, most of them being produced in occupied areas.

(6) *Wool carpets and rugs*

Chinese hand-woven carpets and rugs were produced mainly in Peiping and Tientsin and exported principally to the United States and Great Britain. While raw materials will not be difficult to obtain, the making of carpets and rugs will face the same postwar problem as linen embroidery—that is, the partial loss of a skilled working population. Since the war cut off all channels of export, carpet-making has ceased as an industry in operation and most of the workers have returned to the farms or changed their occupation. Carpet-weaving is so extremely tedious and laborious that recruiting cheap labor may be difficult, especially since workers will be increasingly drawn to factories by industrialization. The supply of Chinese carpets and rugs will therefore be more limited in the postwar period.

(7) *Bran, millet, rapeseed, oilcake and meal*

In prewar years all these items were shipped principally to Japan for food and agricultural purposes and she will probably continue to import such products. But since the coastal provinces of China will face a serious shortage of farm products, few of these items are likely to be available for export.

(8) *Mats, hats, fibre and straw*

Most of the mats and mattings exported prewar were produced in Kwangtung province, now partially occupied by the enemy and swept by a serious famine. Postwar production will be hampered by declines both in fibre crops and in the working population. The buntal fibres used to make hats and imported from the Philippines probably will not be available immediately after the war; their production has been drastically cut following the enemy's occupation of the Philippines. The making of hats from buntal fibres is also a handicraft requiring skilled labor and again it is questionable whether such a skilled working population will still remain after the war.

(9) *Chinaware*

The producing districts for Chinese porcelainware are located in the northern part of Kiangsi province, for several years a fighting zone for guerrillas. Production facilities have been partially destroyed and the working population has also been scattered. Postwar production cannot be expected to reach the prewar level within a short period.

CLASS C

(1) *Tin*

The producing districts for Chinese tin are found in Yunnan province and to a lesser extent in Kwangsi, with the former contributing by far the major portion. Total production varied from year to year but in the last several years averaged around 12,000 metric tons. At the beginning the war affected neither exports nor production since it was produced in the interior and usually shipped by railway to Haiphong in French Indo-China for export.

In the early part of 1940 a credit of \$20,000,000 for the purchase of supplies in the United States was arranged by the

Export-Import Bank; the Chinese Government pledged itself to deliver whenever possible certain quantities of tin for sale in the United States over a period of several years. In the middle of 1940, however, Haiphong fell to the enemy and the tin had to be shipped to Rangoon via the Burma Road, resulting in a much smaller volume of exports. After the fall of Burma almost all supplies to and from China had to be transported by air. By making use of the return trips from China, tin and other strategic materials were shipped by air to India and thence to the United States. The quantity of shipments subsequently was further reduced but some Chinese tin has continued to be exported to America in fulfillment of the credit agreement.

Meanwhile the production of Chinese tin has continued though on a reduced scale. About \$1,500,000 worth of tin-mining equipment was purchased with the proceeds of the tin credit but only a few items were shipped to China prior to the fall of Rangoon, with the rest awaiting shipment as soon as transportation permits. With the installation of new mining equipment the production of Chinese tin can be expected to increase appreciably over its prewar level.

The future prospects of Chinese tin are naturally linked with those of world tin generally since China is far from the most important producing country. British Malaya for instance normally contributes about 36% of the world supply while Netherlands India accounted for 20%. The producing capacity of Bolivian mines, which contributed about 13% of world production before the war, has been considerably expanded.

Various experiments to reduce tin consumption have been conducted with considerable success. Tin's most important use is found in the manufacture of tin plate and manufacturers have developed both an electrical process of coating steel with tin which requires only one-third or less the weight of tin coating common to the conventional hot-dipped tin plate, and a chemical process of treating steel which altogether eliminates the use of tin coating. Tin only becomes a critical metal in time of war because of modern armies' need for huge quantities of tinned containers. Thus the end of the war will probably bring about substantial additions to the world tin supply as well as a decline in tin consumption, thereby causing a serious break in the price (now at a ceiling of 50¢ per pound). From 1931 to 1941 tin production was subject to restrictions by

virtue of an international pooling arrangement. An international committee including representatives from British Malaya, Bolivia, Netherlands India and Nigeria fixed percentage production quotas from time to time and employed various devices to absorb surplus stocks and stabilize prices. Probably similar arrangements will be made postwar; in this case China may find it impossible to realize more from her sales of tin than in the last three prewar years, even though the total quantity of her exports may increase.

(2) *Bristles*

Hog bristles are used for making brushes of all kinds but chiefly paint and tooth brushes. The bristles of hogs raised in certain Chinese provinces happen to possess the particular lengths and qualities most desirable for making brushes and for many years they have been an important export. During the war years from 1937 to 1940 the export of bristles showed a decline in volume because transportation in the producing districts was disrupted by the war, but at the same time a considerable increase in value because of the rapid rise in the price. The bristles produced in the interior were collected by an agency of the Chinese Government and in 1940 were exported by way of Haiphong and Hongkong. In 1941 some were shipped via the Burma Road to Rangoon for export; after the fall of Rangoon in 1942 an agreement was reached between Chinese and United States Government agencies whereby bristles were sold and shipped to the United States by air for making brushes for military use.

The export prospects of bristles depend upon two major factors. The first is the volume of their postwar production in China. Since most bristles are produced in Free China, their production has not been seriously affected by the war. Some fear has been expressed that as the postwar living conditions of Chinese farmers improve, hogs will be eaten when young before they are able to grow the long and strong bristles desired. Despite this long-run possibility however, many years obviously will have to elapse before the average Chinese farmer can afford to consume young hogs.

The second factor pertains to the development of substitutes, which will certainly constitute the most serious threat to the use of Chinese bristles. Synthetic bristles are capable of such

constant improvement that eventually they will possess the same or even finer qualities than those characteristic of natural bristles. But so long as the price of Chinese bristles does not run too much higher than that of the synthetic, the use of both may prove complementary. The high wartime price of Chinese bristles will scarcely hold up postwar; because of the increasing use of substitutes some decline in their export may be expected as compared with the prewar level.

(3) *Tungsten*

The importance of tungsten to the manufacture of metal-cutting steel and of armor is well known. Only relatively few countries produce tungsten, among which are China, Burma, Bolivia, Argentina, Peru, Australia, Thailand and the United States, with China contributing about 40% of world production during the last ten prewar years. Her main deposits of tungsten are found in the southern part of Kiangsi and in Hunan, Kwangtung, Kwangsi and Yunnan provinces—all of which are in Free China. In the last few prewar years China's exports of tungsten ore, which took the form of an oxide known as wolfram, increased considerably due to intensified preparations for war throughout the world.

The outbreak of war in 1937 created many difficulties in shipping the ore from the producing districts to coastal ports and its export was consequently reduced although demand from abroad continued strong. In fact it was one of the few Chinese exports shipped via the Burma Road to Rangoon for export. In the latter part of 1940 a United States Government agency arranged to purchase certain quantities of tungsten ore from China by granting a credit of \$25,000,000 from the Export-Import Bank with delivery to be made over a period of years. Following the fall of Burma in the early part of 1942, arrangements were made to deliver tungsten ore to the United States by air.

The end of the war will lessen substantially the present urgent demand for this metal although it will of course continue to be used extensively as an essential material in the manufacture of tool steel. The growing popularity of die stamping, which requires a die of extreme hardness, will favor the use of tungsten as an ingredient in die alloys, while the rapid development of electronics and the expanding use of electric

lights will also increase the demand for tungsten in various countries. But on the whole the consumption of tungsten will probably fall below the level of the last three prewar years and as a leading producer of tungsten ore China will therefore have to export less.

(4) *Ramie, iron ores and salt*

Iron ores and salt were exported almost exclusively to Japan in prewar years while ramie was sold mainly to both Japan and Germany. After China has developed her own steel mills however, her exports of iron ore can be expected to cease altogether. The partial or total destruction of Japan's industrial facilities will also reduce materially Chinese shipments of salt used for industrial purposes. For the same reason exports of ramie to Germany and Japan will be adversely affected.

(5) *Nutgalls*

Nutgalls are produced in the interior of China and consequently their production has not been seriously affected by the war. With regard to their use as tanning and dyeing materials however, substitutes such as quebracho, mangrove extract, mimosa extract have been widely employed. A substantial quantity of nutgalls was shipped to European countries and Japan during the prewar years but their purchases after the war will probably not reach the former level. To compete successfully with substitutes, the price of nutgalls probably will have to be greatly reduced.

CLASS D

(1) *Silk and silk piece goods*

The postwar prospects of Chinese silk in the world market depend upon a variety of factors. (a) *The future of the silk market in the United States.* The United States was for years the largest consumer of silk in the world, taking about 80% of the total output and using it principally in the manufacture of hosiery. About 80% to 90% of these silk imports came from Japan and anywhere from 10% to 15% from China. Not only during the war but previous to it, the use of silk has been seriously threatened by two formidable substitutes—rayon and nylon. The fundamental weakness of silk in competition with

these two substitutes lies in the fact that the cost of producing raw silk must necessarily be higher than that of making rayon or nylon on account of the enormous amount of human labor involved. The former can only be produced more cheaply by reducing the cost of labor while the price of the latter can be lowered through scientific research and mass production. Both rayon and nylon already were making steady headway as substitutes for silk in prewar years. The outbreak of war between the United States and Japan cut off the major source of silk supply and necessitated the requisitioning of all available silk stocks for military use exclusively; thus additional impetus was given to the use of rayon and other fabrics.

Commercially speaking, there is no good reason why nylon and rayon hosiery should not be used more extensively if they can duplicate successfully all the qualities of silk and at a much lower cost. Psychologically speaking, silk may have already lost considerable appeal because of its close association in people's minds with the enemy. While we must not conclude that silk soon will be entirely eliminated from the postwar United States market, we can expect that her postwar consumption of silk will run a good deal lower. Most likely silk will be used less for hosiery and more for silk piece goods such as neckties and dresses in order to cater to the diverse clothing tastes of the public. In this case Chinese silk may be placed in a relatively better position than Japanese, for the size and evenness of the former is in most cases more suitable for making such goods.

(b) *The future of the silk market in other countries.* France used to be the second largest buyer of Chinese silk but can hardly be expected to purchase as much as in the last few prewar years. French Indo-China so far has been relatively undisturbed by the war and will probably continue to buy silk from China at the prewar level. Burma used to be the largest buyer of Chinese yellow silk but the battles now being waged there must have already had a telling effect on the purchasing power of the Burmese population. British India has enjoyed relative prosperity under the stimulus of war production and can be expected to buy more silk from China once the war is over. With regard to other countries, the demand for Chinese silk will decline in most cases.

(c) *The postwar production of silk in China and Japan.* Sericulture is one of Japan's most important industries. In spite

of the fact that the war has halted all her silk exports, silk production has continued on a reduced scale. The acreage of mulberry trees, the leaves of which provide food for the silkworms, has been considerably curtailed, however, in favor of more urgent crops. After the war Japan will certainly continue to produce and export silk since from it she derives one of her most important sources of foreign balances with which to buy food and raw materials from abroad. Inasmuch as time will be needed to increase the planting acreage of mulberry trees, her postwar production will run far below the prewar level. China will also continue to export silk after the war but the situation in regard to the acreage of mulberry trees in Japan also holds true for China; Chinese farmers have cut down a substantial number of mulberry trees in order to grow more rice, wheat or other cereals in their stead. Thus China hardly will be able to export silk in quantities comparable to prewar levels.

Taking these three factors into consideration, we are obliged to visualize greatly shrunken markets for silk in the postwar period. China may still be able to retain her position relative to Japan but the absolute quantity of the silk she can export will certainly show a considerable decline as compared with the prewar level.

(2) *Cotton*

For three reasons we can assume that a great deal less Chinese cotton than the prewar average will be exported postwar. Firstly, the war has seriously affected cotton-milling areas such as Germany, England, France, Italy and possibly Japan, but with the exception of China and Russia it has not spread to the main cotton-growing regions such as the United States, India, Egypt and Brazil. We should note here, however, that such factories in liberated France and Belgium have been discovered relatively undamaged. The likelihood of a surplus of cotton over the amount which can be consumed by mills may result in a situation where the price of cotton in all its varieties will be relatively low. If it can be obtained elsewhere at a cheaper price, then the incentive for purchasing Chinese cotton obviously will be depressed.

Secondly, most of the Chinese cotton exported prewar was consumed by mills in Japan. If these mills escape destruction, a considerable proportion of their spindles may be removed

to China as an item of reparation. In either case Japan's capacity to import Chinese cotton will be greatly impaired.

Thirdly, in spite of the enemy's efforts to encourage cotton production in occupied areas, China's total production apparently has not increased. Even though the number of Chinese spindles will be further reduced by the time the war ends, whatever can not be taken by her own cotton mills can be consumed by native spinning wheels in order to meet the desperate need for clothing during and after the war.

The difficulty of shipping Chinese cotton from the interior to coastal ports in view of the probable disruption of transportation immediately after the war will also make the cost of exporting Chinese cotton prohibitive. While a few varieties will remain in demand by foreign manufacturers because of their special qualities in strength and color, the bulk will have to be used to take care of domestic needs.

(3) *Vegetables, pigs, meats and lard*

In prewar years by far the greater portion of such exports were shipped to Hongkong for local consumption. The resumption of such exports on a prewar scale will be contingent upon the presence of as large a population in postwar Hongkong as in prewar days (which is rather unlikely). Even should Hongkong be as densely populated, the deterioration of China's agricultural production during the present war would not make such shipments feasible.

The future of Hongkong is uncertain—it may escape further destruction or renewed warfare may be visited upon it. It may be returned to China when the war ends or it may retain its old status as a British colony. But in all probability the very fact that Hongkong must obtain all its food supplies and other materials from abroad will militate against its retaining a very large population once peace and political stability return in China.

(4) *Sausage casings*

Most prewar sausage casings (made from pigs' intestines) were exported to European countries such as Germany, France and the Netherlands. These casings were collected in coastal provinces in North and Central China, all now within the occupied area. Postwar demands for sausage casings from Euro-

pean countries can not be expected to reach the prewar level nor will China be able to supply any considerable quantity in view of the prospect of a serious food shortage in the coastal provinces immediately after the war. Exports of such products, including both pig and sheep casings, will therefore be greatly curtailed.

(5) *Cattle and buffalo hides*

Tremendous numbers of cows and buffalos have been killed in the occupied areas during the war, while famine has also reduced the size of cattle stocks in North and South China. Cows and buffalos remaining in the hands of farmers will be employed to till the land, so that some time will elapse before stocks multiply sufficiently to furnish a surplus of cattle for killing. Whatever hides can be produced will be used by China herself once modern tanneries are established. Furthermore the demand for hides from abroad will decrease when the war is over, for it alone has created the extraordinary demand for hides and leather for military goods. During normal times the United States, India, Argentina, Russia and other countries produce more and better quality hides, so that the position of Chinese hides in the world market was relatively weak. We therefore may assume that exports of Chinese hides in the postwar period will run far below the prewar level.

(6) *Coal*

Chinese coal was exported principally to Japan and to a lesser extent to Hongkong and Korea. The partial or total destruction of the industrial and shipping facilities of Japan during the war will automatically reduce her consumption of coal, while a decline in the population of Hongkong will similarly decrease her fuel requirements. China's own consumption will increase steadily by virtue of her industrialization program, so that for some time after the end of the war little coal will be available for export.

(7) *Tobacco leaf, paper and fireworks*

Chinese tobacco leaf was exported principally to the Kwantung Leased Territory in Manchuria, which will be returned to China after the war, and also to Hongkong, Japan and Korea. Changed postwar conditions will probably not favor such ship-

ments. The production of Chinese tobacco leaf has also declined during the war. Since Chinese paper, including paper joss for religious ceremonies, and Chinese fireworks were exported mainly for Chinese in the South Pacific, such shipments are likely to decline because of the prospective impoverishment of these consumers during the postwar period.

* * *

Thus the total value of postwar Chinese exports may be estimated at around \$178,600,000 a year. Of course for the first year after the war a much lower figure may be assumed while for the two or three years following, the total value of exports may exceed the estimated figure. A year of poor crops may further reduce the quantity of available exports and on the other hand a year of exceptionally good crops may boost the export figure considerably. After making all such allowances we may safely assume that the total value of Chinese exports during the first three postwar years will not reach the level of the last three prewar years, provided, however, the price level does not change. Should the price level of Chinese exports increase by 30% for instance, their total value during this period would amount to about \$232,000,000 a year. Since the total value of Chinese imports during the same period has already been estimated at around \$487,110,000, the excess of imports over exports would figure at approximately \$255,110,000 a year.

These estimates of Chinese exports concern only the immediate postwar period—that is, the three or four years following the cessation of hostilities. Given a degree of political stability, a certain freedom of trade and a well-coordinated program of industrialization, China's export trade will expand rapidly as years go by, not only equalling but exceeding the prewar level by several times. As we can see from the above survey, most Chinese exports will continue to enjoy foreign markets during the postwar years so long as they retain their desirable qualities and can be exported at a relatively low price.

An improved water control system, a considerable increase of transportation facilities in the interior and a few good crop years will greatly augment the exportable supply of Chinese products since most of these are agricultural. The possibility

of the partial elimination of Japan as an industrial power in the Far East may also present China with a golden opportunity for marketing her manufactured goods in South Pacific regions such as French Indo-China, British Malaya, Netherlands India, Thailand and elsewhere. Even before the war various Chinese industries were beginning to push their sales in these regions and certainly there will be room for postwar expansion providing Japanese competition is weakened. Furthermore as production techniques improve in conjunction with her industrialization program, new and better products can be manufactured and exported and new markets cultivated. Unless trade barriers once again are raised up in the form of prohibitive tariff walls, currency wars, restricted import quotas etc., a quick recovery of China's export trade can be expected.

But we must not suppose that an increase of Chinese exports will necessarily bring about a decrease in the excess of imports over exports. So vast and populous a nation as China has a tremendous potential capacity for absorbing goods either for production or consumption purposes; any increase in her productive power will only stimulate her appetite for more and more goods instead of satiating it. The building of a single railway for instance would furnish a kind of starting point for building several more, while the establishment of a power plant in any particular locality would make possible the building of many factories in that area because of the availability of electric power.

By virtue of a program of industrialization China will produce more, export more and then purchase more in order to quicken the process itself. Meanwhile she will also purchase more in order to raise her general living standards and increase further her productive power. After so many years of devastating warfare she will have to start almost literally from the bottom up. A vacuum so devoid of capital goods and a living standard so inconceivably low will certainly entail long and arduous years of effort before she reaches the point where she can export as much as she imports. For a number of years imports will always exceed exports although the volume of both will constantly be on the rise. So long as that excess is caused primarily by imports of capital goods and rendered possible by a steady stream of foreign credits and investments and/or by reparations from the enemy, it should not indeed be

welcome; it will help to speed up the whole process of industrialization and eventually expedite the balancing of China's international payments. To what extent and how long China's imports can exceed her exports without financial ruin are questions which depend not only upon the trend of her exports but also upon the availability of other means of payment for her postwar purchases. (See Chapter VIII.)

CHAPTER VII

THE POSTWAR TRADE OF MANCHURIA AND FORMOSA

A. MANCHURIA

On September 18, 1931 Japanese forces unprovokedly attacked the Chinese garrison stationed near Mukden. While China vainly appealed to the League of Nations for help, the enemy calmly carried out his well-prepared plans to occupy the four northeastern provinces known as Manchuria. In only a few months' time almost the whole of Manchuria was lost to China.

Historically speaking, the seizure of Manchuria by Japan in a sense marked the beginning of the Second World War. Had Japan been promptly and effectively halted in her first act of aggression, the other Axis powers might not have dared the subsequent acts of aggression which made a world war inevitable. Fourteen years ago, however, when Japan was just embarking upon her mad adventure, few people realized that her sneak attack at Mukden would serve as a pattern of warfare to be repeated at Pearl Harbor on December 7, 1941.

Neither did people realize how much the enemy had gained by seizing Manchuria. Manchuria covers a territory of 503,000 square miles, which is about one-sixth of the area of the United States, and possesses a population of 38,000,000 or about one-fourth that of the United States and one-half that of Japan proper. It is a land rich in mineral deposits, great virgin forests and abundant agricultural produce. Its coal reserves are estimated at 11,437,000,000 metric tons, its iron reserves at 1,514,000,000 tons and its oil shale deposits at about 7,628,000,000 tons. Its forest lands comprise an area about 1.4 times the total area of Japan proper, with the volume of standing trees estimated at 3,719,000,000 cubic meters. It produces 60% of the world output of soybeans, ranging between 3,800,000 metric tons and 5,300,000 metric tons in the last dozen years. It also produces in abundance other agricultural staples such as kaoliang, millet, wheat, peanuts, perilla seeds and maize. It raises a great quantity of livestock, among which horses, hogs, sheep, goats and camels are most important. Manchuria is in short a land of

vast resources whose seizure the enemy had long considered a logical stepping stone toward world conquest.

During the fourteen years Manchuria has been under the yoke of Japan a great many changes have taken place and more will occur as the war draws to an end. What and how much Manchuria will import and export after the war may therefore differ from the nature of her trade before and during her occupation by the enemy. What has happened to Manchuria following her seizure by Japan? While facts and figures available are incomplete and often contradictory because of enemy secrecy, certain general observations can still be made through a process of logical deduction:

(1) *Japanese and Korean population in Manchuria has undergone rapid growth.* According to the Japan-Manchoukuo Year Book of 1940 (an enemy publication) the composition of population in Manchuria, including the Kwantung Leased Territory, from 1932 to 1937 was as follows (in thousands):

Manchuria Excluding Kwantung Leased Territory

<i>Year</i>	<i>Chinese</i>	<i>Japanese</i>	<i>Korean</i>	<i>Total Including Others</i>
1932	28,903	566*	...	29,606
1933	30,191	39	552	30,880
1934	32,052	76	663	32,869
1935	33,258	128	743	34,201
1936	34,218	190	864	35,338
1937	35,534	418†	931	36,950

* Including Koreans.

† Including Japanese residents of South Manchuria Railway Zone.

Kwantung Leased Territory

<i>Year</i>	<i>Chinese</i>	<i>Japanese</i>	<i>Korean</i>	<i>Total Including Others</i>
1932	1049	243	30	1,324
1933	1098	280	30	1,409
1934	1150	315	31	1,498
1935	1234	350	35	1,621
1936	1274	370	35	1,681
1937	1010	175‡	4	1,190

Manchuria including Kwantung Leased Territory

<i>Total</i>	<i>Chinese</i>	<i>Japanese</i>	<i>Koreans</i>	<i>Total Including Others</i>
1932	29,952	809*	30	30,930
1933	31,289	319	582	32,288
1934	33,202	391	694	34,367
1935	34,492	478	778	35,822
1936	35,492	560	899	37,019
1937	36,544	593	935	38,140

*Including Koreans

†Including Japanese residents of S.M.R. Zone

‡ Excluding Japanese residents of S.M.R. Zone

During the five years from 1933 to 1937 the Japanese population in Manchuria apparently almost doubled, increasing from 300,000 in 1933 to about 600,000 in 1937. At the same time the Korean population in Manchuria also increased but the Japanese influx was different in nature from that of Koreans. While the majority of the latter who migrated to Manchuria did so under compulsion by Japanese authorities and to till the land as rice paddy farmers, the Japanese went there to engage in commerce and industry and in short to act as a sort of ruling class for exploiting the resources of the conquered territory. According to the Japan-Manchoukuo Year Book of 1940 the occupations of the Japanese and Korean populations in Manchuria as of December 1937 were classified as follows:

<i>Occupation</i>	<i>Japanese</i>	<i>Koreans</i>
Agriculture and forestry	2.4%	56.5%
Aquatic	0	.6
Mining	6.0	.6
Manufacturing industries	9.5	3.2
Commerce	18.4	4.3
Transportation	6.9	.6
Official and free occupations	18.7	4.0
Domestic workers	5.3	6.3
Other occupations	9.8	5.9
Without occupation	23.0	17.4

The Japanese government made many attempts to bring in more Japanese agricultural settlers by giving them good land and monetary assistance but with little success. The path of least resistance was followed and the Japanese entered Manchuria not as settlers but as officials, businessmen, technicians or foremen. With the Manchoukuo Government employing Japanese talents almost exclusively and with Japanese monopolies rapidly being formed in the occupied areas, small wonder that increasing numbers of Japanese flocked to Manchuria. Although we do not know how many have entered since 1937, that the rate of increase has been high can at least be partially proved by the rapidly mounting imports of fishery and sea products into Manchuria from 1934 to 1939, the figures for which are as follows (in U.S. thousand dollars):

1934	2,697	1937	5,926
1935	2,475	1938	6,454
1936	3,463	1939	15,993

Since the habitual Japanese diet contains a substantial portion of fish and sea products, the presence of a Japanese population in any given locality can usually be detected by figures indicating a large consumption of such foods. The fact that from 1937 to 1939 imports of fish and sea products almost trebled points unmistakably to the conclusion that relatively large numbers of Japanese entered Manchuria during this period. Probably even more migrated there after 1939. During the second half of 1943 alone about 3,000,000 Japanese reportedly were admitted. While we cannot vouch for the figure, possibly the Japanese in Manchuria may now have increased to five or six millions.

The presence of such a large Japanese population in Manchuria will create a number of problems during as well as after the war. Firstly, it may mean that the Japanese will fight a last-ditch battle for Manchuria, in which case industrial facilities would be subject to large-scale destruction. For more than ten years after occupation Japan has been trying desperately to industrialize Manchuria in such a way as to further her designs for future conquest. Secondly, it may mean that after the war a large Japanese population will be permanently settled in Manchuria. Most of the Japanese who entered before and during the war had no intention of settling permanently but went rather in the same spirit as the British went to India for several centuries—to rule and to exploit. A substantial proportion of these Japanese will undoubtedly survive the war but will be deprived of their lucrative positions. Providing they are unable to return to Japan, they may gradually settle down as technicians, small merchants, laborers or farmers. Thus their permanent settlement in Manchuria would not be a result of military occupation but a logical consequence of military defeat. Thirdly, the existence of a Japanese minority in Manchuria may provide a link between Japan and Manchuria which aside from its political implications may serve to maintain a measure of the close trade relations so laboriously built up during the occupation years.

(2) *Manchuria has undergone a process of partial industrialization.* Industrialization in Manchuria has not been spontaneous but forced by the enemy primarily for the purpose of supplying him with war materials. Large sums of capital have

been employed for the exploitation of Manchurian mineral resources, especially coal and iron. Railways and highways have also been built, mainly for strategic reasons. Agriculture as a whole has been neglected but those crops vitally needed by the enemy have been encouraged. By the end of 1939 Japan had reportedly invested more than three billion yen in various industries in Manchuria but what exactly has been accomplished we do not know. Some of the figures available, however, are given below; these may indicate something of the progress the enemy has made in his efforts to industrialize Manchuria.

	<i>1932 (with exceptions noted)</i>	<i>Latest Year</i>
Railways	5,573 kilometers	10,000 (1939)
Highways	707 kilometers	11,160 (1937)
Coal	6,433,000 metric tons	10,252,000 (1936)
Iron ore	980,000 metric tons	1,905,000 (1936)
Pig iron	434,000 metric tons (1933)	762,000 (1937)
Steel	137,000 metric tons (1935)	427,000 (1937)
Steel materials	25,000 metric tons (1935)	370,000 (1937)
Crude oil	70,831 metric tons	123,000 (1936)
Gold	240,000 grams	3,571,000 (1936)
Electric power	264,000 kilowatts	484,000 (1937)
Cotton mill spindles	150,000 spindles (1930)	471,000 (1939)
Cement	108,800 metric tons	800,000 (1937)
Sulphate of ammonia	29,000 metric tons (1933)	348,000 (1939)
Bean oil	133,000 metric tons	58,000 (1938)
Sugar	1,814 metric tons	11,665 (1938)
Flour mills	8,810,000 bags of 22 kilograms (1933)	29,432,000 (1938)
Area under various crops	13,486,000 hectares	14,679,000 (1938)
Soybeans	4,288,000 metric tons	4,612,000 (1938)
Kaoliang	3,757,000 metric tons	4,680,000 (1938)
Millet	2,635,000 metric tons	3,134,000 (1938)
Maise	1,687,000 metric tons	2,306,000 (1938)
Wheat	1,134,000 metric tons	979,000 (1938)

The whole industrialization program has been placed in the hands of a few companies which are either government-owned or backed by Japanese interests. The largest is the South Manchuria Railway Company, owned mainly by the Japanese Government, which operates all railways in Manchuria. The second largest is the Manchuria Industrial Development Company, a holding company supposedly owned by the Manchoukuo Government and the Japanese Industry Company, which is intended to control all heavy industries in Manchuria. Among its affiliates are the Showa Steel Works, operating the iron mines and steel works at Anshan and Kungchuling, the Penhsihu Colliery and Iron Works, the Manchuria Coal Min-

ing Company, the Manchuria Mining Development Company, the Manchuria Light Metals Company, the Manchuria Mining Company, the Manchuria Lead Company, the Tungpientao Development Company, the Dowa Automobile Company, the Manchuria Magnesium Industry Company, the Manchuria Aircraft Manufacturing Company, the Manchuria Automobile Manufacturing Company and the Manchuria Heavy Machine Company. The third largest is the Manchuria Electric Company which operates most of the power plants. Among other large companies are the Manchuria Synthetic Fuel Company, the Central Bank of Manchu, the Industrial Bank of Manchu, the Mukden Arsenal and the Manchuria Gold Company.

The concentration of industry under a few government-controlled companies fully indicates the enemy's desire for complete control over Manchurian resources for his own use. Although the Japanese Government and financiers have paid heavily for this artificial process of industrialization, a territory such as Manchuria needs a great deal more capital than even Japan could afford to provide. The war in China has severely drained its resources and the Japanese Government soon found itself unable to provide the necessary amounts of capital and raw materials to complete the original program. It therefore was abandoned when only half-finished in favor of one concentrating on the production of coal, iron, steel and food for export to Japan. The extension of hostilities following Pearl Harbor further limited Japan's ability to supply industrial equipment to Manchuria and whatever the latter has produced probably had to be used entirely for war purposes. While no reliable report is available on the latest industrial conditions in Manchuria, we can safely assume that except for increases in the production of coal, steel and other war materials little progress has been made.

Thus the end of the war will also find Manchuria urgently in need of industrial equipment even in the unlikely event her present facilities escape large-scale destruction. Since all industrial firms are controlled and operated by the enemy, the Chinese Government presumably will fall heir to them and will have to provide the personnel to run them. In order to replace enemy personnel in these industries, foreign technicians and executives probably will have to be recruited.

(3) *The purchasing power of the Chinese people has not*

appreciably increased. Industrialization ordinarily creates increased purchasing power in the territory concerned, but we have reason to believe that the industrialization of Manchuria has served to increase the purchasing power only of the Japanese population there rather than of the Chinese population as a whole. The enemy followed the policy of using Chinese as farmers and laborers and as a reserve of cheap labor to be drawn upon from time to time as industrial exploitation proceeded. This policy is fully reflected in the enemy's lukewarm attitude toward Chinese education in Manchuria and his lack of any great interest in Manchurian agriculture, in which the great bulk of the Chinese population was engaged. While in 1929 about 928,000 pupils attended primary schools in Manchuria, only 441,000 were in attendance in 1933; not until 1936 did the number of pupils exceed the prewar figure. Little progress was made with regard to secondary and higher education, the enemy apparently having no intention of promoting any form of higher education whatever and limiting secondary education to vocational training.

Nor has agricultural production made any gains to speak of during the occupation years. The output of principal crops, as reported by the Japan-Manchoukuo Year Book of 1940, showed no progress at all as compared with prewar figures. In 1931 for instance the output of soybeans was estimated at 5,245,000 metric tons and in none of the occupation years was that figure exceeded, while their output in 1934 ran as low as 3,398,000 metric tons. Similarly the output of wheat in 1931 was 1,582,000 metric tons; it dropped to less than half that amount in 1933 and 1944 and never regained its prewar level thereafter. Only the cultivation of rice showed some increase, mainly because of the immigration of Korean rice farmers into southern Manchuria. This lack of progress in agriculture was partly due to the recruiting of farm labor for industrial projects, partly to the continuation of guerrilla warfare long after Japanese occupation and partly to the encouragement of opium-smoking among the Chinese population by the enemy. In fact the manufacture and distribution of narcotics in Manchuria became one of the enemy's most lucrative ventures.

While the war must be taxing the enemy's resources, no doubt the Chinese population of Manchuria is faring even worse. Chinese labor is being squeezed harder and harder and many

workers must have been drafted into the army as labor battalions. A general scarcity of goods of every description may have prevailed in Manchuria as elsewhere together with a wild inflation of the puppet government currency, so that eventually whatever savings the Chinese population may have will be wiped out. The end of the war will also find Manchuria devoid of foreign exchange balances, for the enemy has so enforced a system of exchange control that whatever foreign balances Manchuria may possess will be in terms of Japanese yen, which will be practically valueless once Japan is defeated. In the light of these factors we can readily predict that the people of Manchuria will be greatly impoverished at the end of the war. Their standard of living has remained very low, the benefits of industrialization during the occupation years have scarcely reached them and their purchasing power has been siphoned off to augment the enemy's war resources.

(4) *The foreign trade of Manchuria has been monopolized almost exclusively by Japan and has resulted in a heavy excess of imports over exports.* In 1931 Japan took 38% of Manchuria's exports and supplied 43% of her imports. Since then the direction of her trade has been steadily trending in favor of Japan at the expense of other countries. The percentage distribution of major countries trading with Manchuria from 1934 to 1939 is tabulated as follows:

	<i>Imports</i>					
	1934	1935	1936	1937	1938	1939
Japan	64.6%	71.9%	73.3%	70.7%	73.5%	79.2%
China	9.7	5.3	6.9	4.4	5.5	3.7
United Kingdom	1.6	1.6	1.1	1.3	0.6	0.3
Germany	2.1	2.4	1.9	1.9	2.9	2.9
United States	5.9	4.1	3.4	6.5	7.3	4.8
	<i>Exports</i>					
	1934	1935	1936	1937	1938	1939
Japan	38.4%	43.6%	39.4%	42.9%	50.7%	54.9%
China	14.6	8.0	8.0	17.6	16.8	20.3
United Kingdom	3.6	5.8	4.6	1.4	0.8	0.4
Germany	11.9	7.8	8.3	9.2	6.9	6.0
United States	1.3	3.7	2.7	2.9	1.6	1.8

In 1939 Japan supplied almost 80% of Manchuria's imports with the remaining 20% divided among all the other trading countries. That Manchuria should have imported principally

from Japan was only to be expected since the enemy's deliberate intention was to make Manchuria an exclusive market for Japanese goods. Incidentally, the burden of industrializing Manchuria fell also mainly upon Japan, drawing heavily upon her resources. At one time she was even considering inviting the participation of German capital but the outbreak of hostilities in Europe prevented the materialization of this plan.

In pre-occupation years Manchuria enjoyed an annual excess of exports over imports and from 1929 to 1931 this annual excess was as follows (in U.S. thousand dollars):

	<i>Imports</i>	<i>Exports</i>	<i>Excess of Exports</i>
1929	147,214	210,287	63,073
1930	95,121	132,789	39,668
1931	51,910	109,506	57,596

Manchuria's favorable balance of trade undoubtedly was an important factor in helping to reduce China's unfavorable balance as a whole. This surplus consisted partly of remittances sent by thousands of Chinese immigrants in Manchuria to their families in North China and also of foreign balances held by merchants and officials in Manchuria. The lack of any intensive program of industrialization in Manchuria and the relative self-sufficiency of Chinese farmers accounted for the comparatively small volume of imports which made this surplus possible.

The picture has totally changed since the enemy occupation. Year by year the excess of imports over exports has grown larger and larger, as shown in the following table (in U.S. thousand dollars):

	<i>Exports</i>	<i>Imports</i>	<i>Deficit</i>
1934	137,494	194,332	-56,838
1935	113,274	174,780	-51,506
1936	152,506	199,610	-47,104
1937	161,994	255,486	-93,492
1938	189,432	362,678	-173,246
1939	198,959	471,503	-272,544

This excess of imports was due primarily to Japan's attempts to industrialize Manchuria since a large quantity of capital goods had to be imported to build new railways and factories. The fairly large-scale immigration of Japanese was also responsible because the relatively high standard of living of the

Japanese in Manchuria as compared with Chinese farmers necessitated large imports of consumers' goods, chiefly from Japan. In 1938 and 1939 the total value of Manchuria's imports was larger than that of China proper, though Manchuria has only about one-tenth the latter's population. This fact serves to prove that the total value of a country's trade does not depend so much on the size of its population as on the degree of industrialization and the standard of living of its people.

In the light of these observations a few conclusions may be drawn as to the volume and character of Manchuria's postwar foreign trade.

(1) *The volume of Manchuria's postwar foreign trade is likely to decline from the peak reached during the occupation years, especially in terms of imports.* The large volume of Manchuria's foreign trade during the occupation years has been artificially created by the enemy and has borne little relation to the purchasing power of the Chinese population there. While, as we have said, it reflected the enemy's attempts to industrialize Manchuria and the presence of a large Japanese population with superior purchasing power derived from lucrative positions, it was also due to the inclusion of trade with China in the total figures on Manchuria's foreign trade. In 1939 for instance about 3.7% of her imports and 20.3% of her exports were Chinese. Since these automatically will be excluded from figures on Manchuria's postwar foreign trade, a substantial decline in her exports and a slight decrease in her imports will take place even without any other change.

But other changes will undoubtedly occur. Although the purchasing power of the Chinese is unlikely to increase immediately after the war, the Japanese will certainly lose their economic privileges and consequently much of their purchasing power. With the enemy driven out, the burden of industrializing Manchuria will fall instead upon China. Whether enough funds will be available for this task will depend upon the size of the credits China is able to obtain from her Allies. The major portion of the credits which China obtains, however, are likely to be used to rehabilitate and reconstruct the economy of China proper first, since the latter has so far suffered more seriously from the war than Manchuria. Providing she does not become a battleground or fighting there is not too prolonged, she

certainly will emerge from the war more highly industrialized than China proper and may not require as much immediate and urgent attention, although the wholesale liquidation of enemy personnel in her economic structure may temporarily create confusion and chaos in various industries before order and efficiency are restored. The present industrial facilities of Manchuria therefore may not be capable of immediate expansion when the war is over.

All these possible developments would result in a decline in Manchuria's postwar foreign trade, especially in her imports from Japan. The trade figures of the occupation years were essentially illusory and should not be taken to indicate that the same volume of trade would be continued in the postwar period.

(2) *Manchuria's postwar domestic trade with China proper will grow rapidly and possibly at the expense of her trade with foreign countries.* Politically and economically Manchuria is a part of China. The population is predominantly Chinese and her resources can be utilized by China as a whole on most economical terms. If her present industrial facilities are left intact, she will play an important role in the industrialization of the rest of China by supplying coal, iron, steel, timber, ammonia sulphate and possibly crude oil. If her industrial facilities are destroyed, she will still be able to supply soybeans, millet, bean cakes, bean oil and other badly needed agricultural products. We can therefore expect that a substantial proportion of Manchuria's exports to Japan during the occupation years will be diverted to China.

At the same time and in the absence of Japanese competition and intervention, products from China proper will be shipped to Manchuria in increasing quantities. Although few products from China proper will at once be available for export postwar, certain materials whose production has not been affected seriously by the war will still be able to find a market there. Among these will be wood oil, silk goods, tea and numerous Chinese medicinal products. In pre-occupation years Manchuria provided a market for cotton yarn, cotton piece goods, knitting goods and many other consumers' goods made in Tientsin, Shanghai and other relatively industrialized cities. This market was destroyed, however, when Manchuria was seized and ever since 1932 Manchuria has been an exclusive

market for all kinds of Japanese consumers' goods. The withdrawal of the enemy may not enable Chinese manufacturers to regain their market immediately, for the postwar industrial production of China proper will not be large enough to meet even her own requirements. But as the process of industrialization proceeds in China proper, Manchuria will shape up as one of the first markets to absorb a substantial quantity of products made in China proper just as the latter will constitute a lucrative market for Manchurian goods. Either a Manchuria industrialized or an industrialized China proper or both will promote mutual trade because basically their economies are supplementary.

(3) *The pattern of Manchuria's foreign trade will follow that of China as a whole and the Allied countries will take a greatly increased share of her trade.* Even before the occupation years the foreign trade of Manchuria was dominated by Japan because of her political intervention, her control of trading organizations there, the preponderance of her investments and many other factors which gave her almost exclusive rights to trade there. The seizure of Manchuria in 1931 created a perfect dumping ground for Japanese goods and foreign traders other than Japanese soon were forced to quit the field altogether.

But the conclusion of the war will finally put an end to Japanese trade domination, and trade and investment opportunities will be open to all countries on an equal footing. Because of her proximity and the likelihood that a large Japanese population will remain in Manchuria permanently however, Japan may continue to take a substantial share of trade with Manchuria. Nevertheless this trade will in the future be based on her ability to compete with other countries rather than on any special political or economic privileges such as she has enjoyed during the pre-occupation and occupation years.

Thus the trade position of Manchuria will be similar in nature to and in the same direction as that of the rest of China. Although she will be somewhat more highly industrialized, her resources have by no means been exploited fully and there will be as much room for further development as in China proper. A similar demand will exist for capital goods for example and the country willing to make investments can expect

to secure a larger share of her trade than otherwise. As will be the case for China proper, the United States, Great Britain and any other country with a large productive capacity will probably trade extensively with Manchuria.

Since Manchuria's closest neighbors are Russia and Korea, her trade relations with these two countries are likely to become more intimate in the postwar period. Asiatic Russia's trade with Manchuria has been rather insignificant during recent years partly because both produced more or less the same kind of products and partly because their political relations have been far from satisfactory, resulting in one crisis after another and making trade transactions almost impossible. General imports from Soviet Russia for instance amounted to only \$75,000 in 1936, \$202,000 in 1937, \$9,000 in 1938 and \$6,000 in 1939, while exports to Russia were \$458,000 in 1936, \$42,000 in 1937, \$8,000 in 1938, and \$4,000 in 1939.

Russia's war with Germany has led to the industrialization of a considerable part of Asiatic Russia. While most of these industrial products will have to be used for domestic rehabilitation purposes, some of them possibly may find their way into the Manchurian market if the Soviet Government finds it advisable to export such products. No doubt the liquidation of Japanese influence in Manchuria will bring about an improvement of political relations and therefore a more active trade.

Korea has already traded extensively with Manchuria during the occupation years. Imports from Korea amounted to about \$7,909,000 in 1936, \$11,240,000 in 1937, \$20,119,000 in 1938 and \$26,715,000 in 1939, while exports to Korea were about \$13,283,000 in 1939. Industrialization has also been under way in Korea since 1933 and concentrated on the improvement of communications, the expansion of metal and chemical industries and the establishment of a number of factories producing goods for the domestic and Manchurian markets. To what extent such industries will be destroyed during the war cannot be foreseen but an independent Korea freed of artificial trade ties with Japan should augur well for further development of trade relations with Manchuria.

The exports of Manchuria like those of China proper will continue to consist mainly of agricultural products like soy-

beans, bean oil etc. Most of the minerals she produces, such as iron, steel, coal and oil, will be used by China herself and therefore may not enter the world market for a long time to come. So many regions in Manchuria have remained uncultivated that agricultural exports including timber and animal skins can be considerably increased when adequate attention is given to their production. Postwar Manchuria will probably also incur an excess of imports over exports since a substantial portion of the latter will be diverted to China proper, while at the same time a large quantity of capital goods will be imported to continue the process of industrialization already initiated by the enemy. Because of her wealth of natural resources however, she probably will be the first region in the whole of China to yield a surplus in her international balance of payments and thereby add materially to China's capacity for self-industrialization.

These assumptions will not enable us to evaluate the postwar trade of Manchuria item by item. More than fourteen years of occupation have changed the Manchurian economy to such an extent that any pre-occupation figures can scarcely be considered an empirical basis for estimates. Since the withdrawal of the enemy will drastically change the direction of her trade, neither can the figures of the occupation years be used to indicate any probable postwar trend. We can, however, assume that the tremendous excesses of imports over exports characteristic of the years from 1937 to 1939 are unlikely to be repeated and that in the absence of any material increase in exports most items of imports will not reach the figures reported for those three years. At that time Japan was concentrating on establishing certain types of war industries in Manchuria in order to further her designs for conquest, so that the funds poured into Manchuria were not primarily for investment purposes. Probably her postwar trade figures therefore will lie somewhere between the lowest and highest figures of the occupation years (as modified of course by a number of factors that specifically influence the import and export of any particular product). A schedule to show the values of Manchuria's imports and exports from 1934 to 1939 has been made and as sheer guess-work an estimate is given for each item in regard to its annual value in the immediate postwar period.

B. IMPORTS

(1) Machinery and tools

During the occupation years Manchuria has imported a substantial quantity of machinery and tools, the most important being electrical machinery, mining equipment and machine

I. Manchuria's Imports

(In U. S. thousand dollars)

	1934	1935	1936	1937	1938	1939	Estimated Annual Value Postwar
A. Capital Goods							
(1) Machinery and tools	13,443	14,643	16,617	27,721	47,184	69,011	20,000
(2) Iron and steel	20,283	16,261	13,291	24,472	34,731	27,138	12,000
(3) Copper and brass	1,454	1,291	768	1,778	2,629	2,571	1,000
(4) Vehicles	8,433	9,017	9,305	9,720	21,620	33,750	10,000
(5) Timber	5,879	4,262	3,588	3,779	9,932	25,305	3,000
(6) Cement	2,587	1,025	991	307	1,204	3,054	500
TOTAL	52,079	46,499	44,560	67,777	117,300	160,829	46,500
B. Producers' Goods							
(1) Petroleum products	8,808	3,552	4,120	8,497	6,896	*	4,000
(2) Dyes and paints	1,836	1,951	2,094	3,339	3,370	1,764†	2,000
(3) Chemicals and pharmaceuticals	3,333	3,811	4,085	6,265	10,436	13,438	4,000
(4) Cotton	4,022	2,721	5,366	9,271	12,138	2,088	5,000
TOTAL	17,999	12,035	15,665	27,372	32,840	17,290	15,000
C. Consumers' Goods							
(1) Food, beverages and tobacco							
(a) Rice paddy	2,448	3,346	3,663	2,520	3,242	4,783	3,000
(b) Wheat flour	18,681	15,619	7,823	3,981	13,397	17,733	10,000
(c) Sugar	3,786	3,753	8,488	5,917	10,179	11,007	1,000
(d) Fishery products	2,697	2,475	3,463	5,926	6,454	15,993	3,000
(e) Tobacco leaf	2,802	1,755	2,553	2,187	2,702	2,099	1,000
(f) Fruits and seeds	3,459	3,252	3,782	3,681	6,575	12,566	3,000
(g) Wines and liquors	2,286	2,304	2,414	2,870	3,344	3,037	1,000
SUB-TOTAL	36,159	32,504	32,186	27,082	45,893	67,218	22,000
(2) Other Consumers' Goods							
(a) Cotton yarn and cotton piece goods	26,533	19,752	27,465	33,216	23,318	3,327	15,000
(b) Woolen goods	3,961	3,867	5,130	6,459	9,018	10,848	3,000
(c) Rayon goods	6,262	7,124	13,995	8,843	18,007	28,183	4,000
(d) Silk piece goods	919	907	570	572	1,287	4,566	900
(e) Gunny bags	5,280	4,236	4,046	5,549	5,949	8,649	5,000
(f) Paper goods	6,836	6,499	8,473	11,954	16,428	23,103	6,000
(g) Chinaware	660	610	706	896	1,456	2,623	800
(h) Photographic goods	584	392	759	1,434	896	1,018	500
(i) Clothing	3,208	3,243	3,923	5,011	7,481	13,675	2,000
(j) Rubber footwear	1,811	2,441	2,483	3,362	2,763	1,679	1,000
(k) Perfume and cosmetics	653	678	873	1,015	1,318	1,720	500
SUB-TOTAL	56,707	49,749	68,423	78,311	87,921	99,391	38,700
D. Other Merchandise							
TOTAL	31,388	33,993	38,776	54,944	78,724	126,775	30,000
GRAND TOTAL	194,332	174,780	199,610	255,486	362,678	471,503	152,200

* Not reported; believed to have been included under *Other Merchandise*.

† Including only coal tar dyes.

II. *Manchuria's Exports*
(In U. S. thousand dollars)

	1934	1935	1936	1937	1938	1939	Estimated Annual Value Postwar
A. Agricultural Products							
(1) Soybeans	51,473	36,547	60,657	65,087	66,650	53,635	45,000
(2) Beancake	16,864	14,861	15,327	17,947	20,079	32,520	16,000
(3) Millet	6,528	2,618	5,285	4,087	5,790	8,748	3,000
(4) Corn	1,642	425	2,018	2,455	5,215	7,548	3,000
(5) Sorghum	2,394	1,155	3,383	2,834	5,362	7,027	2,000
(6) Other beans	4,009	4,730	5,973	3,611	3,986	7,044	3,000
(7) Bean oil	5,150	5,764	6,085	7,296	4,011	5,985	3,000
(8) Bran and fodder	2,979	1,325	1,843	2,287	4,189	4,159	1,000
(9) Buckwheat	1,392	722	685	738	764	481	400
(10) Wheat	2	603	449	424	.....	.....	.....
(11) Peanuts	4,126	4,380	4,648	4,713	3,447	2,628	3,000
(12) Castor seed	659	808	876	1,262	748	440	500
(13) Hemp seed	1,444	1,634	1,038	653	940	2,178	1,000
(14) Perilla seed	1,360	2,179	3,987	2,270	2,070	2,823	2,000
(15) Sesame seed	1,920	903	240	584	973	2,187	2,000
(16) Perilla oil	195	822	1,952	2,682	1,322	1,751	3,000
TOTAL	102,137	79,476	114,446	118,930	125,486	139,154	87,900
B. Forest and animal products							
(1) Bristles	703	809	1,271	1,883	1,557	1,712	1,000
(2) Silk, raw wild	2,426	2,106	1,765	2,418	1,780	1,526	1,000
(3) Skins and hides	873	1,189	1,658	1,545	1,758	901	3,000
(4) Timber	1,188	1,058	780	897	1,353	327	300
(5) Wood pulp	.....	.....	22	.....	2,394	2,196	300
TOTAL	5,190	5,162	5,496	6,743	8,842	6,662	5,600
C. Minerals							
(1) Coal	13,736	11,709	10,150	10,252	8,023	6,716	5,000
(2) Salt	1,780	1,349	1,463	2,083	2,349	2,860	1,000
(3) Shale oil	316	370	703	434	.....	.....	.....
(4) Paraffin	243	349	596	514	.....	.....	.....
(5) Magnesite	.....	.....	374	637	1,358	1,757	2,000
(6) Iron and steel	4,106	5,197	7,959	8,406	17,003	13,662	1,000
(7) Ammonium sulphate	562	1,751	3,296	2,780	4,715	3,058	1,000
TOTAL	20,181	18,974	21,245	22,326	33,448	28,053	10,000
D. Other Merchandise							
TOTAL	9,986	9,672	21,319	13,995	21,656	25,090	10,000
GRAND TOTAL	137,494	113,284	152,506	161,994	189,432	198,959	113,500

and hand tools. More than 80% of such imports came from Japan since Japanese interests controlled the industrialization program; only when Japanese manufacturers were unable to supply certain products were orders placed in other countries. Under these circumstances the United States, Germany and Great Britain managed to sell special machinery to Manchuria but none of them ever succeeded in supplying more than five or six per cent of the total.

Possibly, however, the industrialization of Manchuria will be slowed down because of China's preoccupation with more urgent problems elsewhere, so that imports of machinery and tools may decline considerably as compared with the peak figures of the occupation years. If the present industrial facilities

of Manchuria are spared wholesale destruction, they will by themselves generate enough momentum to push industrialization forward and a decline in such imports would produce no serious effect on her economy. We may therefore assume that Manchuria will import only about \$20,000,000 worth of machinery and tools a year in the postwar period.

The United States can expect to take a larger share of this estimated trade than any other country. A defeated Japan may still be able to sell machinery and tools to Manchuria but her industrial capacity probably will be so impaired that any large-scale export of capital goods will be out of the question. Because of the large average size of her farms and the nature of her crops, Manchuria has been and will be a better market for agricultural machinery than China proper. A number of American tractors were already being used on Manchurian farms during the occupation years and many more will be needed postwar. Development of Manchuria's great water power resources will entail large imports of hydro-electric machinery. Numerous machine parts for repairing existing installations and various kinds of machine and hand tools for making them will also be purchased from abroad.

(2) *Iron and steel*

Although Manchuria began to produce steel during the occupation years, she did not manufacture all the kinds needed in her program of industrialization. During the early occupation years about 70% of her steel imports came from Japan, the rest being supplied by Germany, the United States, Belgium and Great Britain. When Japan was forced later on to reserve all her steel output for war production, Manchuria began to buy more from the United States. The value of steel imports from the United States rose from \$289,000 in 1936 to \$2,761,000 in 1937, then to \$9,927,000 in 1938 and to \$9,060,000 in 1939.

Just as her imports of machinery and tools will decline so will steel imports be likely to fall because the demand will be conditioned upon the speed of industrialization. Since war broke out between Japan and the United States, a tremendous expansion of iron and steel production has been reported in Manchuria. These facilities have already been bombed; if not totally destroyed they will provide an economical source of

iron and steel not only for Manchuria but for China as well. Regardless of whether such facilities survive the war however, steel imports are more likely to decline than to increase in the postwar period.

Undoubtedly the United States will become the principal country supplying Manchuria with steel products after the war; certainly no other nation will occupy a better position to do so. Should \$12,000,000 worth of iron and steel products be imported each year for instance, at least 70% would have to come from the United States. Sooner or later Manchuria's iron and steel industry is bound to be more highly developed and many steel products now imported will be manufactured domestically. The interests of American steel manufacturers might better be served by cooperating with the Chinese in developing the Manchurian steel industry than merely by selling steel in a potential steel-producing area.

(3) *Vehicles*

This category includes locomotives, railway cars, trucks, passenger automobiles, bicycles and their various accessories. For strategic reasons the enemy had been actively engaged in building railways in Manchuria, causing a heavy influx of railway equipment and materials during the occupation years. If these railways and their equipment are not seriously damaged, Manchuria will possess a greater railway mileage when the war ends than the whole of China proper. Possibly for emergency purposes a few unimportant railways with their equipment may be transferred to China proper to expedite the restoration of some of her trunk lines. Under such circumstances imports of railway equipment and materials into Manchuria might decline considerably.

If, however, a last-ditch battle were to be fought resulting in wholesale destruction of Manchurian railway equipment, then both Manchuria and China proper would face the same desperate need for railways. Since Manchuria is a good deal smaller than China proper, the quota of imported railway equipment which could be allotted to her would also be smaller, assuming that the Chinese Government would possess unified control of all Manchurian railways as well as those of China proper. With regard to automobiles and bicycles, their importation will also probably decline for lack of sufficient

purchasing power on the part of both Chinese and Japanese populations there. Hence we estimate that only about \$10,000,000 worth of vehicles will be imported each year in the immediate postwar period.

The United States should be able to take a leading position in supplying railway equipment and automobiles to Manchuria. American manufacturers will meet little competition from other countries in the case of automobiles but in the case of railway equipment Great Britain and other European countries may also take a share of the trade.

(4) *Timber*

That Manchuria, well-known for her forestry, should have made heavy imports of timber during the occupation years is surprising. In the last few pre-occupation years her foreign trade in timber amounted yearly from 8,500,000 to 14,000,000 cubic feet of exports and from 5,000,000 to 8,500,000 cubic feet of imports, resulting in an excess of exports. But during the occupation the extensive building of railways, a public construction program by the puppet government and a heavy influx of Japanese who needed living accommodations so increased the demand for timber as to produce a large excess of imports.

More than 80% of imported timber came from Japan. Unless some of the more important cities of Manchuria are destroyed in the war, such heavy imports will hardly continue. Of course Manchuria does not produce all the various kinds of timber materials she needs and will always find it necessary to import certain kinds for some particular use, most likely from Russia, the United States and Canada. But she does possess timber in such large quantities that its export will easily exceed imports. Manchurian timber resources are among the few with which China is endowed and their full exploitation will help materially to meet her postwar need for construction materials.

(5) *Cement*

Nearly all the cement materials imported during occupation years came from Japan. During these years a number of cement factories with a combined capacity of around 1,000,000 metric tons have been built. Unless they are damaged in the war, Man-

churia will not need to import any large quantity of cement in the postwar period.

(6) *Copper*

Manchuria produced very little copper in the occupation years although some copper ore resources were later discovered by the enemy which may or may not have been worked. Since Japan herself produces copper, her preoccupation with other forms of war production would not have justified her exploiting Manchuria's copper ores on any large scale. Manchuria will therefore continue to import copper and brass products postwar. But as Manchurian industrialization probably will have to be slowed down, the quantity to be imported will be smaller than in occupation years.

In the early occupation years nearly all copper products were imported from Japan but as Japan began to need more and more copper for war production, Manchuria also began to import copper from the United States in considerable volume during the last few years before Pearl Harbor—about \$634,000 worth in 1938 and \$578,000 in 1939. In the postwar period both Japan and the United States will supply copper to Manchuria.

(7) *Petroleum products*

The enemy ceased to publish import figures for petroleum products after 1937. The import figures from 1934 to 1937 may be itemized as follows (in U.S. thousand dollars):

	1934	1935	1936	1937
Gasoline	3,230	1,555	511	2,057
Kerosene	3,805	645	502	1,931
Lubricating oil	1,048	824	926	1,299
Crude oils	725	528	2,181	3,210
<i>TOTAL</i>	<i>8,808</i>	<i>3,552</i>	<i>4,120</i>	<i>8,497</i>

The increasing importation of crude oils coupled with a decline of other types of oil imports up to 1936 was due to the existence of a large refining plant at Dairen erected by the Manchou Petroleum Company, which has exercised exclusive control over the whole petroleum market in Manchuria. The large increase of oil imports in 1937 was caused by enemy war operations in China proper, since most of the Japanese troops were despatched to North China from Manchuria. In that year the United States supplied about 40% of gasoline imports, 50%

of kerosene, 40% of lubricating oil and 70% of crude oil, the rest being supplied by Japan, the Dutch East Indies and British Borneo. Japan especially supplied a considerable quantity of kerosene, a by-product of her oil refineries.

The enemy expended great efforts toward the establishment of a coal liquefaction industry in Manchuria, represented by three plants located at Fushun, Chinchow and Ssuping kai. The scheduled production of oil from these plants for 1939 was reported by the Japan-Manchoukuo Year Book of 1940 at 50,000 metric tons of crude oil and 10,000 of gasoline. In view of the importance of petroleum products to war operations, the output of these plants must have been considerably expanded in order to meet Japan's war needs.

The enemy has also engaged in the manufacture of heavy oil by the treatment of Manchurian oil shale, whose cost of production was reportedly lower than the liquefaction process. A program of producing 500,000 metric tons of shale oil at Fushun was scheduled for completion in 1941, while another program was intended to raise the total output to 1,000,000 metric tons a year. The degree to which such programs have been fulfilled is unknown but since Japan must scrape the bottom of the barrel of all her oil resources to meet war requirements, undoubtedly the output of shale oil has considerably exceeded the 123,000 metric tons reported in 1936.

Should these oil facilities escape destruction and the cost of producing synthetic oil compares favorably with that of natural oil, Manchuria might not need any oil imports at all after the war. This probably will not be the case however, for her coal liquefaction and shale oil plants will certainly be among the most important bombing objectives. So far no process of producing synthetic oil has been discovered which is as cheap as that of producing natural oil; resort to the former by the Axis powers was governed purely by military considerations. Thus Manchuria will probably continue to import petroleum products in the postwar period.

(8) Dyestuffs and paints

Unlike China proper, Manchuria imported more dyestuffs from Japan than from Germany during the occupation years. In 1937 about 50% of these came from Japan, 30% from Germany and 7% from the United States. The end of the war

probably will find both Japan and Germany unable to export dyestuffs so that the Manchurian market like the rest of China will rely principally on the products of American and British manufacturers. We estimate that postwar imports of dyestuffs and paint will average around the level of the occupation years.

(9) *Chemicals and pharmaceuticals*

Manchuria has provided an almost exclusive market for Japanese fertilizers, drugs, medicines and industrial chemicals. The rapid increase of such imports after 1936 was partly due to industrialization and partly to the large influx of Japanese. Chemical fertilizers were also being popularized though the majority of Chinese farmers continued to make very little use of them.

During the occupation years a number of factories for making ammonia sulphate have been set up, the largest being the Manchuria Chemical Industry Company. Considerable quantities of their products have been exported, reaching a total of 212,334 metric tons in 1938. Manchuria therefore both imported and exported chemical fertilizers although presumably what she exported varied in kind from what she imported. If these plants escape large-scale destruction, possibly their production can be switched to domestic consumption and thereby make up a substantial proportion of what was previously imported. The impoverished state of both the Chinese and Japanese populations of Manchuria during the postwar period may curtail the demand for drugs and medicines. We therefore estimate that the annual value of such imports will run around the level of the early occupation years.

(10) *Cotton*

In 1939 Manchuria was reported to have about 470,000 cotton spindles requiring a yearly cotton supply of about 350,000 bales. The climate of Manchuria except for the region south of Mukden is not suitable for the cultivation of cotton, so that a large proportion of this supply—as much as three-quarters of it in fact—must have been imported. The enemy made strenuous efforts to encourage cotton-growing in southern Manchuria but the degree of his success is not known. During the occupation years India, China and the United States were the leading suppliers of cotton to Manchurian mills, but after war broke out

in the Pacific, occupied China became the sole supplier. In view of the fact that mills both in Japan and China also had to use Chinese cotton as their solitary source of raw material, it is doubtful whether mills in Manchuria could have continued full operations. As soon as the war ends however, these mills (if they escape destruction) should be able to import Indian and American cotton.

Manchuria provides a wide market for cotton goods. During the occupation years a number of mills in Japan had already moved their spindles and looms to Manchuria in order to avail themselves of the advantages of cheap labor and proximity to the market. If Japanese competition be reduced by the removal of Japanese cotton mill machinery to China as reparations, then Manchurian mills should have a good opportunity to expand their business. Since cotton produced in China proper may be insufficient to meet the postwar needs of her own mills, Manchurian mills will have to rely heavily upon Indian, American or Brazilian cotton. Annual imports worth about \$5,000,000 are therefore quite likely. Of course we have taken for granted that such mills will be confiscated and operated by the Chinese in Manchuria.

(11) *Rice and paddy*

Increased rice imports were due either to the influx of Japanese, whose principal item of diet is rice, or to a poor rice crop in some particular year. Increased rice consumption was partially met by increased production brought about largely through the immigration of Korean rice farmers. So long as large Japanese and Korean populations remain in Manchuria, rice imports will continue—principally from French Indo-China, Formosa and Burma. The Chinese population in Manchuria consumes very little rice, using it only at festivals and formal functions. Possibly large numbers of the Japanese will become rice farmers and grow what they eat once they lose their privileged status. Or they may follow the custom of the Chinese and use wheat flour or kaoliang as their principal item of diet. In any event the importation of rice can be expected to decline.

(12) *Wheat flour*

Manchuria has not been self-sufficient in wheat and year after year large quantities of wheat flour have had to be imported.

In the early occupation years Australia, the United States and China ranked alongside Japan as important suppliers but later on Japan became almost the sole supplier. Japan's venal practice was to buy wheat from Australia and elsewhere, mill it in Japan and then ship it for sale in Manchuria.

Flour milling is one of Manchuria's most important industries. In 1937 a total of 70 mills combined a production capacity of 119,840 bags of 22 kilograms each a day. Apparently they milled domestic wheat only, since very little foreign wheat has ever entered Manchuria. Most of these mills are situated in cities around Harbin and along the North Manchuria Railway Line.

The puppet government of Manchuria reportedly tried to encourage Chinese farmers to grow wheat instead of soybeans in view of the impossibility of exporting the latter to European countries after Pearl Harbor. Apparently so long as the war continues, no flour will be imported from Japan; besides, Manchuria must be self-sufficient in wheat flour by now. On the one hand wheat production may have already increased while on the other the inhabitants may have changed their diet from wheat flour to kaoliang and millet, which are less tasteful and nutritive but cheaper and more easily available. So by the time the war ends, the consumption of wheat flour in Manchuria may have been somewhat reduced while domestic production may be higher. In this case a decline in wheat flour imports is likely. In the absence of Japanese controls Australia, the United States and Canada will be able to ship flour directly to Manchuria.

(13) *Sugar*

More than 90% of Manchuria's sugar imports came from Japan and only occasionally were the Dutch East Indies able to make any shipments. The rapid increase of sugar consumption after 1936 shown by import figures was essentially due to the influx of Japanese and the rise of sugar prices. The two sugar manufacturing companies in Manchuria—the Manchuria Sugar Manufacturing Company and the North Manchuria Sugar Manufacturing Company—reportedly increased their production from 30,246 *piculs* in 1933 to 194,422 *piculs* in 1938. Since the war in the Pacific has destroyed a good part

of Japan's shipping facilities, probably only very small quantities of sugar have been shipped to Manchuria since 1941.

The return of Formosa will enable China to satisfy her sugar requirements not only in China proper but in Manchuria as well. The shipment of sugar from Formosa to Manchuria will then become a part of China's domestic trade and will not appear in the returns of her foreign trade. Therefore we can expect only small sugar imports by Manchuria in the postwar period.

(14) *Fishery, sea products, fruits and seeds*

Imports of these products increased after 1936—a fact which, as we mentioned previously, indicates the presence of a large Japanese population in Manchuria. The Japanese there consumed a great quantity of such products because they enjoyed many economic privileges and their average purchasing power was actually higher than that of Japanese at home. Once they lose such privileges however, the consumption of these items will be drastically curtailed. We therefore estimate that such imports will fall off considerably.

(15) *Tobacco leaf*

More than 50% of tobacco leaf imports came from China and about 30% from the United States during the occupation years. The tobacco leaf imported from China was used not for cigarettes but rather for old-style smoking by Chinese inhabitants and such consumption has remained fairly steady. Since postwar shipments of tobacco leaf from China to Manchuria will be considered part of China's domestic trade, they will no longer appear as foreign trade. After 1938, imports of tobacco from countries outside of the yen bloc were restricted while after 1941 shipments ceased altogether.

A number of cigarette factories are located in Manchuria, the most important of which is the Chi Tung Tobacco Company—a subsidiary of the British-American Tobacco Company. After the war most of these factories are expected to continue or resume operations. Since Manchuria does not produce enough tobacco for her needs, imports from the United States and other countries will approximate the level of the occupation years.

(16) *Wines, beer and spirits*

More than 90% of these imports came from Japan and consisted for the most part of beer and sake consumed chiefly by the Japanese population in Manchuria. Such consumption is expected to decrease considerably in the postwar period.

(17) *Cotton yarn and cotton piece goods*

Most of the cotton goods imported by Manchuria are of a coarse grade and for the use of Chinese farmers there. This trade has been completely dominated by Japanese manufacturers during the occupation years but the defeat of Japan and the possible removal of textile machinery from Japan to China proper would leave a wide gap to be filled by goods from other countries or the products of the native cotton mills. The likelihood is that Manchurian cotton mills—if they escape destruction—will supply a portion of these requirements although imports from other lands will still be necessary.

Logically China proper should best be able to supply Manchuria with cotton goods if she possessed a sufficient number of cotton mills to manufacture them. Immediately after the war however, it is unlikely she will have enough spindles to satisfy even her own needs. Consequently cotton goods for Manchuria will probably be imported from India, Great Britain and to a lesser extent from the United States.

(18) *Woolen goods*

The rapid increase of imports of woolen goods was also due to the influx of Japanese; as usual more than 90% came from Japan. Great Britain and Poland managed to supply a small proportion ranging from 2 to 5% of total imports. Otherwise the market was as exclusively dominated by the Japanese as that for cotton goods.

Manchuria produces abundant supplies of wool but the quality is poor and suitable only for making low-grade woolen cloth, felt, blankets and rugs. Only a few woolen mills have been operating during the occupation years. The bulk of the Chinese population has always been so poor that the demand for fine woolen piece goods was small until the influx of Japanese with relatively high purchasing power. The large volume of imports of woolen goods therefore should not be

taken to indicate a rising standard of living for the common people of Manchuria.

Consequently once the Japanese lose their economic privileges after the war, imports of woolen goods will fall off. At the same time British woolen goods will enjoy a much larger sale than in the occupation years. Possibly American woolen manufacturers will also find a market there in the absence of discriminatory Japanese competition.

(19) *Rayon goods*

From 1938 to 1939 the value of imports of rayon goods rose from \$18,007,000 to \$28,183,000, while during the same period the value of imports of cotton goods fell from \$23,318,000 to \$3,327,000. As noted in a previous chapter, the same change occurred in Japan's trade with China proper from 1938 to 1939. This large increase was due not to any change of taste on the part of the consuming public but to the policy of Japanese textile manufacturers of making more rayon than cotton goods because the former were not required to meet competition from domestic production either in China proper or Manchuria. Increased rayon production was also a feature of Japan's war program because the basic raw material for rayon—wood pulp—could be easily obtained both in Japan and Manchuria while that for cotton goods had to be imported.

Presumably the defeat of Japan will so seriously affect her rayon-producing capacity that little could be exported postwar. Like China proper, Manchuria provides a ready market for cheap rayon goods—cheap enough, that is, to compete with cotton goods. But if Japanese production is reduced, the population will turn again to the use of cotton goods in their stead in view of the fact that rayon goods produced in other countries are relatively high-priced. Imports of rayon goods postwar will fall off therefore, although both American and British rayon manufacturers will gain a new opportunity to push their sales in Manchuria.

(20) *Silk piece goods*

The sudden increase in imports of silk piece goods in 1938 and 1939 was partly a result of the policy of the Japanese Government of encouraging the use of silk among the yen bloc countries in anticipation of a silk embargo by the United States.

Also, the presence of a large Japanese population in Manchuria was again responsible for the increased consumption of silk piece goods there. Since silk production both in Japan and in China is likely to be greatly reduced, imports of silk piece goods into Manchuria will also decline.

(21) *Gunny bags*

The use of gunny bags is indispensable to the movement of agricultural staples in Manchuria. Over 90% of such imports came from India. Although a number of factories manufactured gunny bags of native hemp, their output was insufficient to meet requirements and importation increased when war operations expanded their demand. After war broke out between the United States and Japan, shipment of gunny bags from India halted completely and farmers in Manchuria were forced to rely on old or locally made bags to move their crops. The end of the war will find Manchuria very short of an adequate supply of gunny bags. Imports from India will probably approximate the level of occupation years.

(22) *Paper goods*

Japan was the major supplier of paper products to Manchuria, furnishing more than 90% of imports in paper, paperware, waste paper, books and printed matter. A timber-growing country, Manchuria is very suitable for the development of a pulp and paper industry. For fear of creating competition with domestic products however, Japanese interests were mainly interested in making pulp only for export to Japan. A number of pulp factories were established in the forest regions and their output was exported to Japan for the manufacture of paper and rayon. Meanwhile more than 80% of Manchuria's paper consumption was being supplied from abroad.

The prospects are good for the postwar development of a pulp and paper industry in Manchuria to supply not only her own needs but also those of China proper. If Japanese paper mills are not totally destroyed, some of them might be transferred to Manchuria as reparations, in which case a paper industry could be built up quickly. What could be manufactured would of course consist only of a few principal articles rather than all the varieties of paper products consumed. A substantial quantity of such products will still be imported

therefore, although the total value will probably show a considerable decline as compared with that of occupation years. In the absence of serious Japanese competition, the paper products of the United States, Canada and North European countries will find a market in Manchuria.

(23) *Clothing*

Manchuria used to be a market for low-grade and second-hand Chinese clothes. In pre-occupation years thousands of Chinese laborers who migrated to Manchuria had to buy ready-made clothes. In addition Manchuria's cold winters and the low purchasing power of the population combined to create a tremendous market for such clothes. New clothes manufactured in Manchuria were usually too expensive: most of the clothing materials had to be imported and skilled labor was scarce. After the enemy occupied Manchuria an increasing proportion of such clothes began to be imported from Japan. The large influx of Japanese after 1936 also created a market for expensive, Japanese-style clothes and the volume of trade in this line swelled substantially.

No doubt general shortages of clothes and clothing materials will be prevalent in the Far East during the postwar period. Yet Manchuria may be unable to continue to import second-hand, low-priced clothes either from China proper or Japan. Probably therefore, surplus Allied army uniforms will be shipped to Manchuria for disposal, in which case they will be imported mainly from the United States and Great Britain. Since the purchasing power of the Chinese population in Manchuria will be low, we feel that such imports will fall far below the level of the occupation years.

(24) *Rubber footwear*

Manchuria's cold climate makes some kind of footwear absolutely necessary and a considerable quantity of rubber footwear was previously imported because of its cheapness as compared with leather footwear. Again such imports came almost entirely from Japan. The footwear of Chinese farmers in Manchuria is generally made of straw and reed fibres and lined with coarse cloth and cotton for protection against the cold. It is even less expensive than rubber footwear and the inhabitants can always use more of the native variety if the

supply of rubber footwear is reduced or becomes too expensive. Postwar imports of rubber footwear are likely to decline.

B. EXPORTS

(1) Soybeans

Soybeans have been and will continue to be Manchuria's most important export, which formerly represented roughly one-third of the total value of her annual exports. The percentage distribution among major purchasing countries in some of the occupation years was as follows (computed from figures in the Japan-Manchoukuo Yearbook of 1940):

	<i>Total Value (in U. S. thousand dollars)</i>	<i>Egypt</i>	<i>Japan</i>	<i>Germany</i>	<i>China</i>	<i>Gt. Britain</i>
1934	51,473	28.8%	24.8%	22.6%	5.6%	8.5%
1935	36,547	12.5	32.7	17.0	9.2	14.8
1936	60,657	23.4	33.5	16.0	8.7	9.9
1937	65,087	33.7	38.3	18.8	2.3	1.8
1938	66,650	39.7	34.1	16.1	4.7	1.4

According to the above statistics the largest customers for Manchurian soybeans were Japan and Egypt, followed at a distance by Germany. That Egypt, with a population of 15,000,000 and herself producing soybeans, should have imported as large a volume as Japan is unbelievable at first glance, especially when Egyptian trade statistics (quoted by the Foreign Commerce Yearbook of 1939 of the United States Department of Commerce) show little trace of such large imports for home consumption. We must assume that Egypt merely played the role of transit center and that these imports were actually destined for Mediterranean and European areas.

Soybeans are endowed with such a wide range of uses that either in war or peace they always can find a market in countries where they are not grown or where their production is inadequate. In the form of whole beans, bean oil and beancake they are used respectively as food, fodder and fertilizer. When chemically processed they are used to make artificial butter, casein, sauces, artificial wool, alcohol, glycerine, explosives, enamels, linoleum, soap, lubricating oil, paints and many other products. The probable devastation of industries in both Europe and Japan will considerably decrease these industrial uses but as a food they will become more important than ever

to the hungry masses in Europe, the Middle East, China and Japan. Normally Manchuria produces 60% of the world supply of soybeans. Unless her production has been greatly reduced, an export market should be immediately available after the war.

The extent to which the production of soybeans has been curtailed as a consequence of being cut off from the European and Middle Eastern markets is not known. But inasmuch as their cultivation has long been established as part of a time-honored system of agriculture in which they are planted in rotation with kaoliang and millet, their production will not be greatly reduced so long as the farmer finds no better system of rotating his crops. As a result of shipping shortages both Japan and occupied China will find it increasingly difficult to secure rice supplies from French Indo-China and will probably use more and more soybeans as a staple in their diet. The ease with which they can be adapted to a great variety of uses as substitutes will also encourage the enemy to consume them on a much larger scale than heretofore, especially now that he is cut off from a number of materials essential to war production. A surplus supply therefore is unlikely even though export channels have been limited to Japan and occupied China. Consequently the production of soybeans probably will not show much of a decline as compared with that of occupation years.

The postwar prospects of soybeans as Manchuria's leading export seem fairly good. A considerable quantity, however, will probably be shipped to China proper to relieve food shortages there, in which case these exports would no longer be shown as such. Thus their total export value might show some decline as compared with the level of occupation years.

(2) *Beancake*

About 90% of beancake exports have gone to Japan where they were used extensively as fertilizer and animal feed and also in the manufacture of numerous industrial substitutes, bean flour and a large number of foods. The defeat of Japan may destroy her industries but will still leave her agriculture more or less intact. Japanese demand for beancake from Manchuria should therefore continue though possibly in somewhat smaller volume because of the reduced size of her population and the destruction of her soybean processing industries.

Beancake will also be badly needed in China proper since

her own postwar production will not be sufficient to meet the rehabilitation needs of Chinese farmers. A sizable quantity of beancake was already being imported by China proper during occupation years and such imports are likely to continue.

The oil mills using modern presses were concentrated in Dairen, Yingkow, Antung and Harbin and will probably suffer some degree of destruction should fighting spread to Manchuria. But innumerable native oil presses are scattered all over the country so that partial destruction of modern oil presses will not seriously affect the production of beancake.

(3) *Bean oil*

The major buyers of Manchuria's bean oil during the occupation years were Germany, China proper, Holland, Great Britain and the United States. Japan was not a major importer since she pressed soybeans for oil in her own mills. Bean oil was shipped to China proper mainly for cooking purposes and to other countries for the manufacture of lard and butter substitutes, soap, paint, varnish, glycerine and water-proofing materials. In the absence of kerosene, bean oil has also been used in China for lighting purposes.

Postwar China will probably continue to import a substantial quantity of bean oil from Manchuria, for her own production is unlikely to be sufficient to fulfill her food requirements. But such exports will not figure in the returns of Manchuria's foreign trade. Also, in view of her increased domestic production the United States may not import as much bean oil as previously. Similarly, European demand will be somewhat reduced since the partial destruction of industry during the war will cut down its industrial uses.

(4) *Millet*

Millet is an important food for the average Chinese farmer in Manchuria; it is also used for distilling native spirits and its stalks as fodder. More than 90% of millet exports usually went to Japan and Korea but after 1937 a substantial quantity was also shipped to China proper to relieve food shortages. Considered inferior to rice, millet nonetheless was eaten by Koreans while the rice they grew was shipped to Japan where millet was used for alcohol and fodder and occasionally as a food.

A defeated and impoverished Japan is unlikely to consume

so much millet as previously. Yet the Japanese may also have to eat it as Koreans have done although they at least will not be forced to export the rice they grow in Japan. Since Japanese production of alcohol and spirits may be sharply curtailed however, the export of millet is likely to decline.

(5) *Corn and maize*

About two-thirds of such exports were shipped to Japan and one-third to China. Corn and maize are used in Manchuria and China as food, fodder and distilling materials; in Japan, mainly for distilling and for making starches. Their postwar export will also decline.

(6) *Other beans, bran and fodder*

Japan was also the principal buyer of these products, used as food, fodder and industrial materials. While postwar Japan will be unable to import these on the former scale, possibly more of them will be exported to the Middle East and European countries. Some decline in their total export, however, is likely.

(7) *Peanuts*

During the early occupation years peanuts were exported principally to European countries such as Holland, Germany, Italy and France and only a minor portion to Japan. Later on though, more and more were purchased by Japan and in 1938 she took more than 50% of total shipments. The end of the war will probably reverse the direction of trade with European countries again in the market for peanuts. In view of the many uses to which they can be adapted, their postwar export probably will not fall far below the level of the occupation years.

(8) *Perilla seeds and perilla oil*

Perilla oil is a good drying agent and has been extensively used in paints and varnishes and for medical purposes. It is one of the few oils that can be used as a substitute for tung oil. During the occupation years about 90% of perilla seed exports were shipped to Japan where they were pressed for oil for export to the United States. About 70% of these perilla oil exports went directly to the United States and 20% to Germany. Thus the United States was the ultimate principal consumer of both perilla seeds and perilla oil.

In view of the current world shortage of drying oils the postwar market for perilla oil should be promising; the American paint and varnish industry should be capable of absorbing a larger quantity of perilla oil than was formerly imported from Japan and Manchuria during the occupation years. Either perilla oil or perilla seeds (or both) will be shipped to the United States in much larger quantities depending upon the oil pressing facilities available in Manchuria and Japan.

(9) *Sesame seeds*

Although during the occupation years nearly all sesame seed exports went to Japan, they should still be able to find a market elsewhere in case Japanese demand falls off postwar. Sesame seeds enjoy a number of industrial and food uses both in this country and in Europe and their export can be expected to increase moderately.

(10) *Hemp seeds*

The export of hemp seeds during the occupation years was distributed over a number of countries including Japan, France, Germany, Belgium and the United States. The oil pressed from hemp seeds is a kind of drying oil used in the manufacture of paints and varnishes—sometimes as a substitute for tung oil. Hemp is grown in Manchuria primarily for its tissues which are used for making nets, ropes, cloth and paper, while its seed is considered a by-product. In view of a prospective general shortage of drying oils in various countries, the postwar market for hemp seeds should be fairly good.

(11) *Bristles*

In exporting bristles to the United States, Great Britain and other countries Manchuria competed to some extent with China proper. Manchurian bristles are generally inferior to Szechuan bristles produced in China proper and were not widely used in making high-grade brushes. The increasing use of nylon as a substitute for natural bristles will limit the postwar export of bristles from both China proper and Manchuria.

(12) *Raw wild silk*

The mountainous regions of southern Manchuria produce wild silk from a certain species of silkworms raised on oak and

other kinds of leaves. It is mainly used to make pongee cloth for shirts, tablecloths and curtains. During the occupation years more than 90% of this export went to Japan where it was woven into pongee cloth and other fabrics for both domestic consumption and export. The use of wild silk as a textile material has interesting possibilities. While Japanese demand may fall off, exports to other countries such as the United States and Great Britain may be expanded.

(13) *Hides and skins*

Manchuria raises a large variety of animals, both domestic and wild. Presumably when the war ends so large a number of cattle, hogs and sheep will have been slaughtered to supply the needs of the enemy that little will be available for postwar export. The lack of an export channel on the other hand must have left many wild animals free to multiply. Manchuria is surpassed by few other countries in the world in her abundance of fur-bearing animal life. The sable, ermine, weasel, fox, racoon, lynx, otter, wolf, antelope and many others can be found in her hills and forests. A rising standard of living in the United States has created a steady demand for furs which will probably continue after the war; therefore the postwar harvest of Manchurian furs should certainly bring lucrative returns. We expect that exports in this category will greatly exceed the level of occupation years.

(14) *Timber and wood pulp*

Manchuria will continue to produce timber and pulp but most of these products will be shipped to China proper.

(15) *Coal*

Coal is the most important mineral Manchuria produces. The principal coal mines (all Japanese-operated) are Fushun, Yentai and Penhsihu under the management of the South Manchuria Railway, while Fushin, Hsian and Holikang are under the Manchuria Coal Mining Company. The full exploitation of coal resources has been a main objective of the enemy's economic policy in Manchuria.

During the occupation years coal production steadily increased from eight million tons in 1933 to more than twelve million in 1938. At the same time efforts by the enemy to

establish an iron and steel and also a coal liquefaction industry in Manchuria had caused coal consumption to increase faster than its production, resulting in a steady decline in coal exports from about four million tons in 1934 to barely three million in 1938. The percentage distribution of coal exports among the major importing countries during some of the occupation years ran as follows:

	<i>Total Value (in U. S. thousand dollars)</i>	<i>Japan and Korea</i>	<i>China</i>	<i>Hongkong</i>	<i>Great Britain</i>	<i>Netherlands India</i>
1934	13,736	82.5%	9.0%	3.0%	2.2%	0.8%
1935	11,707	85.5	6.5	3.4	2.7	0.6
1936	10,150	88.6	6.7	1.5	2.5	0.9
1937	10,252	89.0	5.0	2.1	2.4	0.9
1938	8,023	94.7	3.7	...	1.6	...

We can see from the above table that although the total value of coal exports was on the decline, Japan and Korea's percentage rose steadily until together they took nearly all of Manchuria's coal exports. It was estimated that Korea took about two-thirds of the combined quantity as her own coal production was limited by lack of good mines.

Should fighting spread to Manchuria before the war is won, it will probably reduce both her production and consumption of coal. The iron and steel plants at Anshan have already been heavily bombed and coal liquefaction plants also probably will be destroyed. Because coal mines are more difficult to bomb effectively than coal-consuming factories, postwar coal production should recover faster than coal consumption, in which case a substantial quantity of coal will still be available. Although Japan may cease to import coal in case of the wholesale liquidation of her industries, Korea on the other hand should continue as a large customer for Manchurian coal. Hongkong, the Philippines, Netherlands India and other countries may also import coal from Manchuria. By far the major proportion of her coal supply will go to China proper, however, but obviously it will no longer figure as an export. The postwar export of coal is therefore likely to show some further decline.

(16) *Salt*

Salt exports have gone entirely to Japan and Korea. Although the defeat of Japan will presumably reduce her industrial de-

mand for salt since neither she nor Korea produce enough for domestic consumption, they will continue to import it from Manchuria though in somewhat reduced quantities.

(17) *Shale oil and paraffin*

Any large quantity of shale oil and paraffin is unlikely to be available postwar since probably few of the producing facilities will escape destruction. Whatever is produced will be used for domestic consumption both in Manchuria and in China proper. The prospect that Manchuria will be able to export any kind of petroleum products does not look promising.

(18) *Magnesite*

Manchuria is believed to contain the largest and highest grade deposits of magnesite in the world. Magnesite is a raw material used in the manufacture of metallic magnesium and magnesium sulphate. It has been mined principally by the South Manchuria Mining Company and production during the occupation years was reported to have increased rapidly, reaching about 400,000 metric tons in 1938. Magnesite exports during the occupation years went principally to Japan and to a lesser extent to the United States, Germany and Great Britain. In view of the importance of magnesium alloy in the manufacture of aircraft, the production of magnesite must have been considerably increased to meet the needs of Japan's war production. The ever-widening knowledge of methods for treating metal ores and the increasing use of light alloys will make magnesite easily marketable in industrial countries. Postwar exports can be expected to increase.

(19) *Iron and steel*

Even though part of Manchuria's present iron and steel producing facilities may be spared destruction, whatever can be produced will be needed for urgent domestic consumption. Possibly Korea because of her proximity to Manchuria will import iron and steel to supplement her own production. Otherwise the output of iron and steel in Manchuria will be used for years to come to feed the industrialization program of both Manchuria and China proper. Little exportation along this line is therefore likely.

(20) *Ammonia sulphate*

What has been said of iron and steel also applies to this product. Postwar production of ammonia sulphate is likely to drop sharply, for such plants could hardly avoid destruction should fighting spread to Manchuria. Whatever can be produced will be used principally for domestic consumption while a small quantity will probably be exported to Korea.

* * *

Summing up, the postwar trade of Manchuria will average around a total import value of \$152,200,000 a year and a total export value of \$113,500,000, leaving a deficit of \$38,700,000 each year. The rise of the general price level in recent years has not been taken into consideration in these estimates. If we allow a 30% rise of the price level postwar, then the total import value would rise to \$197,660,000 a year and the total export value to \$147,550,000, leaving an annual deficit of \$50,110,000.

The prospect that Manchuria will incur a considerable excess of imports is due primarily to the strong possibility that many of her products otherwise available for export will be shipped to China proper for domestic consumption, while the latter will have little to offer her in return and so reduce her imports. Without such supplies from Manchuria the postwar trade deficit of China proper would certainly run into a far higher figure than estimated in the preceding section, while Manchuria's import and export trade might be just about able to break even. Thus the estimated deficit in Manchuria's postwar trade actually reflects a part of the deficit that would be incurred by China proper if Manchuria were not returned.

B. FORMOSA

An island of 13,800 square miles and lying off the coast of South China, Formosa was one of the first Chinese territories seized by Japan as a result of the Sino-Japanese War of 1894-95. Half a century has elapsed since it passed into Japanese hands, so that the Formosa of today—or rather the Formosa that will be returned—naturally will have changed in many respects.

But at the same time certain characteristics of the Formosan economy have been preserved by the conqueror.

Firstly, Formosa has remained primarily agricultural in her economy with about 75% of the native working population engaged in agricultural production. Japan's intention has never been to industrialize Formosa for the benefit of the inhabitants; her persistent aim has rather been to exploit to the fullest extent Formosa's resources for the exclusive benefit of the Japanese Empire. These resources happen to be more agricultural than mineral and Japan has tried to see to it that Formosa should contribute as many of the agricultural products needed by Japan as economically possible. Sugar, rice, tea and fruits (mainly bananas and pineapples) are the chief products she has been assigned to produce. These are not primarily intended for the consumption of Formosans but for export for the benefit of Japanese interests.

Secondly, the population of Formosa has remained predominantly Chinese. A population of 5,609,000 in 1937 was reported by the Japan-Manchoukuo Yearbook of 1940, of which 299,300 were said to be Japanese, 5,261,500 natives and 46,200 foreigners. About 93% of the natives were Chinese whose ancestors originally came from Fukien and Kwangtung provinces in South China, while most of the so-called foreigners were Chinese who came from China for temporary or permanent residence. The Japanese have failed to settle in Formosa in any great numbers; in a span of more than thirty years from 1905 to 1937 the Japanese population in Formosa increased from about only 60,000 to around 300,000. Nevertheless the livelihood of more than 5,000,000 Formosans has been completely controlled by the Japanese minority who make up the ruling class. The absence of any large Japanese population has primarily been due to the fact that its agricultural economy is capable of affording only a limited number of people a comfortable living. Incidentally this fact may in the future prove a blessing in disguise, for it will greatly simplify Formosa's post-war population problem.

Thirdly, the native population of Formosa has remained poor. The labor furnished by this population constitutes one important resource that has been fully exploited, for the Formosan farmer or laborer has been forced to live under a restrictive system of monopolies controlling all they produce as well as all they consume. Trade in rice, sugar, fruits, tea and

other products has been completely dominated by Japanese interests and the Formosan farmer can obtain only what the Japanese permit. Government monopolies have been established over salt, sake, opium and other products so that consumption needs are strictly regulated. The manufacture and sale of opium is a government enterprise bringing substantial revenues and siphoning off a major portion of what few savings may have been possible. Education has never been encouraged and the existence of only one university with 69 Formosan students in 1938 has been reported. The Japanese rule of Formosa is typical of the treatment meted out to her subjugated peoples.

While Japan has accomplished little for the benefit of the natives of Formosa, she has done much for the gain of her own people. Firstly, in order to make Japan self-sufficient in sugar, a great sugar industry has been built up—possibly at great cost to Japan herself because of the government subsidies and protective tariffs involved. Total production in 1937 amounted to about 1,007,352 tons, the major portion of which was exported. The industry is dominated by six Japanese corporations: the Taiwan, Dai Nippon, Meiji, Ensuiko, Teikoku and Showa Companies, which own and operate not only plantations and mills but railways and many subsidiary enterprises such as alcohol manufacture, pulp-making, lumbering etc. The political maneuvering of these companies for government subsidies and protective tariffs to maintain a high profit margin has long been a scandal in Japanese politics. Secondly, rice production in Formosa has been steadily increased so that a substantial quantity—as much as 50% of total output in fact—has been available for export to Japan. The collection and shipment of rice again has been monopolized by Japanese merchants. Thirdly, a tea industry has been developed. Formosan teas consist mainly of Oolong tea, Pouchong tea and black tea, among which Oolong has already enjoyed a wide market in America. Fourthly, a fruit industry has also come into being, which has engaged in the shipment of bananas, pineapples and oranges. The export of bananas especially has been a flourishing business, next only to that of sugar and rice. Fifthly, railways have been built with a mileage of 1,040 kilometers for government lines and 2,515 kilometers for private. A system of telegraph and telephone service has also been

instituted. Sixthly, a great naval station has been constructed on the coast, so that the island itself has become an important base for enemy war operations. Such are Japan's major achievements in Formosa during the past fifty years.

Under such circumstances Formosan trade has been directed almost entirely toward Japan and the countries under her occupation. Out of \$84,943,000 worth of imports in 1936 for instance, \$70,765,000 were supplied by Japan and Korea, \$5,694,000 by Manchuria and \$1,996,000 by the Kwantung Leased Territory. Out of \$112,591,000 worth of exports in the same year, \$104,158,000 were shipped to Japan and Korea, \$2,534,000 to Manchuria and \$1,163,000 to the Kwantung Leased Territory. The trade with Japan consisted largely of exports of foodstuffs in exchange for manufactured goods, while trade with other regions under Japan's control involved exchanges of each region's special products for consumption. The principal exports were sugar and rice, whose total value comprised more than 70% of the export trade and of which more than 90% went to Japan. These were followed by copper ore, bananas, tea, pineapples, alcohol and camphor; with the exception of tea and camphor, nearly all of these products also were shipped to Japan. The leading imports were cotton and silk fabrics, ammonia sulphate and other fertilizers, iron and steel, beancake, machinery, wood, chemicals, cigarettes, gunny bags, soybeans and fish. With the exception of iron, steel, a few items of machinery, chemicals and gunny bags, all such imports came from Japan and the regions under her control.

As for trade with other countries, it was limited to the exchange of only a few products not otherwise available. In respect to imports, some quantities of iron and steel, machinery, automobiles and chemicals were imported from European countries and the United States, gunny bags from India and a number of foodstuffs from China. Regarding exports, a substantial volume of tea used to be shipped to the United States and other countries, while sugar, coal and various fruits were sent to China in considerable quantities. But none of these ever comprised more than 3% of the total trade.

What will happen to Formosa's foreign trade after Japan is defeated? Inasmuch as the defeat of Japan will return Formosa to China, the artificial trade links Japan has welded will be broken. Former exports to Japan can also be sold to other

countries and thereafter Japan will have to buy Formosan products on a competitive basis. In this connection, a substantial quantity of sugar and rice will be shipped to China, which will badly need both of these commodities for domestic consumption. The export of Formosan sugar to China will be classed as domestic trade and duty free, while Japan probably will consume a good deal less sugar should war wipe out both her industries and part of her population. Likewise a considerable quantity of rice will be shipped to China instead of Japan. Since exports to China will not be considered in the returns on Formosa's foreign trade, the volume of her postwar exports will automatically fall off substantially.

Probably the population of Formosa also will be somewhat reduced. The Japanese ruling class there will certainly be liquidated and along with it will go the purchasing power which has induced imports of high-grade consumers' goods. In addition many natives have been drafted for labor battalions in the Japanese army and by the time the war ends a large number of them probably will have died. Not only will Formosa's population be smaller; its purchasing power will be even lower than during occupation years. In the absence of credits from foreign countries this lack of purchasing power obviously will cause imports to fall.

Thus we may reasonably expect a smaller volume of foreign trade for Formosa in the postwar period and at the same time a rapid strengthening of trade ties between China and Formosa. Like Manchuria, Formosa rightfully belongs to China because her population is predominantly Chinese. China will have need of her products and in due course of time will also supply her with a variety of Chinese goods. The economic door of Formosa will be open to traders of all countries; the United Nations can expect to enjoy a larger share of her trade than ever before. Her liberation will give Formosans complete control over their own resources. The profits derived from these resources will be utilized for their own benefit—to broaden educational facilities, improve communications, establish new industries, increase production and consumption and ultimately to lift themselves up from ignorance and poverty. The future of Formosa in short will be intimately linked with the future of China. For example, once China's foreign trade expands as a result of industrialization, so will that of Formosa.

With these assumptions in mind we undertake to estimate the postwar trade of Formosa as follows (in U.S. thousand dollars):

I. FORMOSA'S IMPORTS

	1936	1937	<i>Estimated Annual Value Postwar</i>
A. Capital goods			
(1) Machinery	4,311	3,013	3,000
(2) Iron and steel	7,402	2,915*	2,000
(3) Vehicles	2,606	1,143*	2,000
(4) Timber and wood	3,654	3,901	1,000
(5) Cement and construction materials	1,800	1,776	1,000
TOTAL	19,773	12,748	9,000
B. Producers' goods			
(1) Petroleum products	1,625	†	2,000
(2) Dyes and paints	723	875	500
(3) Chemicals and drugs	3,408	3,363	2,000
(4) Oilcake	4,339	3,926	4,000
(5) Ammonia sulphate	5,311	5,778	4,000
(6) Other fertilizers	4,170	5,746	4,000
TOTAL	19,576	19,688	16,500
C. Consumers' goods			
(1) Food, beverages and tobacco			
(a) Wheat and wheat flour	2,002	1,980	1,500
(b) Wheat bran	1,284	872	500
(c) Soybeans	1,416	1,619	1,500
(d) Sugar	331	275	....
(e) Fishery products	2,102	2,133	1,500
(f) Cigarettes	1,939	2,279	1,000
(g) Fruits, reeds and canned food	1,353	1,433	500
(h) Beer and sake	1,876	1,931	300
SUB-TOTAL	12,303	12,522	6,800
(2) Other consumers' goods			
(a) Cotton and silk fabrics	5,609	6,230	4,000
(b) Wool fabrics	587	514	100
(c) Underwear knit	732	896	500
(d) Gunny bags	1,700	1,673	1,500
(e) Yam and cordage	942	1,023	500
(f) Footwear	812	736	500
(g) Hat braids	337	291	200
(h) Paper	1,576	1,836	1,500
(i) Soap	674	773	300
(j) Matches	392	327	300
(k) Pottery	458	454	300
SUB-TOTAL	13,819	14,753	9,700
D. Other merchandise	19,472	33,052	10,000
GRAND TOTAL	84,943	92,763	52,000

* Incompletely reported

† Not reported.

II. FORMOSA'S EXPORTS

	1936	1937	<i>Estimated Annual Value Postwar</i>
A. Agricultural products			
(1) Sugar	48,210	55,104	20,000
(2) Rice	36,080	36,305	20,000
(3) Bananas	3,240	3,549	2,000
(4) Tea	2,983	3,697	4,000
(5) Pineapple	2,102	2,652	1,500
(6) Sweet potatoes	613	849	800
(7) Oranges	321	264	200
(8) Molasses	416	449	400
TOTAL	93,965	102,869	48,900
B. Forest products			
(1) Wood	602	615	1,000
(2) Camphor	1,548	1,288	1,200
(3) Camphor oil	505	566	500
TOTAL	2,655	2,469	2,700
C. Minerals			
(1) Salt	416	407	.....
(2) Coal	654	1,131	500
(3) Ores (copper)	4,538	*	2,000
TOTAL	5,608	1,538	2,500
D. Manufactured goods			
(1) Alcohol	1,695	2,194	500
(2) Cotton cloth	262	371	.....
(3) Rayon cloth	488	532	.....
(4) Hats and caps	712	941	400
(5) Paper and paper wood	584	890	.....
TOTAL	3,741	4,928	900
E. Other merchandise	6,622	15,276	5,000
GRAND TOTAL	112,591	127,080	60,000

* Incompletely reported.

* * *

The above estimates are briefly commented upon as follows:

I. IMPORTS

A. Capital goods

Because of her relatively small size, her lack of important mineral resources, and her self-sufficiency in sugar production and related facilities, Formosa may not need large imports of capital goods immediately after the war provided her production facilities have not been destroyed. Accordingly we can assume that such imports will run below 1936 and 1937 figures.

Most of these will be bought from the United States and Great Britain.

B. Producers' goods

Fertilizers have been indispensable for the growing of rice and sugar cane in Formosa, but local fertilizer production has been inadequate to meet her needs. Postwar she will undoubtedly continue to produce rice and sugar and imports of fertilizers will be absolutely necessary though probably on a reduced scale. Beancake as in the past will be supplied by Manchuria, but Japan will no longer be able to supply ammonia sulphate and other fertilizers should her factories be destroyed. Both Great Britain and the United States, however, will be able to supply fertilizers and also chemicals, drugs, dyes and paints, while petroleum products will come from Netherlands India and the United States.

C. Food, beverages and tobacco

We can assume that imports of this class of goods will decline because they are consumed mainly by the Japanese in Formosa, who we can expect will lose perhaps their lives and certainly their economic privileges after the war.

D. Other consumers' goods

The lack of purchasing power in the postwar period will lead to a diminished consumption of such goods and therefore to smaller imports. Probably a portion will continue to come from Japan because of their cheapness, while India will contribute gunny bags and some cotton goods. After recovering from the devastating effects of the war China proper should be able to take care of most of these requirements.

II. EXPORTS

A. Agricultural products

No doubt for a long time to come Formosa's principal exports will continue to be sugar, rice, tea and such tropical fruits as bananas and pineapples. The production of sugar and rice is especially important to her economy since their export has generally comprised more than 70% of total exports. The war will almost unavoidably cause damage to Formosan sugar

mills and possibly sugar production will be greatly reduced immediately afterwards. Aside from shipments to China (which do not enter into this estimate) the greater portion of sugar exports will probably continue to go to Japan. The production of sugar and rice is not likely to be much reduced over the long run, but a good deal of it will be exported to China.

Formosan tea, shipped largely to the United States during occupation years, will probably enjoy a wider postwar market. Indications are that the consumption of tea in the United States is increasing, and Formosan tea will no longer be regarded as Japanese. Formosan tea production probably will not suffer any ill effects from the war.

B. Forest products

As a timber producing country Formosa probably will export more wood in the absence of Japanese competition. The export of camphor and camphor oil will probably run around the former level.

C. Minerals

The export of salt will probably cease in case Japan's industries are severely crippled, for whatever reduced quantities of salt Japan would need could be more easily obtained from Manchuria and North China. Some coal and ores (consisting mainly of copper) will be exported to Japan.

D. Manufactured goods

If Formosa's distilling plants do not suffer wholesale destruction, some quantity of alcohol will be produced from molasses and will be shipped to both China and Japan. The export of hats and caps will also continue. But with regard to other items, either their production will be so far reduced that no exportable surplus will be available or they will be shipped entirely to China, in which case they would not figure in Formosa's foreign trade.

Thus in the postwar period Formosa's imports probably will average around \$52,000,000 a year and her exports \$60,000,000, leaving a surplus of about \$8,000,000. Allowing a 30% rise in the general price level however, the total import value will be \$67,600,000 and the total export value \$78,000,000, leaving a surplus of \$10,400,000. The possibility of such a surplus is based

on the fact that for years the economy of Formosa has been geared to the production of exportable commodities and on the assumption that this type of production will continue in the postwar period. We likewise assume that the presence of a large subjugated population will obviate the need for conducting a long and bloody campaign throughout Formosa and that at least a portion of her production facilities therefore will still be left intact. Should this not prove the case, then such a surplus may not materialize.

CHAPTER VIII

CHINA'S MEANS OF PAYMENT

By combining the estimates given separately in regard to the postwar trade of China proper, Manchuria and Formosa we may be able to obtain a general picture of China's postwar trade. The following table therefore shows the possible yearly values of postwar imports and exports for China proper, Manchuria and Formosa separately and for China as a whole. As stated previously such estimates must be considered partly guesswork and as useful only to the extent that they reflect the historical connection that may exist between China's past and future trade.

An Estimate of China's Postwar Imports
(Yearly value in U. S. thousand dollars)

	<i>China Proper</i>	<i>Manchuria</i>	<i>Formosa</i>	<i>Total</i>
I. CAPITAL GOODS				
A. Machinery and tools	67,200	20,000	3,000	90,200
B. Iron and steel	40,000	12,000	2,000	54,000
C. Non-ferrous metals	6,000	1,000	*	7,000
D. Railway equipment	20,000			
E. Automobiles and bicycles	14,000	10,000	2,000	46,000
F. Airplanes and ships	4,000	*	*	4,000
G. Timber	12,000	3,000	1,000	16,000
H. Cement and related products	2,000	500	1,000	3,500
TOTAL	165,200	46,500	9,000	220,700
II. PRODUCERS' GOODS				
A. Petroleum products	30,000	4,000	2,000	36,000
B. Dyes and paints	10,000	2,000	500	12,500
C. Chemicals and pharmaceuticals	16,000	4,000	14,000	34,000
D. Rubber and rubber goods	4,000	*	*	4,000
E. Coal and fuel	1,200	.....	.....	1,200
F. Wood, bamboo and rattan	2,300	*	*	2,300
G. Raw cotton	10,000	5,000	.....	15,000
H. Wool	3,000	*	*	3,000
TOTAL	76,500	15,000	16,500	108,000
III. CONSUMERS' GOODS				
A. Food, beverages and tobacco				
(1) Cereals and flour	27,000	13,000	2,000	42,000
(2) Sugar	5,000	1,000	.....	6,000

*Included in sundries.

CHINA'S POSTWAR MARKETS

An Estimate of China's Postwar Imports—Continued

	<i>China Proper</i>	<i>Manchuria</i>	<i>Formosa</i>	<i>Total</i>
(3) Tobacco	4,500	1,000	1,000	6,500
(4) Fishery and sea products	3,000	3,000	1,500	7,500
(5) Fruits, seeds and vegetables	1,500	3,000	2,000	9,500
(6) Canned goods and animal products	3,000			
(7) Medicinal substances	2,000	*	*	2,000
(8) Wine and beverages	500	1,000	300	1,800
TOTAL	46,500	22,000	6,800	75,300
B. Other Consumers' Goods				
(1) Cotton piece goods and cotton yarn	25,000	15,000	5,000	45,000
(2) Woolen goods and yarn	4,000	3,000	100	7,100
(3) Rayon goods	5,000	4,000	†	9,000
(4) Flax, ramie, hemp and jute products	5,000	5,000	1,500	11,500
(5) Paper and paper products	15,000	6,000	1,500	22,500
(6) Hides, leather and other animal substances	1,000	*	*	1,000
(7) Glass and chinaware	1,000	800	300	2,100
(8) Fats, oils and resin (including petroleum)	1,500	*	*	1,500
(9) Photographic goods	2,000	500	*	2,500
(10) Sundries	27,000	34,400	11,300	72,700
TOTAL	86,500	68,700	19,700	174,900
GRAND TOTAL	374,700	152,200	52,000	578,900

An Estimate of China's Postwar Exports
(Yearly value in U. S. thousand dollars)

	<i>China Proper</i>	<i>Manchuria</i>	<i>Formosa</i>	<i>Total</i>
A. Agricultural Products				
(1) Soybeans	....	45,000	....	45,000
(2) Wood oil	30,000	....	....	30,000
(3) Sugar	....	....	20,000	20,000
(4) Rice	....	....	20,000	20,000
(5) Tea	15,000	....	4,000	19,000
(6) Beancake	1,000	16,000	....	17,000
(7) Peanuts	3,100	3,000	....	6,100
(8) Fruits and nuts	2,000	....	3,700	5,700
(9) Cotton, raw	5,000	....	....	5,000
(10) Sesamum seed	3,000	2,000	....	5,000
(11) Other beans	1,000	3,000	....	4,000
(12) Medicinal plants	3,500	....	....	3,500
(13) Peanut oil	3,000	....	....	3,000
(14) Perilla oil	....	3,000	....	3,000
(15) Bean oil	....	3,000	....	3,000
(16) Corn	....	3,000	....	3,000

*Included in sundries.

†Included in cotton piece goods.

An Estimate of China's Postwar Exports—Continued

	<i>China Proper</i>	<i>Manchuria</i>	<i>Formosa</i>	<i>Total</i>
(17) Millet	50	3,000	....	3,050
(18) Vegetables	2,000	....	800	2,800
(19) Tea oil	2,000	....	....	2,000
(20) Perilla seed	....	2,000	....	2,000
(21) Sorghum	....	2,000	....	2,000
(22) Cottonseed oil	1,200	....	....	1,200
(23) Bran and fodder	100	1,000	....	1,100
(24) Bamboo	1,000	....	....	1,000
(25) Ramie	1,000	....	....	1,000
(26) Hempseed	....	1,000	....	1,000
(27) Linseed	800	....	....	800
(28) Straw Braid	700	....	....	700
(29) Castorseed	....	500	....	500
(30) Tobacco leaf	500	....	....	500
(31) Molasses	....	....	400	400
(32) Buckwheat	....	400	....	400
(33) Rapeseed	300	....	....	300
TOTAL	76,250	87,900	48,900	213,050
B. Forest and animal products				
(1) Furs and skins	12,000	3,000	....	15,000
(2) Egg products	10,000	*	....	10,000
(3) Silk, raw, wild and waste	9,000	1,000	....	10,000
(4) Bristles	6,000	1,000	....	7,000
(5) Sheep wool	6,000	*	....	6,000
(6) Feathers	2,100	....	....	2,100
(7) Sausage casing	2,000	....	....	2,000
(8) Cattle hides	1,400	....	....	1,400
(9) Timber	....	300	1,000	1,300
(10) Camphor	....	....	1,200	1,200
(11) Camel wool	1,000	....	....	1,000
(12) Human hair and nets	1,000	....	....	1,000
(13) Camphor oil	....	....	500	500
(14) Hogs	500	....	....	500
(15) Meats	500	....	....	500
(16) Woodpulp	....	300	....	300
(17) Nutgalls	300	....	....	300
(18) Lard	250	....	....	250
TOTAL	52,050	5,600	2,700	60,350
C. Mineral products				
(1) Tin	8,000	....	....	8,000
(2) Coal	500	5,000	500	6,000
(3) Tungsten	4,000	....	....	4,000
(4) Antimony	3,500	....	....	3,500
(5) Magnesite	....	2,000	....	2,000
(6) Copper ores	....	....	2,000	2,000
(7) Salt	300	1,000	....	1,300
(8) Iron and steel	....	1,000	....	1,000
(9) Ammonia sulphate	....	1,000	....	1,000
TOTAL	16,300	10,000	2,500	28,800

An Estimate of China's Postwar Exports—Continued

	<i>China Proper</i>	<i>Manchuria</i>	<i>Formosa</i>	<i>Total</i>
D. Manufactured and handmade products				
(1) Linen goods	5,000	....	....	5,000
(2) Wool carpets and rugs	1,500	....	....	1,500
(3) Silk piece goods	1,200	....	....	1,200
(4) Silk pongees	1,000	....	....	1,000
(5) Cotton yarn	1,000	....	....	1,000
(6) Cotton and other textile goods	1,000	....	....	1,000
(7) Curios and antiques	1,000	....	....	1,000
(8) Hats	500	....	400	900
(9) Alcohol	....	....	500	500
(10) Silk embroidery	500	....	....	500
(11) Mats	500	....	....	500
(12) Paper	500	....	....	500
(13) Chinaware	200	....	....	200
(14) Fire works	100	....	....	100
TOTAL	14,000	*	900	14,900
E. Other Merchandise	20,000	10,000	5,000	35,000
GRAND TOTAL	178,600	113,500	60,000	352,100

* * *

Thus the postwar foreign trade of China as a whole may well reach a total import value of \$578,900,000 and a total export value of \$352,100,000 a year, leaving an annual deficit of \$226,800,000. Allowing a 30% rise in the general price level, the total value of imports rises correspondingly to \$752,570,000 a year and that of exports to \$457,730,000 with the resultant excess of imports over exports amounting to about \$294,840,000 a year. How will China find it possible to make up this annual deficit of nearly \$300,000,000 in her postwar trade?

Normally a country obtains the means to pay for its imports in a number of ways. What it receives in the form of goods or services it may pay for with tangible items such as exports of commodities and precious metals. It may also balance its trade by remittances from nationals in foreign countries, remittances from foreign investments, foreign credit balances previously accumulated, remunerations from transportation and insurance services, reparations from foreign countries and other types of foreign income. In prewar years China was able to balance her payments mainly through remittances from overseas Chinese, occasionally by shipment of precious metals to foreign countries and to a still lesser extent by an influx of foreign money for investment or religious purposes. Some time before the war

broke out, the Chinese Government abolished its silver standard and succeeded in selling large quantities of silver to the United States Government. The credit balance realized from the sales together with overseas remittances helped to take care of the excess of imports over exports that occurred in the last four pre-war years and the first two war years.

After more than a year of fighting however, nearly all of China's supply of precious metals had been shipped abroad and sold. But at the end of 1938 a wood oil credit of \$25,000,000 was granted China by the United States Government for the purpose of making purchases. Similar credits were obtained from Great Britain and elsewhere so that China began to pay for her imports by means of credits obtained abroad. In fact she actually paid for them with future exports because these grants of credit were all based on the promise to deliver certain quantities of Chinese products to the lending countries over a period of several years. Further credits of a similar nature were obtained in 1939 and 1941.

Meanwhile overseas remittances continued as an important means of offsetting the excess of imports over exports until the extension of hostilities in the Pacific area at the end of 1941 drastically reduced their amount. The enemy quickly occupied the south sea regions, including the Philippines, Netherlands India, French Indo-China, the Malay Peninsula and Burma, where the bulk of Chinese remittances originated. Tremendous losses were inflicted on the properties and enterprises of these overseas Chinese, while those at home, who formerly received such remittances as the dependent members of their families, had scattered or died as a result of fighting or famine in South China. After the war Chinese overseas will need considerable time to recuperate from their misfortunes and re-establish their family connections in China for whom such remittances are sent. Not only during the war but for some time afterwards therefore, remittances from overseas Chinese cannot be counted on as a very important factor in balancing China's international payments.

Since the initiation of the lend-lease program China has been supplied by the United States with various war materials without incurring the necessity of corresponding payments in kind or in cash for the time being. These materials are supplied to China on the solemn understanding that she will continue in

the war as a member of the United Nations against the common Axis enemies. In the absence of any sizeable reverse lend-lease and pending the final determination of the terms on which such aid will be repaid, lend-lease can be considered as being paid back politically and militarily by China's total contribution to the United Nations' war effort and therefore will not be entered on the normal balance sheet of international debits and credits. In the final settlement China is unlikely to be called upon to pay for those lend-lease materials which have been already consumed in the war though possibly she may be asked to pay for any surplus left over when the war ends.

In the meanwhile, because of the difficulties of transportation and the strict control of exports instituted by the United States and British governments, China can make few purchases herself but rather must rely on whatever she can get under lend-lease. Since generally she has not been paying in cash for her imports, the series of credits she has obtained from the American and British governments have not been spent. A part of the proceeds of these credits has been used to issue United States currency savings certificates as a measure for curbing inflation. Since the buying public for these certificates consists mainly of Chinese individuals and institutions, the transaction merely results in conversion of government credit balances into private balances in the United States with the proceeds remaining in Chinese hands. They will prove to be a means of payment when lend-lease aid is halted at the conclusion of the war.

Thus while the war has adversely affected China's two most important means of international payment—the shipment of gold and silver and the remittances of overseas Chinese—it has also in effect given China another means of payment in the form of unused credits obtained from the Allied governments. The United Nations Relief and Rehabilitation Administration will make available to China still another source of funds to pay for her imports. If the terms of peace so dictate, it may also give China a third means of payment in the form of reparations from the enemy. In addition long-term political stability after the war will bring a fourth means of payment in the form of new credits granted to China by government or private sources abroad and of an influx of foreign capital for investment purposes. We should also note that China did not exhaust all her credit balances in foreign countries before she obtained new

foreign credits. Such credit balances represented the working funds of the Chinese banks, for financing foreign trade, the proceeds remaining from the sale of silver and gold in the case of government balances and the wartime flight of capital in the case of private accounts. But since these prewar balances are not believed to be very large and part of them must be retained as a minimum requirement to finance trade, their use as a postwar means of payment will be rather limited.

China will therefore possess the following important means of meeting her trade deficits in the postwar period:

- A. Reparations from the enemy
- B. Unused credits, UNRRA funds and remittances
- C. New credits and investments from foreign nations

The purpose of this chapter is to examine separately the possibilities and the efficacy of such means of payment in the light of the conditions likely to prevail in the postwar world.

B. REPARATIONS FROM THE ENEMY

One logical means of payment to offset the postwar excess of imports over exports may be reparations from the enemy. The Cairo Conference agreed that Manchuria, Formosa and the Pescadores Islands will be returned to China as soon as the war is won. In these territories the enemy has made huge investments in railways, power plants, mining enterprises, plantations and various types of factories. These should be taken over by the Chinese Government and, if left intact, operated for the general benefit of the people living in these areas. Nevertheless this form of reparation can only further the economic development of the regions where they are situated and cannot be used immediately as a means of payment. Although in the long run their economic development will create additional foreign balances for China as a whole, whatever balances are created in the immediate postwar period through the exportation of their products will be used to pay for their own postwar purchases; these will probably be as heavy as those of China proper in view of their similar need for further industrialization, especially in Manchuria.

In addition to the enemy's investments in returned territories, his holdings in China proper will also be confiscated by the Chinese Government. The greater part of such investments is

tied up in cotton mills with a total of more than 2,500,000 spindles in the last few prewar years. If these mills escape destruction, they will help to relieve to some extent the desperate need for clothing materials and thereby entail somewhat smaller purchases of textile products and machinery from abroad. Their contribution toward the balancing of China's international payments will depend mainly upon the degree to which they escape destruction rather than upon their usefulness as an item of reparations. The mere transfer of ownership from one country to another does not of itself provide additional foreign balances unless such investments are sold to a third country, which is unlikely.

Apparently therefore, reparations which take the form of confiscation of investments in returned territories and in China proper, while helpful to the postwar economy of China as a whole, cannot be used as an effective means of payment for her postwar purchases. In order so to be used, reparations must come from the enemy's own country, either in kind or in cash held by the enemy in foreign countries.

The amount of reparations to be paid by Japan should be governed by three principles. Firstly, the amount should not be unbearable and should be commensurate with her productive capacity. What will be the point of fixing some fantastic sum which can never be paid? Preferably payments should be limited to a period not exceeding nine or ten years, let us say, so that the enemy will not be burdened almost indefinitely with payments which from his point of view are completely unproductive.

Secondly, it will be important for Japan to pay the major portion of reparations in the form of her existing capital goods—namely her industrial plants and equipment. The future peace of the world will certainly require the reduction of Japan's war potential—that is, the capacity of her industrial production as a whole and especially of her heavy industries. To force Japan to make reparations in terms of industrial products over a period of years will only encourage her industrial production and strengthen her sinews for a war of revenge. But to force her to pay in terms of her existing industrial equipment will at least temporarily retard her industrial development while at the same time it will help to speed up China's own industrialization program.

Japan will not starve by any means as a result of the loss of her steel mills, machine works, airplane factories and chemical works any more than she is starving now when all of these facilities are devoted to the manufacture of war weapons. Furthermore provisions can be made for permitting part of Japan's population to emigrate to China and Manchuria and there engage in peaceful occupations. In the long run the people of the world must live together peacefully and no harm will come from such a co-mingling of populations in a process of mutual assimilation.

Thirdly, it will be desirable that a portion of Japanese reparations be paid in terms of the cash balances she may hold in the United States and Great Britain so that China may utilize them for making her own purchases. While the removal of a part of Japan's industrial facilities to China will undoubtedly help the latter to push her program of industrialization forward more quickly, most of such facilities are used, already out-of-date, will have to be repaired and renovated and at best will only be able to meet a small part of China's industrial needs.

To procure the most efficient means of production and quicken the tempo of her industrialization, China still will need to buy by far the major proportion of her capital goods from the United States and other countries. Since presumably, Japan will still be able to export some goods in the postwar period, she will also have new foreign cash balances, part of which should be transferred to China.

What then will be the total amount of reparations China may expect to obtain from Japan once the war is over? We can assume that all Japanese investments in China proper and returned territories will be expropriated if they escape destruction, but they will be of little use as a means of payment for China's postwar purchases. How much China will obtain in the light of the three principles mentioned above will depend entirely upon the state of exhaustion of the vanquished enemy. Quite possibly the major portion of Japan's industrial facilities will have to be bombed to destruction before she surrenders; in this case little industrial equipment will be available for reparations. Conservatively speaking, China should not count definitely on reparations as an important means of offsetting her postwar excess of imports over exports; the future is entirely too uncertain.

Nevertheless, no matter what may befall Japan during the course of the war, it should not be asking too much to require her to contribute annually about \$100,000,000 worth of capital goods and foreign balances to China over a period of ten years. In the last few prewar years Japan's annual export trade amounted to about \$800,000,000 and the export of silk alone amounted to more than \$100,000,000. When the war is over, she will probably still retain a population of sixty-five to seventy million; the payment of \$100,000,000 a year would therefore mean only an annual contribution of \$1.50 per capita. While nothing definite can be said as yet, it is only fair that after suffering so much and so long at the hands of Japan, China should expect redress from her in the way of furnishing at least a partial means of payment for China's postwar purchases.

C. UNUSED CREDITS, UNRRA FUNDS AND REMITTANCES

If reparations do not cover China's entire postwar excess of imports over exports, then she will have to draw upon the unused credits she has obtained from the Allied governments during the war. The first such credit granted her during the war was the \$25,000,000 wood oil credit of 1939 arranged between the Export-Import Bank of Washington and the Universal Trading Corporation, a Chinese Government agency. This credit took the form of a commodity loan whose proceeds were to be used for the purchase of American products, while repayment was to be made by the delivery of certain quantities of wood oil over a period of several years for sale in the United States. At the time the credit was established, the United States was neutral and could not grant China a political loan without inviting serious repercussions both at home and abroad. But since American industry needed wood oil and the Chinese Government needed materials and supplies to carry on the war, the grant of a commodity credit proved a happy solution of the two problems.

During the ensuing two years this credit set the pattern for a number of similar arrangements made by China with the United States and Great Britain. Then credits were also obtained to support the exchange value of Chinese currency, which after two years of fighting had begun to break down

owing to the depletion of the exchange resources of the Chinese Government. Following the entry of the United States into the present World War a credit of \$500,000,000 was granted to China by the United States Government with the approval of Congress. A similar but smaller credit was also promised to China by Great Britain. Up to the present China has obtained the following credits from the United States and the British governments:

I. From the United States Government

A. Wood oil credit	1939	\$ 25,000,000
B. Tin credit	1940	20,000,000
C. Tungsten credit	1940	25,000,000
D. Currency Stabilization loan	1941	50,000,000
E. Minerals credit	1941	50,000,000
F. Credit loan	1942	500,000,000
TOTAL		\$670,000,000

II. From the British Government

A. Export credit	1939	£ 3,500,000
B. Currency Stabilization credit	1939	5,000,000
C. Currency Stabilization credit	1940	5,000,000
D. Credit loan	1941	5,000,000
E. Credit loan	1942	50,000,000
TOTAL		£68,500,000
Converted to US\$ at 4		\$274,000,000

The wood oil credit of \$25,000,000 had been used and fully repaid by means of wood oil shipments by March 30, 1942—about two years ahead of maturity. The proceeds of the tin credit, the tungsten credit and the minerals credit are believed to have been partially used and committed for purchases, but whatever remains will amount to very little since the size of each loan was relatively small.

The currency stabilization credit of 1941 must also have been partially used. Of the credit loan of \$500,000,000, \$100,000,000 has been used to finance the issue of United States currency savings certificates up to the same amount. To the same extent as the sale of these certificates represents a transfer of Chinese Government funds in the United States into the hands of Chinese private individuals can this sum be considered largely unused; the funds so transferred will still be available for purchases by such individuals. Some may of course prefer to hold on to their funds instead of making purchases, so that their availability as a means of payment may be more limited.

Recent reports have indicated that arrangements have been made for the United States Government to ship \$200,000,000 worth of gold for sale in China as a measure to curb inflation and prepare her for the adoption of a gold standard in the postwar period. To the same extent as this gold will be shipped back again to cover China's deficits in international payments can it also be considered unused credit. But undoubtedly a substantial portion will be hoarded and never emerge into the open market unless forced out by government action. Thus probably only one-quarter or one-third of this gold will be available as a means of payment for China's postwar purchases. Furthermore so long as the war continues, the Chinese Government will have to meet all its expenses in foreign countries and to service all its foreign loans by means of unused credits. After making such allowances we can conclude that by the end of the war China will probably have a credit balance of about \$300,000,000, created directly or indirectly by United States credits.

With regard to the credits obtained from the British Government, all of the export credit of 1939 must have either been used or committed for purchases while the currency stabilization credits of 1939 and 1940 also are believed to have been used. The present status of the credit loans of 1941 and 1942 is unknown but we may assume that only part of them can be used postwar. Conservatively, we estimate that about £25,000,000 or US\$100,000,000 will be available from British credits.

Thus immediately after the war China will be able to lay claim to at least \$400,000,000 in unused credits as balances. If these are used to offset the estimated postwar excess of imports over exports—a deficit, that is, of about \$300,000,000 a year—they will last little more than a single year. If China succeeds in obtaining reparations from the enemy to the extent of \$100,000,000 a year, let us say, these unused credits will last somewhat longer. Obviously the less China obtains from reparations the more she will have to draw upon unused credits.

Possibly overseas remittances will serve to make up a small part of this deficit but it is doubtful whether they will amount to more than \$50,000,000 at most. Remittances from overseas Chinese should be distinguished from remittances made by Chinese who may convert the proceeds of United States currency savings certificates into Chinese currency. The latter

transaction represents only a transfer of funds from private to government accounts and does not result in any addition to China's available balances. Remittances will also be received from foreign governments in payment for expenditures incurred by their troops and diplomatic officials in China. These will amount to a considerable sum, decidedly larger than what China will remit to pay for diplomatic representation, so that the balance should be available for meeting a portion of China's trade deficit. The total amount of such remittances will be settled by negotiations between the governments concerned. Still another form of remittance will come from foreign nationals to support missionary and charitable organizations in China but these are unlikely to be larger than the remittances received from overseas Chinese.

Immediately after the war we can expect that an appropriate sum will be granted by the United Nations Relief and Rehabilitation Administration for the relief of Chinese populations in war-torn areas. The degree of such assistance is already reported under consideration. This aid should help materially to reduce the initial deficit China will incur.

Probably during the first year after the war when the question of reparations still may be under discussion and the volume of exports will be handicapped by transportation difficulties, nearly all purchases of capital goods and food supplies will have to be met from funds made available by UNRRA and unused credits. As conditions return to normal, exports again will begin to move out of China and the foreign balances built up thereby will become an increasingly important means of payment for her purchases abroad. The importance of UNRRA funds and unused credits as an effective means of bridging the gap between the cessation of hostilities and the revival of China's export trade, and also as a means of procuring materials and supplies for immediate postwar requirements can hardly be over-emphasized.

Assured of such credits and financially reinforced by the enemy's reparations, China should be able to tackle her currency problems with a reasonable hope of success. So long as she can find adequate means to pay for her bona-fide purchases abroad her currency can be reasonably well stabilized. The most trying period with respect to the maintenance of stability will come during the first two or three years after the cessation

of hostilities—a time when imports will far exceed a very limited volume of exports and a time of lingering distrust of the newly established currency. Yet if our estimates are correct, China should have ample resources to cover her purchases and other requirements in this period.

At the conclusion of this critical period however, more and more exports will begin to flow abroad. Overseas Chinese again will begin to send home their remittances. A politically stable government will inspire increased confidence in the value of Chinese currency. Perhaps some of the gold now being shipped to China will be returned to serve as a means of payment while a considerable part of the private balances built up through the purchase of United States savings certificates will be liquidated to finance purchases. As time goes on the various means of payment will become more numerous and more substantial.

The level at which the postwar Chinese currency should be stabilized is a problem unsolved thus far; but undoubtedly the level of stabilization will exert a profound effect on the whole course of China's trade. It might encourage imports at the expense of exports or vice versa and probably will have to be adjusted from time to time to cope with changing conditions.

As we pointed out in a preceding section, an excess of Chinese imports over exports is very likely to continue for some time. But the nature of this excess in the immediate postwar period will differ from that which will occur thereafter. No matter how little China exports, she must import a minimum quantity of goods in the first period. Failure to provide adequate means for the payment of such purchases would further lower the living standard of the Chinese people, render impossible the task of stabilizing the Chinese currency and might cause suffering and chaos resulting in serious political repercussions, both internal and external.

If China succeeds in passing through this most difficult period, however, the excess of imports over exports thereafter will be governed less by the absolute necessity to import and more by the availability of other means of payment in addition to exports. If for instance overseas Chinese send home more remittances and more credits are made available by foreign countries, China certainly will be able to buy more goods abroad. Consequently the excess of her imports over exports will tend to be larger. In this case an excess of imports will not

mean they are a matter of necessity but simply that China prefers to import more in order to quicken the process of industrialization and raise the living standards of her people. Should sufficient remittances or credits not be forthcoming, then China would have to cut her purchases, slow down industrialization and wait patiently for steadily increased exports to make possible a greater volume of imports. Some kind of trade controls would have to be continued to prevent too serious an excess of imports. Thus the excess of imports over exports in the latter period would be fairly adjustable without causing undue disturbances in Chinese economy.

D. NEW CREDITS AND NEW INVESTMENTS FROM FOREIGN NATIONS

In order to accelerate industrialization in China, raise the purchasing power of the Chinese people, develop trade relations between China and other nations and thereby to foster peace and good-will in the family of nations, it will be highly desirable that new credits and new investments be made available to China. Naturally their availability will depend a great deal upon China's own efforts. The fundamental factors which attract capital are security and profit. To assure capital security a politically stable government, the avoidance of future civil warfare and an efficient and honest administration will be prime requisites. To assure capital profit China must give due protection to foreign-owned enterprises, refrain from taxing them too heavily or discriminatively and promote fair competition as against monopolistic practices. In such a country as China the margin of profit must necessarily run a little higher than in more industrialized countries in order to attract and justify the entry of venture capital.

Only the passage of time can give the outside world confidence in the political stability of a country. Since 1937 China has been more politically united than ever before in modern times, yet admittedly fears have been expressed whether even such unity as has been achieved can long endure after the war. The future political stability of China may be as much a certainty as the victorious conclusion of the war but time alone will tell. However, indications are definite that the Chinese Government plans to encourage foreign investments, give them due protection and equitable opportunities for profits and

promote cooperation between Chinese and foreign enterprises. As resolved by the Central Executive Committee of the Kuomintang (in effect the policy-making organ of the Chinese Government) all restrictions applying to joint Chinese-foreign enterprises will be revised. The Committee further resolved that negotiations for foreign loans for state enterprises shall be centralized and that individuals may negotiate foreign loans for private enterprises with the approval of the government. Of course the abolition of extra-territorial rights and the abrogation of the unequal treaties have created for foreign business in China an entirely new situation to which they will have to adjust themselves in the postwar period.

In view of the above considerations, whatever new credits can be made available to China at the beginning of the postwar period are likely to come largely from foreign governments or through the guarantees of foreign governments, which usually can afford to take greater financial risks than private businesses or individuals. In granting China credits, foreign governments will not merely be seeking security and profit for their funds but will also be attempting to promote their own trade and industry. Such credits will naturally be used directly or indirectly to facilitate or finance purchases in the country granting them, thereby creating more employment and a market for its products. Should such credits prove successful, duly serviced and punctually repaid, and should the passage of time leave Chinese political stability no longer open to doubt, then private capital will presumably take increasing confidence in her economic strength and ability to repay. More and more funds from private sources either in the form of short-time credits or long-term investments will begin to flow into China. Eventually private funds may even take care of all the credits required so that credits from foreign governments will be entirely unnecessary.

An international financial organization such as the proposed International Stabilization Fund or the proposed Bank for Reconstruction and Development of the United and Associated Nations may provide still another source of new credits. In order to enable China to achieve monetary stability for example, the International Stabilization Fund may from time to time furnish China with foreign exchange as a means of meeting a temporarily adverse balance of payments. Upon the establish-

ment of the Bank for Reconstruction and Development, China should also be able to obtain certain long-term credits for reconstruction and for the development of productive resources. Probably the availability of long-term credits from the Bank will obviate the necessity of applying to individual foreign governments for credits, for the Bank itself will represent a pooling of resources from all the governments. Since such credits are no substitute for private investment, the Bank would not make loans or investments that could be secured from private sources on reasonable terms. The principal function of the Bank would be to guarantee and participate in loans made by private investment agencies and to lend directly from its own resources whatever additional capital may be required.

To what extent China will be able to secure credits or loans from such international agencies cannot be ascertained at this time, since they are still under discussion and study. But that some form of international financial organization will emerge out of the war is a foregone conclusion. A financial organization of this nature will be as necessary as it will be practical. Detached more or less from the influence of any particular government, it could grant credits without incurring suspicion of ulterior political motives and on terms most advantageous to the borrowing parties.

Thus sources of new credits may be private, governmental and international and from each separate source various types may be available. What types of credits, we may ask, will be most desirable for both China and the lending party in the postwar period? A brief examination of the major types of credits which China may be granted is presented as follows:

(1) *Political credits*

A political credit or loan granted by one government to another carries no definite terms of repayment or interest charges and serves a purpose apart from that of promoting commercial and financial relations between the two countries concerned. Unless China again is forced to fight in alliance with other countries against a common enemy, new political credits probably will not be forthcoming. A political credit naturally involves political motives and China's interests will not best be served in a period of postwar recovery and reconstruction by too many entangling political commitments.

Every credit sought should have a definite purpose behind it as well as a practical means of repayment. The ability to repay depends upon the ability to produce. If China can increase her productive power by virtue of a credit she should be able to repay that credit, while the obligation itself will further stimulate her efforts to produce. The necessity of repayment will of course cause some hardship; yet by spurring the government and people on to greater efforts it may actually represent a blessing in disguise.

(2) *Monetary credits*

In order to facilitate the stabilization of Chinese currency in the postwar period, some form of monetary credits may have to be arranged. The size of the credits needed and their functioning will depend upon the final arrangements of the International Stabilization Fund and its related program.

(3) *Project credits*

One of the most practical forms of credit for postwar China will be a type arranged for the explicit purpose of financing a production project or a series of projects—the construction of one or more railways, the building of a dam, the erection of a steel mill, the establishment of a fertilizer plant etc. Either the Chinese Government or people or both will need to make purchases from abroad to undertake such projects. In seeking credits to finance these purchases, they can present their plans and calculations and point out the possible sources of revenues with which to repay such credits. The borrowing party will know exactly how he plans to make use of the credit, while the lending party will understand fully how much risk he will run. The clarity of the purpose for which the credit is intended and the possibility of measuring the risks it involves against its security and profitability will make this type of credit the best means of facilitating China's postwar purchases.

This type can be arranged between governments, between a government and an international organization or between private enterprises. If it is arranged between two government agencies for instance, it may take the form of an Export-Import Bank credit for the purchase of railway materials in the United States. If it is arranged between the Chinese Government and private enterprises, it may take the form of a bond flotation in

the United States financial market with principal and interest guaranteed by the Chinese Government. Or it may take the form of a loan from the International Bank for Reconstruction and Development as agreed upon in the United Nations Monetary and Financial Conference. It may also take the form of purchases of materials from United States manufacturers on credit by the Chinese Government, preferably under guarantee by the Export-Import Bank. If it is arranged between private enterprises, it may involve financing a joint Sino-American enterprise in which the American partners will contribute part of the working funds in order to facilitate operations. Or it may mean the extension of a loan from investment houses to a Chinese enterprise to help accomplish a certain project under consideration. Most of these project credits would be long-term in nature and could not be liquidated in a short period.

At the beginning of the postwar period therefore, either an organization such as the International Bank for Reconstruction and Development or the government of a lending country must take the initiative; in most cases such credits would have to be guaranteed by an international or foreign government agency. As time goes on and conditions in China steadily improve, private enterprises will no longer hesitate to extend credits, so that foreign government credits and/or guarantees may eventually be dispensed with. Certainly if China succeeds in her program of industrialization the time will come when Chinese enterprises can float stocks and bonds in the New York and London markets on their own strength alone.

(4) *Commodity credits*

During the war, as we have already mentioned, a series of commodity credits were arranged between the Chinese and United States governments to finance the purchase of materials and supplies in America. The Export-Import Bank extended credits to the Chinese Government under the condition they should be used to purchase American products and on the promise that the Chinese Government would deliver certain quantities of vital products to the United States for sale over a period of years, with the proceeds used for the retirement of the credits. The \$25,000,000 wood oil credit of 1939 set the pattern for

subsequent ones until the closing of the Burma Road made the grant of further credits on this basis unworkable.

In spite of the war the Chinese Government succeeded in delivering sufficient quantities of wood oil to retire the credit in March 1942—almost two years ahead of maturity. Thus far all other credits have been serviced satisfactorily and urgently needed Chinese materials—such as tin, tungsten, antimony and others—have been regularly delivered to the United States by air transport.

The establishment of these commodity credits enabled China to make purchases in the United States at a time when she desperately needed supplies for prosecuting the war and also gave the United States certain needed materials to facilitate her own war effort. Although helpful during war, commodity credits are essentially peacetime measures, because the execution of such arrangements requires an uninterrupted flow of goods between the contracting countries. The advantage of this type of credit lies in the fact that it tends to stimulate both imports and exports and that in fulfilling its terms China would also be enabled to maintain or further develop her export market at the same time as the lending country benefited from the availability of certain needed materials.

Had it not been for the necessity of fulfilling the terms of the wood oil credit for instance, the Chinese Government hardly would have made such great efforts to ship wood oil to America during the war; consequently American industry would not have benefited from the use of wood oil at a more or less stabilized level. After all, imports must be paid for with exports directly or indirectly; in arranging such credits a mechanism is provided whereby a certain portion of imports and exports can be automatically balanced off against each other over a period of years. For promoting China's postwar trade and encouraging the interchange of goods among countries, commodity credits should continue to be a highly useful form of credit in time of peace.

The granting of commodity credits by one government to another presupposes control by the latter over certain exports to be used for the retirement of the credits. In order to carry out the arrangements of the wood oil credit for instance, the Chinese Government established the Fooshing Trading Corporation for the purpose of collecting and shipping wood oil

in China, and also a Universal Trading Corporation for the purpose of selling wood oil and handling purchases under the credit in the United States. The same mechanisms were used under subsequent commodity credits.

Partly as a wartime measure and partly owing to the necessity of collecting certain products for export in fulfillment of the terms of such credits, the Chinese Government acting through its agencies has itself been handling the export of a number of products like tin, tungsten, tea, bristles, duck feathers and wood oil. The end of the war probably will enable private enterprise once again to carry on the exporting business, but so long as commodity credits are needed the government will continue to engage in collecting and exporting certain products connected with them.

The fact that the government may remain in the exporting business does not mean that private enterprise will be eliminated altogether. A government agency can more easily take upon itself the tasks of stabilizing the prices of certain products, improving their qualities through research and standardization and promoting their uses abroad by assuring the consumers of a regular and economical supply. A government agency will also perform a larger function than could private trade with respect to exports—that is, the function of maintaining or developing a market for Chinese exports. Since the benefits of an expanding export market are shared by government and private merchants alike, government participation in foreign trade may prove complementary and helpful instead of competitive and harmful to private enterprise.

(5) *Trade and bank credits*

A liberal credit policy on the part of foreign manufacturers toward their customers or agents in China will create a source of new credits which, while small in individual amounts, may reach a substantial total. Trade credits may consist of sale on an installment plan, consignment on account, acceptance of promissory notes and many other forms of deferred payment for purchases. In view of the likelihood of a general shortage of liquid funds in China, the purchase of any substantial amount of goods in the postwar period will be unduly influenced by the terms of the credit offered by the seller.

Foreign manufacturers will probably have to grant some

kind of trade credits to their Chinese customers in order to expand their business. To minimize the risks involved, an intimate knowledge of the customers' character and business will be necessary; consequently, close contacts with Chinese business people will have to be maintained. Quite possibly the abolition of extraterritorial rights and other special privileges which hindered cooperation between foreign and Chinese enterprises will encourage the formation postwar of more joint enterprises composed of both Chinese and foreign interests. Such enterprises will facilitate exchanges of information, bring to bear technical assistance and supervision to assure successful operation and eventually render possible the granting of liberal credits with a minimum of risk. For individual foreign manufacturers this type of credit will certainly become of paramount importance in postwar competition for Chinese trade.

Aside from the purchase of bonds and notes issued by the Chinese Government under suitable guarantees or the grant of a loan to Chinese enterprises, foreign banking institutions may furnish another source of credit by their export financing operations. They may grant a line of credit to a Chinese bank so that it may overdraw its foreign account to pay for purchases made by its clients; or they may buy drafts drawn under the Authorities to Purchase issued by a Chinese bank and hold them until the related shipments have reached their destination. They may also grant manufacturers certain credits so that the latter in turn will grant trade credits to Chinese customers. Of course credits of this nature will be used strictly for short-term purposes.

(6) *Foreign ownership of enterprises or properties in China*

In prewar years a part of China's excess of imports over exports was also met by the acquisition of properties in treaty ports by foreign interests—either for business or for residential purposes. As China's industrial and commercial facilities have never been adequate, foreign enterprises have always found it necessary to own properties in China in order to carry on their business. The need of oil companies to own tank installations in various treaty ports may be cited as a case in point. On account of the existence of extraterritorial rights and foreign settlements, foreign-owned enterprises and properties were located mainly in the foreign settlements of treaty ports. Most of them

in fact were concentrated in the International Settlement and the French Concession at Shanghai, where a substantial part of all industrial, business and residential properties was owned and operated by foreigners.

The acquisition of such properties represented the results of a long period of trading with China extending over almost an entire century. While no exact valuation is available, they were certainly large enough to rank as an important factor in partially offsetting China's unfavorable trade balance over a period of years. China originally learned modern Western methods of trade and industrial production through contact in treaty ports with foreign nations. In addition a long period of civil warfare in the interior and the lack of adequate transportation facilities had led to the concentration of Chinese industries in and around such areas—a state of affairs which almost turned out disastrous when the war broke out.

The enemy has caused considerable destruction to the enterprises and properties owned by Allied nationals for which appropriate redress should be made after the war. The recent return of foreign settlements and concessions to China together with the abolition of extraterritorial rights has erased any special or imaginary protection that might have accrued to foreign ownership of properties in any particular area. Therefore it will make little difference so far as legal rights are concerned whether the property owned by foreign nationals (or leased in perpetuity) is located in a coastal port or an inland city.

The question of whether foreign nationals will abstain from ownership of properties and enterprises in China because of the abolition of such special privileges depends entirely upon the postwar political situation of China. So far as the official attitude of the government is concerned, laws militating against such foreign ownership probably will not be enacted. Under terms of a series of treaties recently concluded with the United States and British governments on January 11, 1943, the Chinese Government has promised full protection of property rights and titles possessed by American and British nationals which are existing or to be acquired. It has accorded American and British nationals—either merchants or missionaries—the right to reside, trade and travel anywhere throughout China. So long as political stability is maintained, the removal of

special privileges previously enjoyed by certain foreign nationals will not reduce the degree of protection afforded property rights, but rather will free vast areas of inland China where foreign nationals may henceforth own properties and enterprises to good advantage.

In the light of past experience and considering the future we cannot doubt that to expand their business and build up the market, foreign manufacturers and traders will find it necessary to own enterprises and properties in China. Obviously no oil company will be able to sell its products in China without adequate tank installations and this situation will hold true for nearly all other businesses. For example an automobile manufacturer who owns and operates an assembly plant in China will be able to outsell his competitors by utilizing relatively cheap Chinese labor and because of a more intimate knowledge of Chinese market conditions. Thus he will be able to produce the cheapest product and give credit terms to his customers with a minimum of risk.

What will apply to automobile manufacturers will also hold true for manufacturers of electrical machinery, machine tools, textile machinery, railway equipment and many others. Manufacturers will not only have to sell their goods as cheaply as possible but also teach their Chinese customers how to use them (in the case of machinery and equipment) and furnish technical information and services in connection therewith. All these requirements can be met only by operating the productive enterprise in China itself. With respect to import and export trade, certainly the firm which owns adequate warehousing facilities in China will be able to handle a larger and more profitable volume of business than one without such facilities. In a country like China where industrial and business facilities have never been adequate, the importance of holding properties and enterprises as a means of business expansion is quite apparent. Certainly trade will not take root unless it is backed by investment.

At the very least the properties and enterprises already owned and later destroyed during the war will have to be rebuilt or re-equipped if foreign owners expect to resume business after the war. With the abolition of unequal treaty rights and special privileges chances will be increased for cooperation between Chinese and foreign interests in the field of industry and trade. In order to minimize the element of risk, foreign interests may

find it desirable to establish plants or firms in joint ownership with Chinese interests. Possibly the formation of such joint enterprises will come to be a popular channel of long-term investment in postwar China by foreign nationals. Thus, a portion of China's unfavorable trade balance may also be met by an inflow of long-term investments for the purpose of establishing enterprises and holding properties in China.

E. CONCLUSION

The above discussion ought to show that after the war China need not limit herself to any single type of credit from one source in order to finance her purchases; rather she may utilize several types of credits at the same time and from different sources—governmental, international or private. The fundamental requisite for all such credits will be political stability both nationally and internationally. Availability of new credits naturally will accelerate the pace of industrialization, materially lift Chinese living standards and help develop a market for the products of the credit-granting countries.

The unavailability of new credits, however, will not completely put a stop to industrialization for if China is to survive in the postwar world, industrialization will be absolutely necessary. Without sufficient outside help perhaps it would result in the development of an artificial and autarchic national economy through a slow and painful process of adjustment which would reduce China's importance as a world market and in the end create distrust of international collaboration among the Chinese people.

For an individual manufacturer or country the extension of new credits may prove a necessary means of establishing a postwar market in China once her political stability is beyond doubt. While she should welcome the extension of new credits from friendly nations, China must take care that they will be most wisely employed to increase the productive power of the nation and will be faithfully serviced and punctually repaid, thereby so enhancing her credit standing that future credits will be obtainable on the most economical terms.

We should emphasize that the postwar market of China must be developed, not exploited. After long and exhausting warfare China will need literally all kinds of goods—capital, producers' and consumers'—although her program of industrializa-

tion will require more capital goods than any other kind. Naturally she will buy from many countries but because the United States possesses the greatest industrial plant in the world and because during the war China has become accustomed to the use of American products almost exclusively on account of purchases here under credits and the operation of lend-lease, she will probably buy more from the United States than from any other country.

We must not suppose, however, that the market will be America's for the asking; United States manufacturers must understand the character of this market and provide the means to develop it. They must recognize that the purchasing power of the Chinese people immediately after the war will be unusually low, that the desperate need for capital or consumers' goods will not be sufficiently backed by an ability to pay and that the factors of price and time—a price low enough for the population to buy and time enough to allow the buyer to produce enough to pay for his purchases—will be of paramount importance in developing the Chinese market.

Most likely China will not buy a great deal more in the postwar period than in the last few prewar years: transportation will not return to normal within any short time; her ability to export will probably reach an all-time low; and world confidence in her political stability may not be so firm as to induce a large inflow of foreign credits. Imports will greatly exceed exports although this balance may be covered temporarily by various forms of remittances, grants from UNRRA, enemy reparations and China's unused credits from Allied governments. Further unfavorable balances of trade will have to be covered mainly by the extension of new credits; only by this means will the Chinese postwar market be quickly developed.

The base of any market lies in the purchasing power of the population. Industrialization is definitely the key to raising the purchasing power of the Chinese people. It can be accelerated by the purchase of more capital goods and more capital goods can be imported through new credit grants. With a population of four hundred million and an area of more than four million square miles, a China industrialized with the assistance of friendly nations can hardly fail to become one of the greatest of world markets and a powerful and stabilizing influence for the general peace of the world.

APPENDIX

*The Supreme National Defense Council of China
On December 28, 1944*

SCOPE OF STATE ENTERPRISE

"I. The industrial development of China should be carried out along two lines, (1) by private enterprises and (2) by state enterprises.

"II. In order to facilitate the division of labor under a general plan for economic reconstruction the following provisions concerning economic enterprises are to be observed:

"(1) The kinds of state monopolies should not be too numerous. Such monopolies include (a) postal service and telecommunications, (b) arsenals, (c) mints, (d) principal railroads, and (e) large-scale hydraulic power plants.

ENCOURAGEMENT OF PRIVATE ENTERPRISE

"(2) Private capital may engage in any enterprise other than state monopolies.

"(3) The Government may, on its own account or in cooperation with Chinese or foreign capital, engage in enterprise which private capital is not fully capable of developing or which the Government regards as being of special importance, such as large-scale petroleum fields, steel plants, air and water transportation.

"(4) All enterprises which are operated by the Government in cooperation with Chinese or foreign capital should be organized in the form of business corporations. The Government, apart from exercising such administrative supervision as provided by law, is entitled to participate in the management of all matters relating to the business, finance, and personnel of such corporations solely in its capacity as a share holder.

"(5) With the exception of state monopolies, all enterprises operated by the Government, whether with or without the cooperation of Chinese or foreign capital, insofar as they are of

a commercial character, should, as regards their rights and obligations, be treated in the same manner as private enterprises of a like character.

"III. The establishment of any important private enterprise should, according to law, be submitted to the examination and approval of the Government on the basis of the general plan for economic reconstruction. (Important matters to be considered include location of the projected plant, production capacity, kind and quality of output, issuance of shares and bonds, etc.)

"To all private enterprises that conform to the general plan for economic reconstruction, the Government should give special encouragement including financial aid and transportation facilities, so that they may achieve their scheduled programs.

FOREIGN PARTICIPATION

"IV. No restriction shall be placed on the percentage of foreign shares of capital in any Sino-foreign enterprise. In the organization of such a corporation it shall not be made a fixed rule that the general manager be a Chinese, although the Chairman of the board of directors must be a Chinese.

"V. State enterprises may contract foreign loans or seek foreign investments through competent Government organs, provided that they first be approved by the Government on the basis of the general plan for economic reconstruction. Private enterprises may also directly undertake such negotiations, provided that similar approval of the competent Government organs is obtained.

"VI. All enterprises in China which are directly financed and operated by foreign nationals on their own account should observe Chinese laws and regulations. In the case of certain special enterprises which would require special authorization for the establishment and operation, special charters or franchises may be granted to foreign nationals upon applications to and approval by the Chinese Government.

"VII. Persons in the Government service are forbidden to participate in the operation and management of any enterprise that falls within the scope of their supervisory functions.

"It seems inevitable that the existing laws and regulations concerned will in some cases be found to be in conflict with the above-stated principles. Some cases should be referred to the

Legislative Yuan for revision with a view to harmonizing all existing legislation on the subject.”

*The 11th Plenary Session
of the 8th Central Executive Committee
of the Kuomintang*

September 11, 1943

INDUSTRIAL RECONSTRUCTION

“RESOLVED, that the following proposal be adopted and referred to the Government for detailed planning and execution in coordination with developments in the field of communication:

Article 1. Industrial reconstruction shall be a planned one, mapped out by the Government according to the principles laid down in the San Min Chu I (Three People’s Principles) and Dr. Sun Yat-sen’s Industrial Program.

Article 2. Industrial outputs of various categories, as required according to the plan of the Government within a specific period of time, shall be scientifically regulated, and plans for reconstruction in different localities and different years shall be carried out accordingly, thereby increasing national wealth and the people’s purchasing power.

Article 3. The Central Government shall formulate a comprehensive nation-wide plan for the establishment of industrial areas which is to be based upon the requirements of the national economy, existing communication facilities, and the location of natural resources.

Article 4. Industrial products shall be standardized as far as possible.

Article 5. In the postwar industrial reconstruction, the Government shall adopt the policy of emphasizing a simultaneous development of state and private industries which shall be operated on a division-of-labor and collaboration basis under a complete industrial reconstruction plan, so that the production quota prescribed for various categories of industries may soon be reached.

Article 6. Industries which may be entrusted to individuals, or industries which will be less suitable for the state to operate

shall be privately operated. The Government, in such cases, shall give them encouragement and protection of the law. Industries, the operation of which cannot be entrusted to individuals, or industries which assume the nature of a monopoly shall be state-operated. The Government shall stipulate specifically what constitute state-owned industries, and what constitute private industries.

Article 7. State as well as private industries shall strive to increase their working efficiency, adopt the latest techniques, reduce the cost of production, and improve the quality of products in order to strengthen the foundation of the enterprises and achieve rapid improvement.

Article 8. The Government shall give special encouragement and financial assistance to private industries which conform to the provision of the industrial reconstruction program. The Government shall also give to these private industries technical and transportation assistance and facilities so that they may be developed according to plan.

Article 9. The Government shall support, promote and improve handicraft industries and industrial cooperatives in order to encourage the people fully to utilize their leisure and engage themselves in industrial production.

Article 10. In order to increase international trade, export industries shall be given encouragement and support. Encouragement and commendation shall also be given to the people for the manufacture of goods for export as well as for the operation of export industries.

Article 11. The Government and the public shall employ effective means to encourage the people to conserve their resources and invest them in industries. The Government shall also supervise, direct and encourage the reinvestment of industrial profits in that particular industry or other industries.

Article 12. The national financial policy and the banking policy shall be in complete accord with the national industrial reconstruction plan. The taxation and the financial system shall be in line with the promotion of national industrial reconstruction.

Article 13. The national industrial education program shall be fully coordinated with the national industrial reconstruction plan. Each industry shall be responsible for the training

of its personnel, in accordance with the regulations to be promulgated by the Government.

Article 14. The Government and the public shall employ effective means to encourage inventions and creations and intensify the movements for the promotion of science and technology.

Article 15. In order to strive for industrial and technical improvement, all research institutes and organizations in the country connected with industrial reconstruction shall devote themselves to the study of practical problems. They shall also assist in removing difficulties or in solving difficult problems encountered by various industries.

Article 16. In order to speed up the completion of the industrial reconstruction plan, foreign capital and technical cooperation shall be welcome.

* * *

WHEREAS, the carrying out of the Industrial Program as outlined by Dr. Sun Yat-sen, the Father of the Republic, is one of the important objectives of the Kuomintang revolution, and according to Dr. Sun's plan international cooperation is to be welcomed in the development of China's industry, provisions for the realization of the Program should not be further delayed now that victory is in sight.

Therefore, be it resolved, that to show a spirit of close cooperation with China's friendly powers, all restrictions applying to Chinese-foreign joint enterprises shall be revised. Hereafter, no fixed restrictions shall be placed on the ratio of foreign capital investment in joint enterprises. In the organization of a Chinese-foreign joint enterprise, except for the chairman of the board of directors, the general manager need not necessarily be a Chinese. The foregoing terms of cooperation shall become effective after an agreement by the parties concerned has been reached and the approval of the Government secured. At the same time aliens, in accordance with the provisions of Chinese laws and regulations, and having received the sanction of the Chinese Government, may finance their own enterprises in China. Negotiations for foreign loans for state enterprises shall be centralized. Private individuals may negotiate foreign loans

for their enterprises and such loan agreements shall become effective following the approval of the Government. The Government shall determine at an early date which categories of State enterprises may accept foreign investment, and which categories may seek foreign loans."

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