What you should know about China's economy

by Jonathan Tennenbaum

After an extraordinary 20 years of reform and rapid development, China, with its 1.23 billion population, now occupies a crucial strategic position in the world economy as a whole. There is no nation in the world, which is not affected in one way or another by China's effort, in the face of enormous problems, to transform itself into a leading industrial nation by the middle of next century. Taken together, China and India (soon to surpass China as the most populous nation in the world) will define the center of gravity of mankind's physical economy in the decades ahead.

More importantly, China is right now a decisive factor in the potential constellation of forces, necessary to push forward an emergency reorganization of the world financial system in the immediate period ahead. Without such an emergency reorganization, the imminent collapse of the present financial system—of which the Asian financial crisis is so far merely the prelude—can bring down the entire world economy and throw our planet into uncontrollable chaos. The crucial question, is whether the United States can bring together a "hard core" of industrial and developing-sector nations, for the purpose of setting up a new world financial and monetary system along the lines of Lyndon LaRouche's "New Bretton Woods" policy. As the world's largest developing nation and virtually the only economy in the world which has continued to grow in real, physical terms, China's participation is decisive to the success of that endeavor.

ABCs of China's physical economy

Needless to say, China's economy is a vast and complex subject.[1] The following article does not attempt to give a comprehensive overview, but only to provide the reader some essential elements which must be taken into account in any competent evaluation of the physical economy of that country.

As in any scientific endeavor, in beginning, one must remind oneself that the subject—in this case the economy of a very large and complicated country—is not something that can be touched, seen, or otherwise known to the senses directly. Nor can it be abstracted from mere statistical data, without first defining the essential, real features (the singularities) of the process being studied. The most efficient pathway to *conceptualizing* the Chinese economy, is one which focusses first of all on its paradoxes and anomalies, of which there are very many. This makes China's economy a fascinating and often baffling subject.

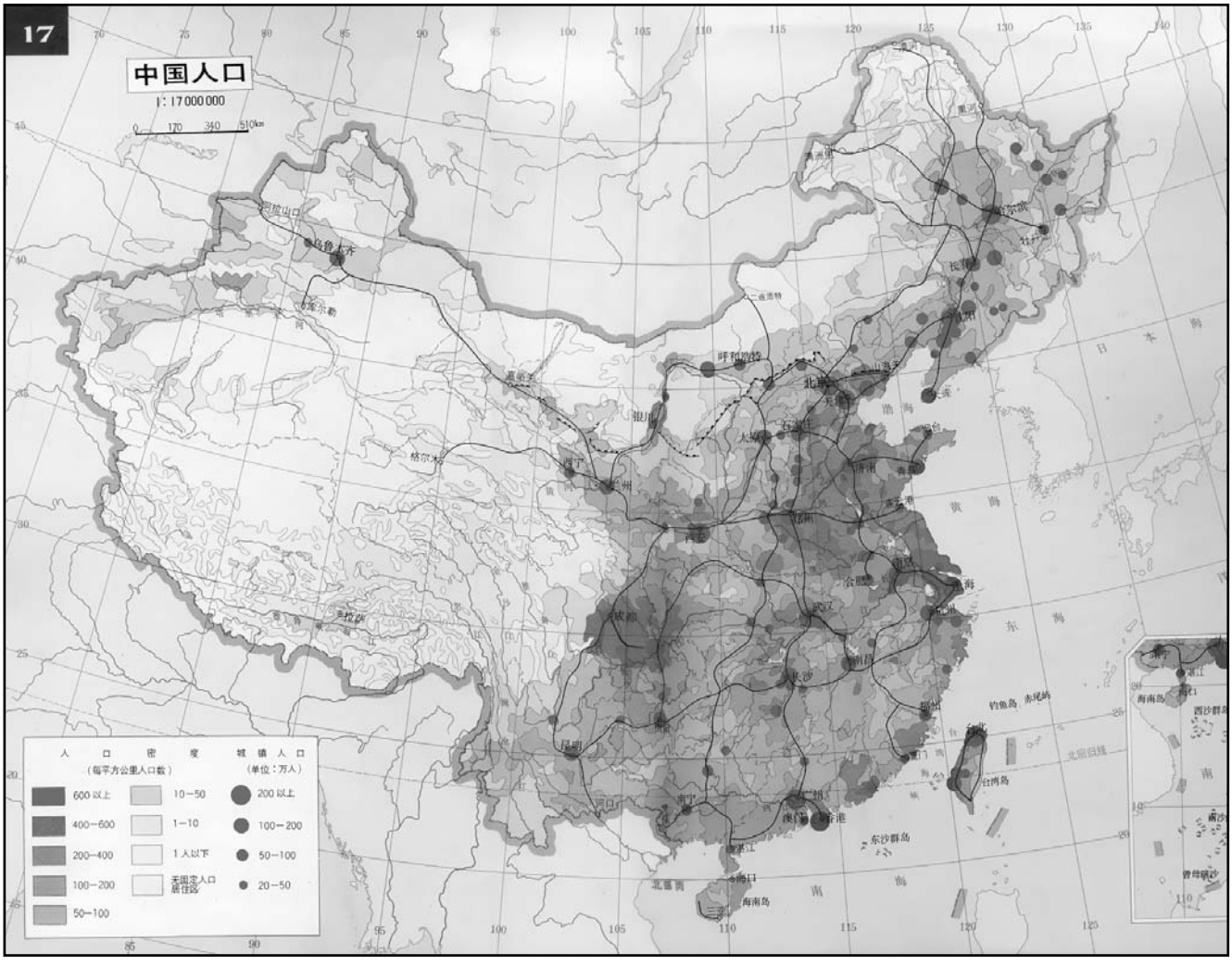
A unique moment in 5,000 years of history

The present process of reform and rapid industrial development is an unprecedented phenomenon in Chinese history. While China led Europe in many areas of technology prior to the European Renaissance, it fell rapidly behind in the subsequent period, entering the 20th century as one of the most backward, impoverished nations in the world—a semi-colony of foreign powers, with a feudalist social structure and without effective national leadership. The patriotic movement of Sun Zhongshan (Sun Yat-sen) and his followers succeeded in formally establishing China's first republic in 1912, ending the millennia-long chain of imperial dynasties. But the initial attempt to launch a modern nation-state development in China was checked by a series of disasters, culminating in the bloody Japanese occupation of large parts of China from 1931 until 1945.

Although significant industrial and agricultural developments were carried out under the Communist leadership in the decade following the founding of the People's Republic of China in 1949, the modernization process was brutally

1. For a useful summary of the reform of China's financial and management system, which is not touched upon in this article, see Dr. Bi Jiyao, "China's Plan for Economic Growth," *EIR,* Jan. 9, 1998.

FIGURE 1
Population density in China



interrupted, once more, by Mao's "Great Leap Forward" of 1958-60, and then, after a brief recovery, by the catastrophic, ten-year "Great Proletarian Cultural Revolution." It is only thanks to the post-1977 policies of Deng Xiaoping, and most emphatically with the consolidation of Jiang Zemin's leadership faction, that a real prospect has been opened up for China to enjoy a long, stable period of intensive economic, technological, social, and political development.

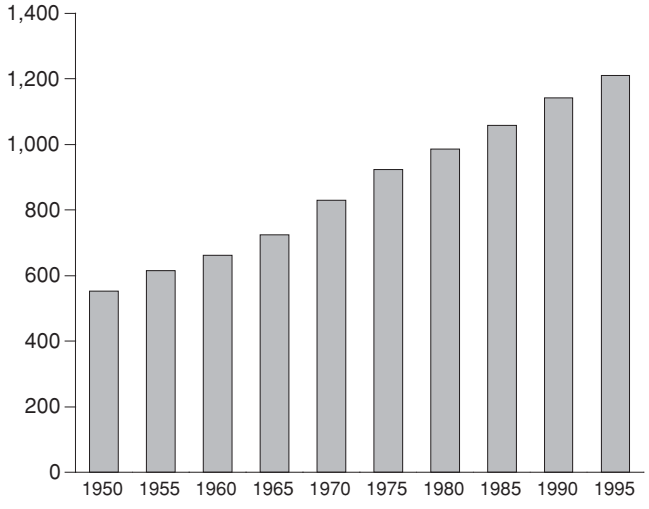
In this brief period of 20 years, China has been transformed to a degree which hardly anyone could have imagined, who knew the country before. The author will never forget accompanying Mrs. Helga Zepp-LaRouche on her visit to China in May 1996. She had last visited China 25 years earlier, in the middle of the "Great Cultural Revolution." She could hardly believe that it was the same country. Yet, despite the rapid development of China's economy over the recent period, and a remarkable overall improvement in the standard of living of the population, there can be no doubt that China remains a developing nation, with enormous problems to be solved on the way to becoming a modern industrial nation.

Huge population, but low productivity

According to an official statistic, China's total population at the end of 1997 was 1.236 billion—about one-fifth of the total world population, and five times the population of the United States. More people live in China today, than lived on the *entire planet Earth* in 1850 (**Figures 1** and **2**).

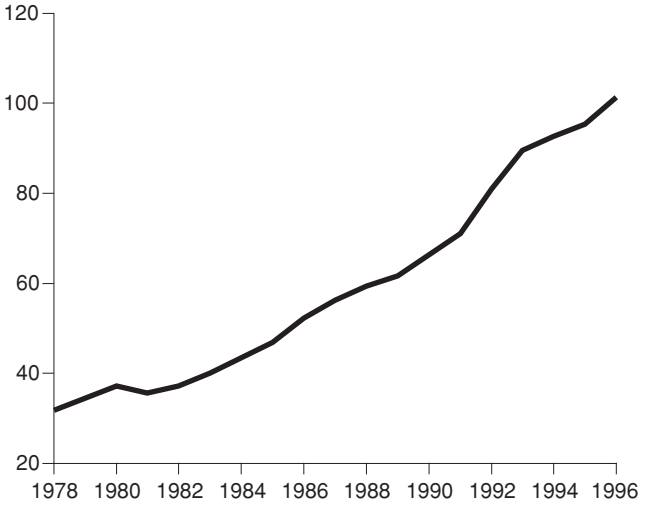
Judging from the size of its labor force alone, China should long since have become a superpower. But due to lack of education, lack of technology, lack of investment, and lack of infrastructural development, the per-capita productivity of China's labor force is vastly inferior to that of the industrial nations. In spite of an extraordinary pace of industrial development over the last 20 years, nearly half of China's labor force is still engaged in agricultural production at a very low average level of mechanization. China's actual urban indus-

FIGURE 2
China's population, 1950-95
(millions of inhabitants)



Source: *China Statistical Yearbook.*

FIGURE 3
Industrial output of steel
(millions of tons)



Source: *China Statistical Yearbook.*

trial labor force constitutes only about 12% of the economically active population, much of it working in industries with antiquated and obsolete technology. Although China has risen into the upper ranks of the world's nations in the gross output of energy and other basic industrial commodities, in *per-capita* terms, China has barely reached the levels attained by Germany and the United States 100 years ago. Apart from a layer of highly educated intellectuals and professionals—including a "hard core" of advanced technological capabilities—China is a vast ocean of human beings whose potential has barely begun to be tapped.

Huge territory, but scarcity of exploitable land

In territory, China is one of the world's largest nations: Its land area is 9.6 million sq km, nearly the same as the U.S.A. (9.4 million sq km), about half the Russian Federation (17.1 million sq km), and three times India (3.3 million sq km). However, climate and geography impose heavy costs on the economic use of much of China's territory. A full *third* of China is mountainous (25% is over 3,000 meters in altitude). Of the remaining territory, approximately 30% suffers from arid climate and 20% is semi-arid. This includes the huge sand deserts—particularly in the Tarim, Turpan, and Qaidam basins—which make up over 13% of the country's land area. Finally, with the exception of the Northern and Central Plains, the Plain of the Chang Jiang (Yangtze River), and the Sichuan basin, much of the remaining area is extremely hilly.

For these reasons mainly, only about 10-11% of China's territory can be usefully cultivated under present economic conditions. That amounts to less than 0.09 hectares of arable land per capita of the population (compare: 0.75 ha farmland per capita in the United States). With 7% of the world's agricultural land, China must feed 20% of the world's population. In addition, China's difficult topography greatly increases the relative cost to the economy of developing transport and other infrastructure.

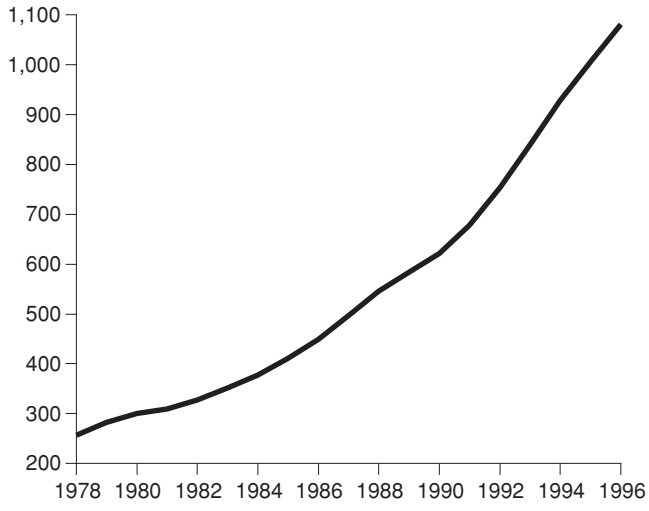
China's oldest problem: water

From the most ancient times up to the present, the fate of China has been intimately bound up with the struggle to master the element *water*. Chinese tradition tells us of the great projects of Da Yu, legendary founder of the Xia dynasty (22nd century B.C.), who tamed the waters and saved his people from terrible floods. Since ancient times, the expansion of China's food supply has depended on building up vast irrigation and water control systems. Yet, more than 4,000 years after Da Yu, water still plays a central role in China's economic problems.

Apart from the periodic menace of floods, China's biggest concern in the chronic, increasingly severe shortage of water in the northern part of the country. As one Chinese author succinctly put it: "In the North, land is plentiful, but water scarce; in the South, land is scarce but the population very numerous." The eastern region south of the Chang Jiang (Yangtze) River, with 34% of China's land area, has 81% of the available freshwater; while the region north of the Chang Jiang, making up 47% of the nation's land area, has only 7% of the freshwater resources. But even if the water were evenly distributed, China would not be particularly well-off in per-capita terms. In the amount of freshwater resources per capita, China is 88th in the world, with only one-fifth of the world average. Calculated per hectare of arable land, China has only three-quarters of the world average.

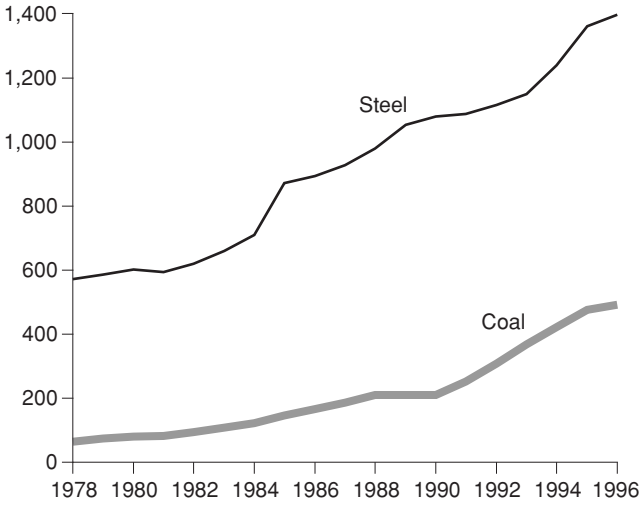
At present, the scarcity of water in many areas of the

FIGURE 4
Industrial output of electricity
(terawatt-hours)



Source: *China Statistical Yearbook.*

FIGURE 5
Industrial output of cement and coal
(million tons)

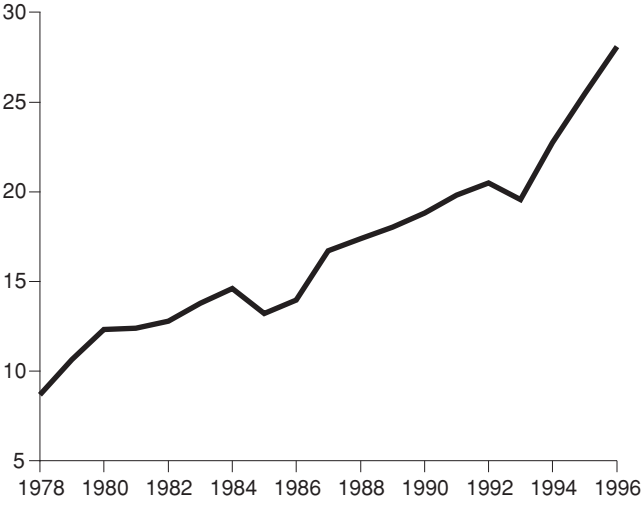


Source: *China Statistical Yearbook.*

North—and environmental problems deriving therefrom—have become so severe, that they constitute a major barrier to the development and even the economic security of the country. This is the driving force behind a series of "megaprojects" for transporting water from the South to the North via canals and aqueducts, now in various stages of planning and execution. Given the relatively large amount of land in the North of the country, whose agricultural potential is mainly limited by lack of water, every step toward solving the water supply problem in the North at the same time contributes to taking pressure off the food supply problem. With water, the deserts of Northern China might one day feed the entire country.

On the other side, in spite of major improvements in river control, the danger of catastrophic floods of the sort that killed millions of people in the past, still hangs like a Damocles' sword over the country. It is only in this long view of Chinese history, that one can fully appreciate the extraordinary significance of the Three Gorges Project on the Chang Jiang River, the world's largest river control project. But even after completion of the Three Gorges Project, much work will remain to be done, including not least the problems of China's second giant river, the Huang He (Yellow River).

FIGURE 6
Industrial output of chemical fertilizer
(million tons)



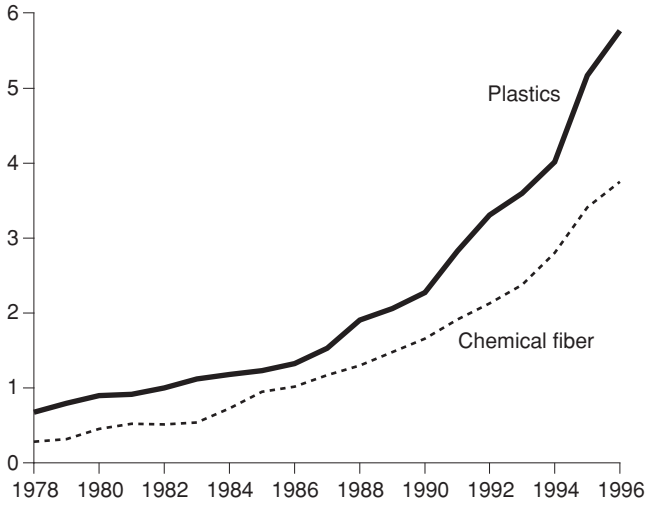
Source: *China Statistical Yearbook.*

China's physical growth

There is no doubt, that an enormous, sustained increase in the raw physical output of China's economy, both absolutely and per capita, has occurred since the beginning of the economic reforms in 1978 (**Figures 3-8**).[2] At present, China is the world's largest producer of steel, coal, cement, chemical fertilizer, chemical fibers, TV sets, refrigerators, and washing machines. It is also the number-one world producer of grains, cotton, fruits, meat, and fish. In the generation of electric power, it ranks second in the world, after the United States. (The Russian Federation has fallen from second place, due to the economic collapse there.)

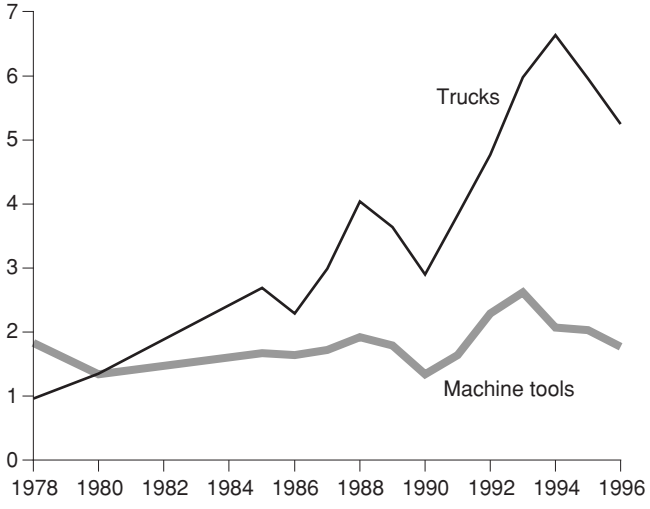
2. Most of the statistical and other economic data in this article are taken from the official *China Statistical Yearbook* and articles in Chinese economic and business publications.

FIGURE 7
Output of chemical fiber and plastics
(millions of tons)



Source: *China Statistical Yearbook.*

FIGURE 8
Products of machining industry
(100,000 units)



Source: *China Statistical Yearbook.*

In most output categories, China's breakthrough to the top ranks in the world has occurred just during the last ten years. Between 1985 and 1995, the output of steel, electricity, fertilizer, and cement more than doubled. In the course of the Eighth Five-Year Plan alone (1990-95) electrical generation capacity grew by 70 gigawatts, an amount equivalent to roughly one-third of the electrical generation capacity of Japan!

Equally impressive are the dimensions of China's infrastructure development (**Figures 9** and **10**). An efficient, modern telecommunications network, including mobile telephone networks, fiber optics cables, etc., is growing up around the country. During the Eighth Five-Year Plan alone, over 11,000 kilometers of new railway track were laid, equivalent in length to the entire Eurasian Land-Bridge from the Pacific to the Atlantic, and more than enough track to run from the East Coast of the United States to the West Coast and back. While railroad construction continues at full speed, China has now embarked on the construction of a national system of superhighways. Construction of the Three Gorges Project, the largest dam and hydroelectric project in the world, with an estimated overall cost of about $30 billion, began in 1994. Countless other major transport, energy, and water projects are going ahead.

Besides the rapid buildup of industrial output and infrastructure, there has been a sustained improvement in agricultural production across the board, including a big increase in the output of meat and fish (**Figures 11-16**). China's farmers, the first beneficiaries of the economic reform, have shown notable enthusiasm for improved farming techniques, as reflected in steady increases in per-hectare yields. The nutrition of the population has markedly improved.

It is true that in spite of excellent and growing domestic harvests, the rapidly expanding demand for grain (particularly for animal feed) has led to significant imports. On the other hand, China's food imports have been more than balanced in value, by growing exports of agricultural products to the rest of the world. In a study issued last year, the Chinese Academy of Sciences put forward the thesis, that while maintaining a "high degree of self-sufficiency" in all key areas of agricultural production, China has the potential to become one of the largest food exporters in the world over the coming decades.

As impressively large as China's industrial output and infrastructure construction might appear in absolute terms, one must never forget to measure these against a population of more than 1.2 billion (**Figures 17** and **18**). For, in per-capita terms, the industrial production of China is still relatively small. For example, China's per-capita consumption of electricity is 8 times less than Germany and 12 times less than the United States. In terms of raw steel output per capita, China has barely reached the level that Germany had attained *100 years ago!*

Another important indicator is the relatively underdeveloped state of its transport infrastructure, as compared with the population and physical size of the country. I already mentioned the impressive scale of railroad construction in recent years, which has extended China's rail system to a total length of about 57,000 km. This corresponds to a little less than 6 km of rail per 1,000 sq km of land area. In comparison, Germany's railroad system has a density of 123 km per 1,000 sq km of territory! The United States—whose average population density is only a tenth that of Germany and a fifth that of China, and whose once-great rail system has greatly shrunk

FIGURE 9

Railway development projects in China's Eighth Five-Year Plan

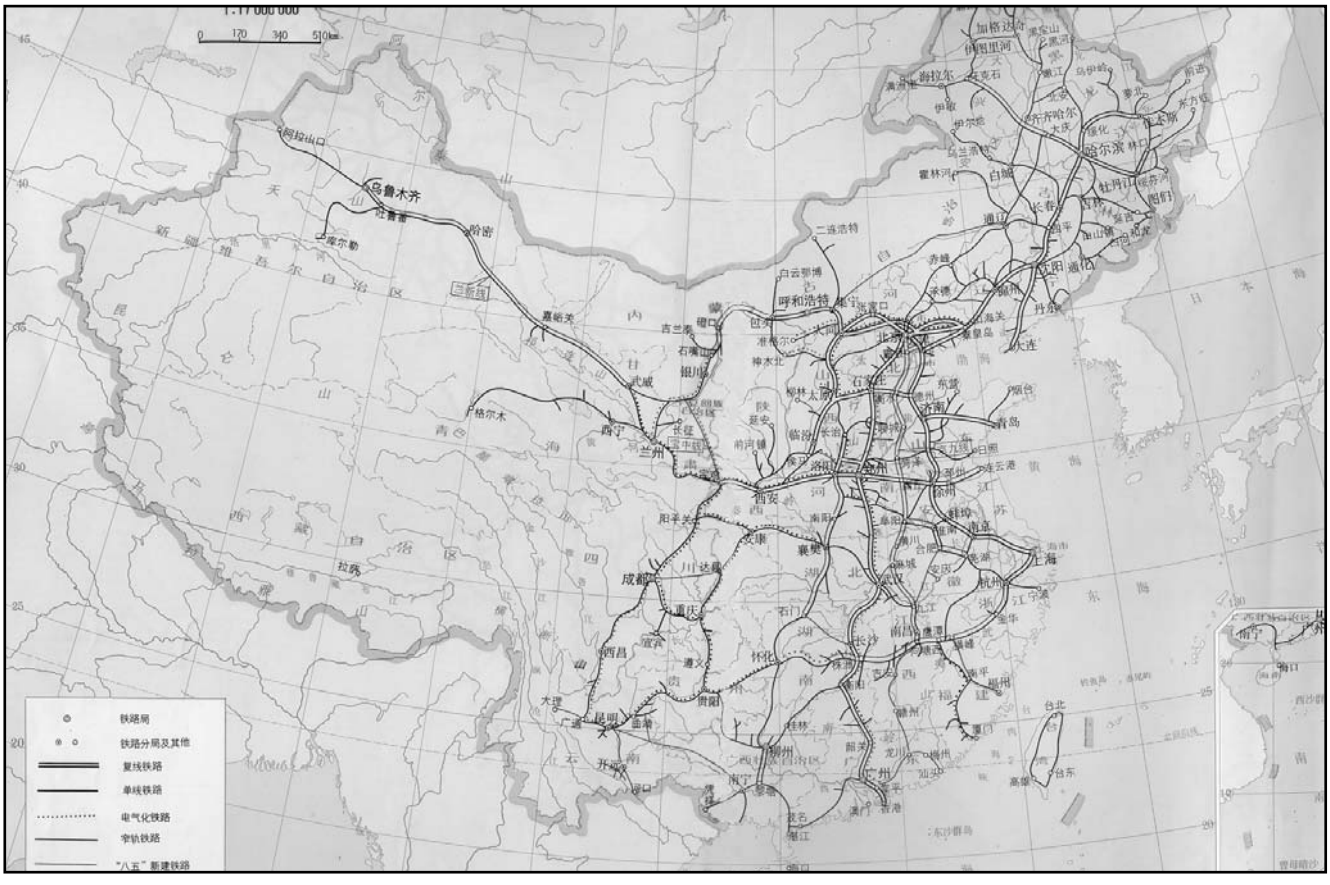
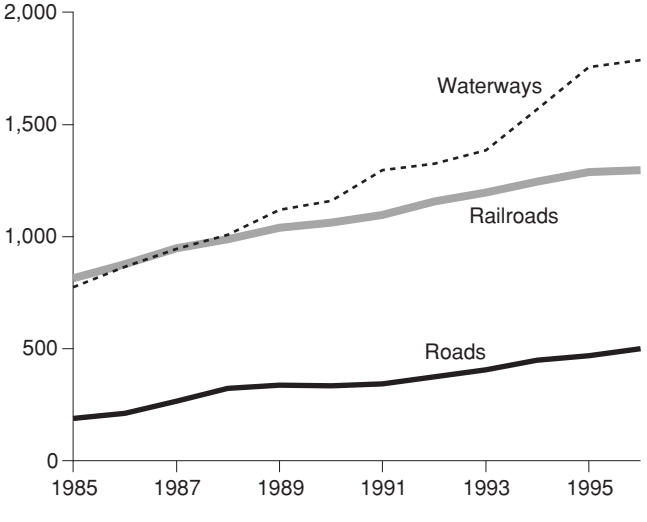


FIGURE 10

Volume of transport in China

(billion ton-kilometers per year)

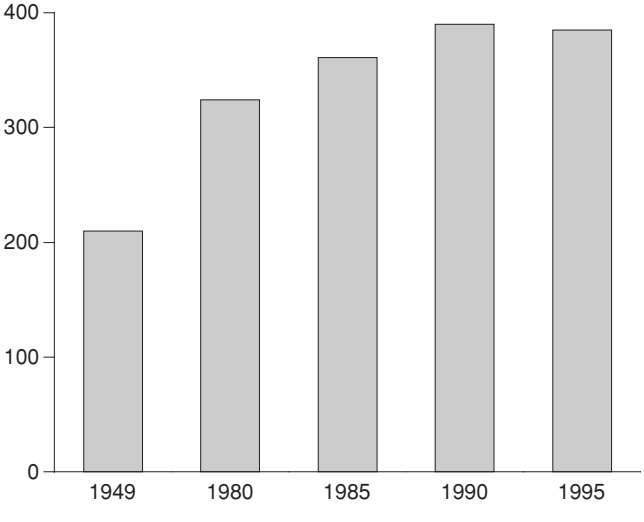


Source: *China Statistical Yearbook.*

FIGURE 11

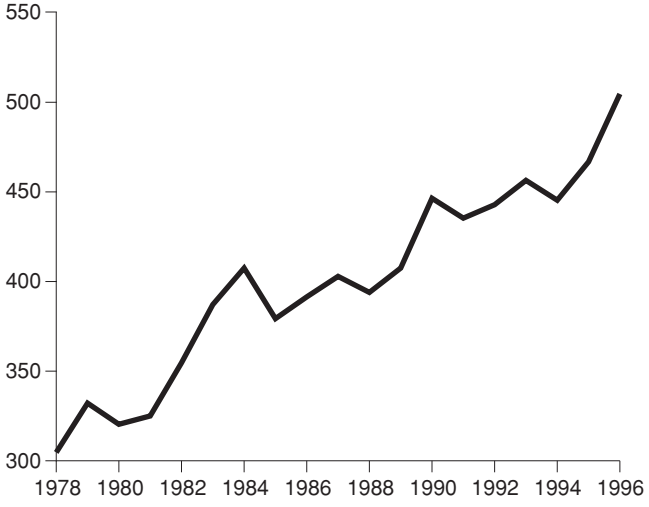
China's per-capita grain production

(kilograms per capita)



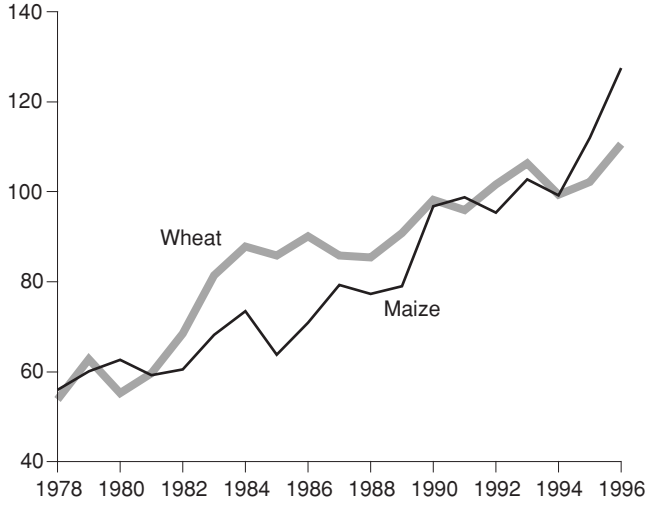
Source: Chinese official statistics.

FIGURE 12
China's production of grain (all types)
(million tons)



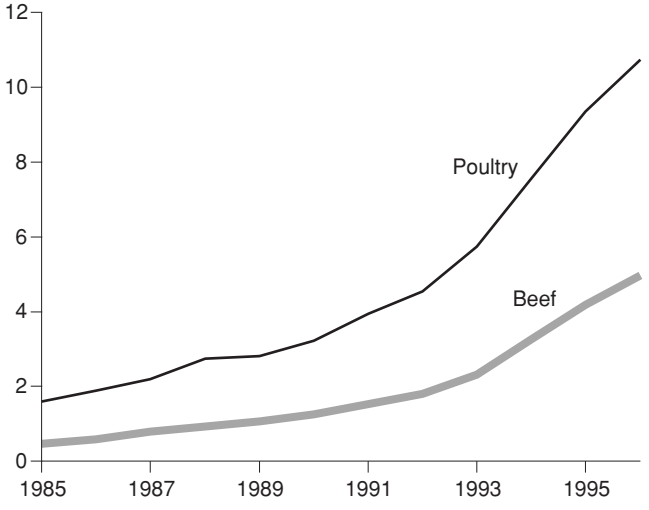
Source: *China Statistical Yearbook.*

FIGURE 13
Production of wheat and maize
(million tons)



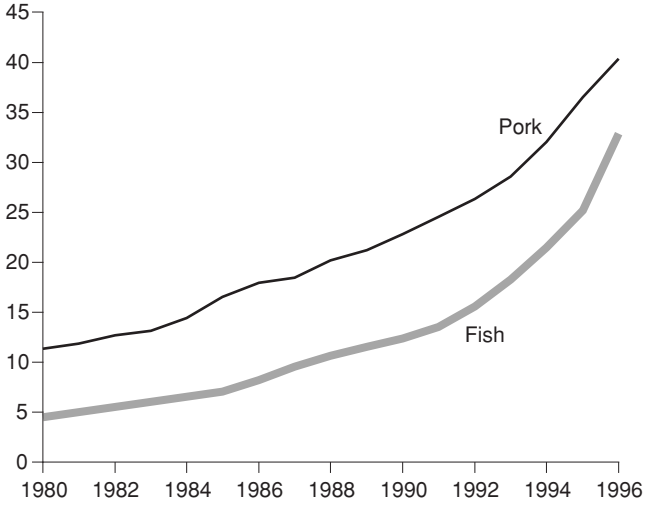
Source: *China Statistical Yearbook.*

FIGURE 14
Production of beef and poultry
(million tons)



Source: *China Statistical Yearbook.*

FIGURE 15
China's output of fish and pork
(million tons)

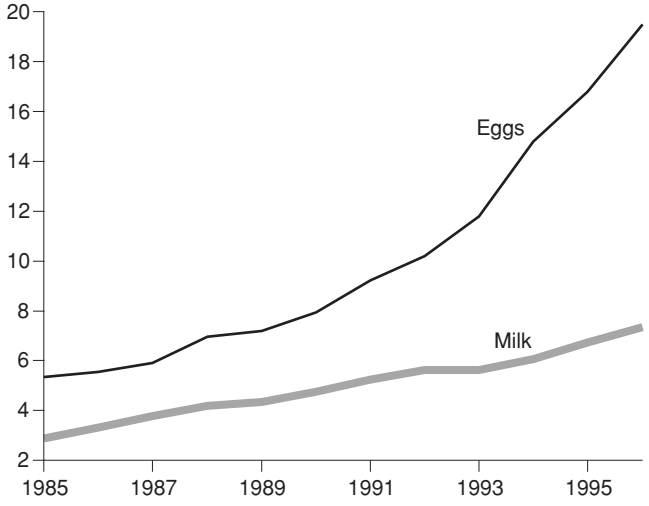


Source: *China Statistical Yearbook.*

due to anti-industrial policies of recent decades—still has a railroad density of about 25 km of rail per 1,000 sq km of area. With regard to highways, China is even far more underdeveloped. China is only now beginning to develop a system of cross-country superhighways, and many rural areas are poorly, if at all, accessible by paved roads.

Such simple comparisons suffice to refute the ridiculous assertion, floated in some international circles in recent years, that "China is no longer a developing country." Despite the recent major shift toward industrialization, the overall structure of China's labor force remains predominantly *pre-industrial,* with the vast majority of the population still living in

FIGURE 16
Production of milk and eggs
(million tons)



Source: *China Statistical Yearbook.*

FIGURE 17
Per-capita steel production
(kilograms per capita)

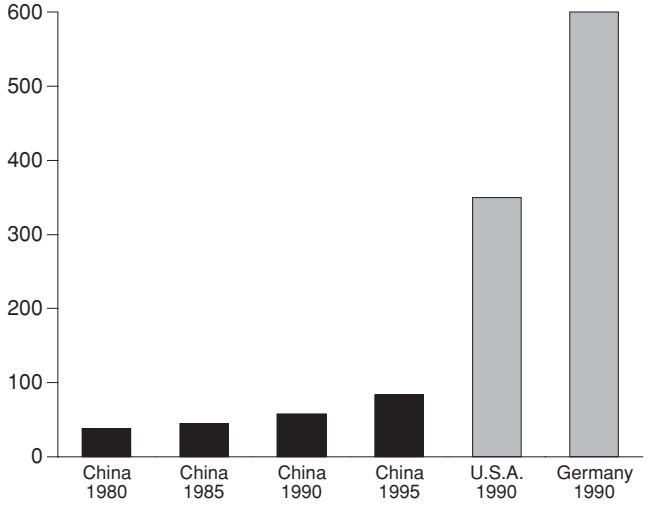
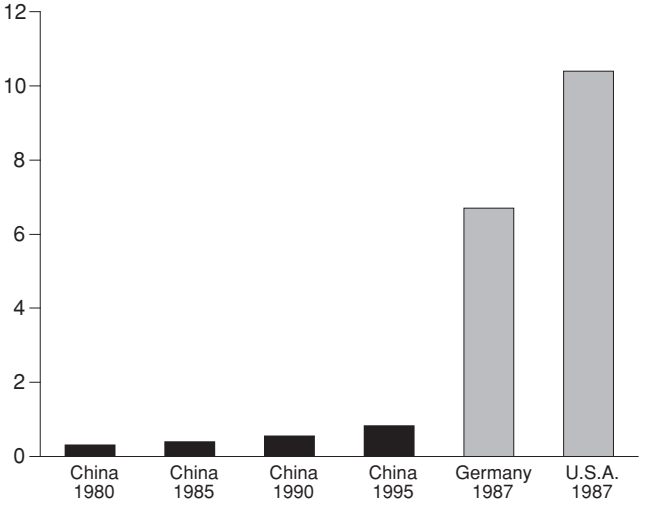


FIGURE 18
Per-capita electricity generation
(megawatt-hours per capita)



rural areas and half the labor force engaged in agriculture or agriculture-related activities. The industrial base of China is still quite small compared to the population of the country as a whole.

On the other hand, in terms of the absolute scale of employment and raw scale of output, China's industrial base is not "small," nor is it small in comparison with that of the industrial nations. In *numerical* terms, China's industrial labor force of approximately 80 million workers, is larger than that of the United States, Germany, and Japan put together—even if we take into account the significant factor of "hidden unemployment" and underemployment in Chinese industry.

Of course, the average productivity, the level of technology, and the average qualification level of the Chinese industrial workforce is vastly inferior to that of the advanced industrial nations. But China also possesses a hard core of advanced industrial capability, as the result of historical developments in the military-industrial sector (see below), and the more recent policy of large-scale introduction of modern technology and know-how from abroad. That hard core of technological capability is still relatively small in relation to the masses of relatively old, technologically out-moded plants in the state-owned industry, but it represents a significant qualitative asset nonetheless.

Many of the paradoxical features of China's economic performance reflect the persistence of a two-tier structure inherited from long before the beginning of the economic reforms.

On the one hand, in comparison with most so-called developing countries, China has a relatively well-established urban-industrial sector, concentrated in a network of large industrial cities linked by a fairly efficient infrastructure of railroads and waterways. A visitor staying only in Beijing, Shanghai, or other major Chinese cities, and surrounded by modern hotels, office buildings, highways, and apartment projects, might indeed gain a false impression of the actual situation of life for the majority of China's population.

The majority of the population is still concentrated in

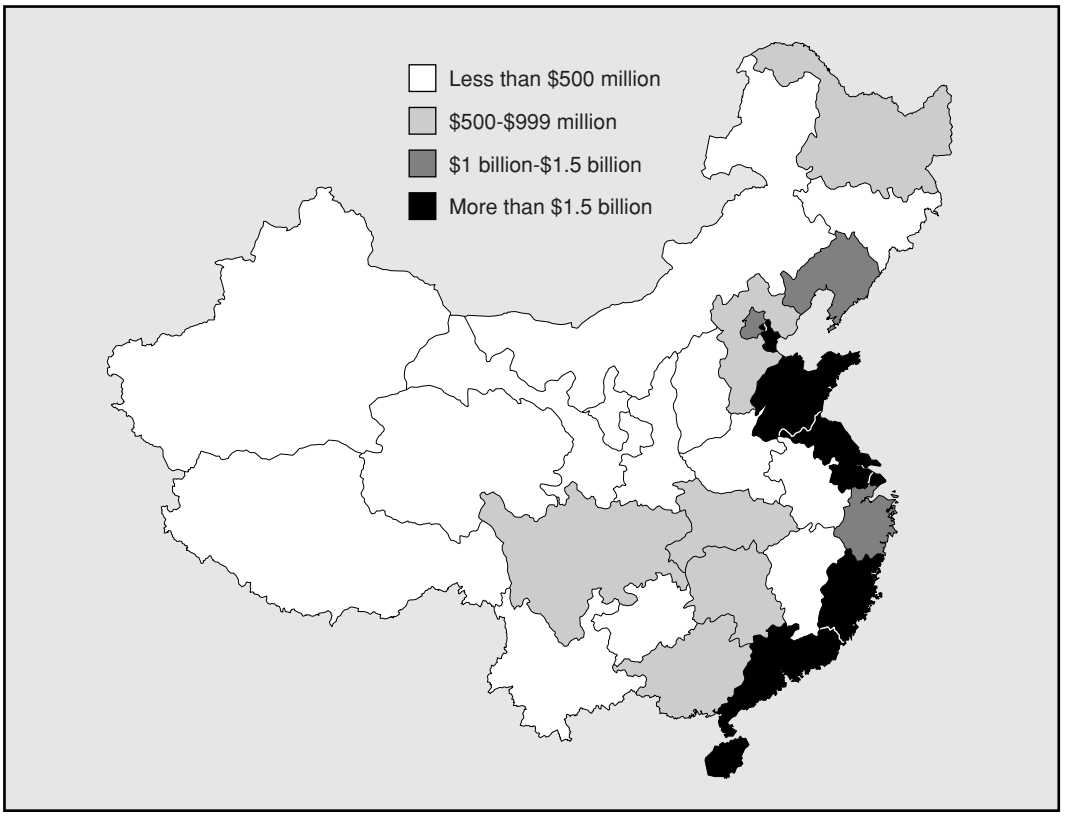


FIGURE 19
Realized foreign investment in China, 1995

Source: *China Aktuell.*

China's vast rural-agricultural areas, which (until recently, at least) have been characterized by a predominance of manual or animal-assisted labor, extremely low average levels of technology and household consumption, and severely underdeveloped infrastructure. Until the reform, the money income of rural households was extremely low; household consumption was provided for mostly by direct allocation of food and other physical goods. It is only in the recent period, with the dissolution of the collective system, the return to a certain form of family farming, and increases in agricultural prices, that the buying power of rural households has dramatically increased.

Thus, until the reform, and to a significant extent even today, the urban-industrial and rural sectors have coexisted with greatly differing technological levels and conditions of life, almost like two separate socio-political-economic entities. In former times, that separation was maintained also by heavy restrictions on the movement of populations. Today, with the relaxation of those restrictions and the booming development in the cities and towns, as well as significant increase in rural incomes, the living standards and mobility of the population have increased greatly.

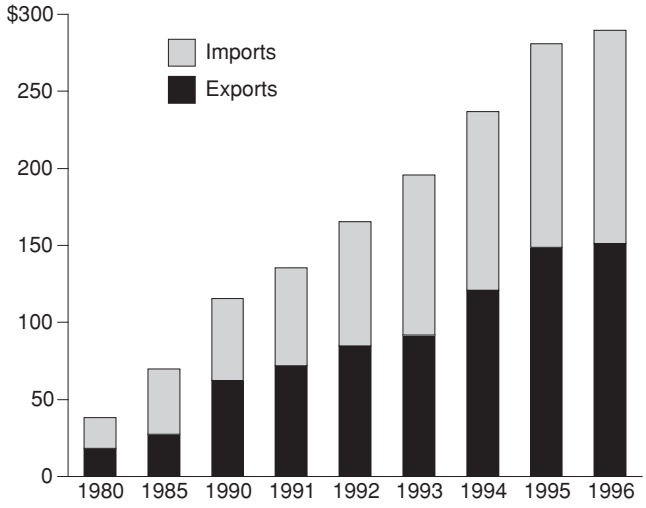
Added to this is the impact of so-called township enterprises or village industry—i.e., (generally small-scale) manufacturing activities of various sorts established in the rural areas. These enterprises, whose development has been strongly encouraged by government policy, have greatly boosted rural incomes and absorbed considerable portions of labor no longer needed in agricultural production.[3]

Nevertheless, large differences continue to exist in real living standards and educational levels between rural and urban areas. It is estimated, for example, that 5 out of 100 rural households possess a refrigerator, while in the cities, the figure is 66 out of 100.

At the same time, the picture of the two-tier economy has been complicated by the rapid development of China's coastal provinces, adding the dimension of a growing discrepancy between coast and inland to that between urban and rural areas. The coastal regions have profitted from a number of major advantages, especially in regard to the amount and intensity of foreign investment (**Figure 19**). For one thing, the opening-up of China to foreign investment began with selected coastal areas, and has only gradually been extended to other areas. Another, related reason is that the coastal areas are more easily accessed to the outside world, and costs of transport and other infrastructure are much less than in the interior areas. Thus, the export-oriented industries with foreign investment, which have provided a lion's share of investment and increased income, have concentrated in the coastal areas. Naturally, with their head start and relatively modern state of development, the relative attractiveness of the coastal

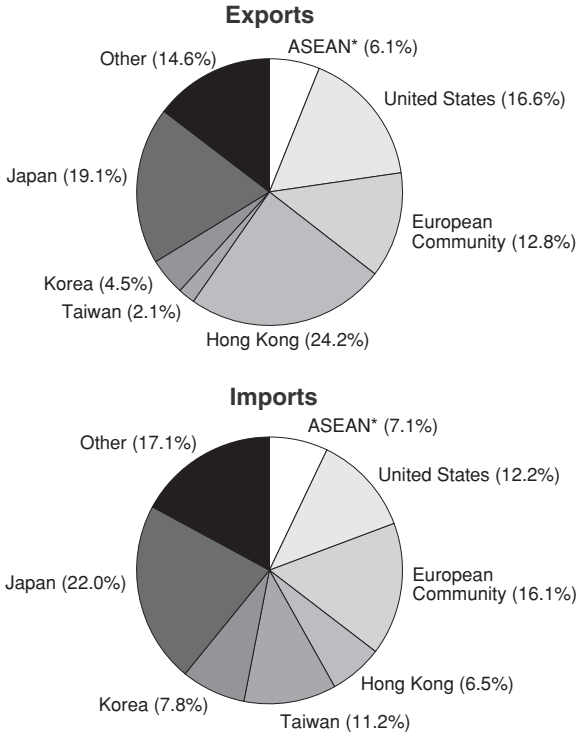
3. It is difficult to judge what portion of the rural labor force working in township enterprises should be considered as genuine industrial labor force.

FIGURE 20
Volume of China's trade
($billions)



Source: Bank of China.

FIGURE 21
Structure of China's trade (1996)



* The ASEAN nations are: Brunei, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

Source: Bank of China.

areas to foreign and domestic investment has further improved, thus widening the gap even more.

Some prominent Chinese economists have pointed to the indispensable role and responsibility of the central government, to counterbalance the discrepancy between coastal areas and the hinterlands, by providing additional investment and other resources for development of the interior regions. The same applies to the role of the government in combatting poverty and reducing the development gap between rural and urban areas. In principle, both are declared government policy; one of the many manifestations is government investment into development of the Eurasian Land-Bridge rail corridor running through the interior of the country.

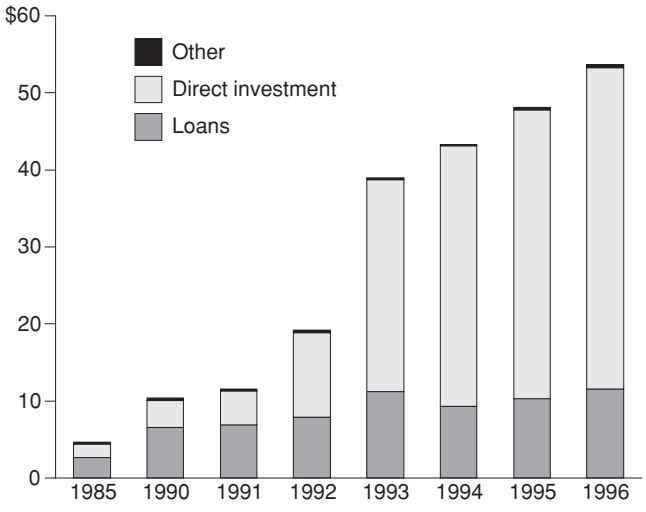
Unfortunately, the central government's ability to maintain a reasonable equilibrium between the various areas of the country, as well as to provide adequate investment into science, technology, and education, has been severely hampered by the inadequacy of financial and material resources. Thus, it is imperative for the government to consolidate its tax base, to improve the tax laws, and to enforce the payment of taxes, which has often been poorly enforced in the past. We understand that significant progress is being made in this direction. Ironically, radical reduction of taxes and similar advantages were a major factor in luring foreign investment into the Special Economic Zones in the coastal regions.

China's leadership has declared its commitment to a thorough industrialization and modernization of the entire country over the coming decades. They have set the goal of raising living standards overall to a level comparable to that of the industrial countries. There is no reason to doubt that commitment. This would mean, however, overcoming the two-tier structure, and bringing modern agro-industrial development from the coastal areas into the vast interior of the country.

The economic boom in China is often held up as a model for how foreign investment and foreign trade can support the development of a "Third World" country. In fact, from 1979 to 1996, a cumulative total of $284 billion of foreign capital was invested in China, $175 billion in foreign direct investment. Foreign trade (exports and imports) went from $29 billion in 1979 to $290 billion in 1996 (**Figures 20** and **21**). China's export income accounts for an astonishing 18% of the overall national income, while foreign investment makes up about 14% of total fixed investment into the economy. On the other hand, China's successful use of foreign investment and export income for national development would have been impossible, if China had tolerated the kind of "free trade," deregulation, and privatization policies which the International Monetary Fund, World Bank, World Trade Organization, and other agencies have imposed on most developing countries.

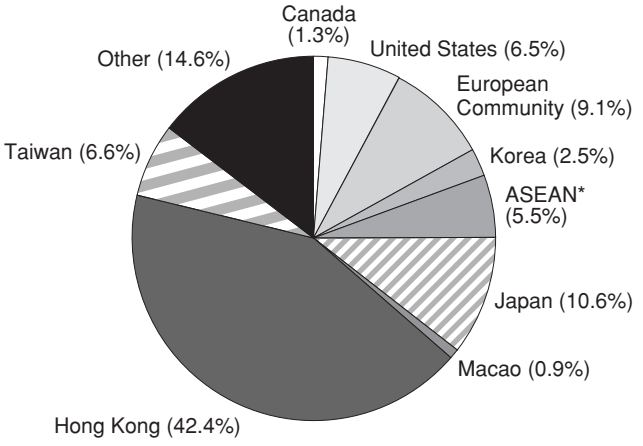
Some additional remarks are relevant:

FIGURE 22
Foreign capital utilized in China
(billions $)



Source: Bank of China.

FIGURE 23
Source regions of foreign capital (1996)



* The ASEAN nations are: Brunei, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

Source: Bank of China.

1. In contrast to the prevailing trend in most developing countries, the Chinese government has exercised a relatively high degree of dirigism and planning in the use of foreign investments. This is done through such agencies as the Ministry of Foreign Trade and Economic Cooperation (MOFTEC). Not only has the government made sure that the largest portion of foreign investment flows into the productive sector, but it has also dirigistically guided that investment into specific areas of technology, industry, and infrastructure, as well as specific areas in the country. While acting to streamline the bureaucratic procedures for foreign investors, and to provide various forms of encouragement, the government continues to maintain a close watch on foreign investments.

2. In contrast to most developing countries, the overwhelming share of foreign investment has been in the form of direct investments, rather than loans and "portfolio investment" (**Figures 22** and **23**).

3. An estimated 70% of foreign investments in China come from Hong Kong, Taiwan, and the huge overseas Chinese community, known as the *hua qiao*. Many of these people (more than 25 million) live in Southeast Asia, especially Indonesia (7.2 million), Thailand (5.8 million), and Singapore (2 million), but also the United States, with about 1.8 million. Not only are the overseas Chinese well-known for their business skills, but many take a personal, patriotic interest in China's development. (There are also some less positive elements of the *hua qiao,* the discussion of which would be out of place in this article.)

4. When speculation and inflation—connected with the "investment boom" in the coastal regions—threatened to get out of control in the late 1980s and early 1990s, the Beijing government intervened with dirigistic measures. Not only was inflation brought under control, but the successful "soft landing" was characterized by a renewed emphasis on healthy forms of investment, including especially physical infrastructure and a shift toward investment in capital-intensive forms of industrial production (see description of investment phases, below).

5. Although foreign investment and import of technology have played a very important role, the rapid growth of the Chinese economy since 1979 would have been impossible without two key *domestic* factors: a) a pre-existing, small but relatively well-developed industrial and technological base, including a military-industrial complex possessing a hard core of advanced technological capability; b) the end of the disastrous Cultural Revolution, and a revival of what I would call "Confucian cultural optimism," while at the same time opening up to the outside world.

6. The relative success of China's reform and development is ultimately inseparable from the fact that China has maintained a certain independence, national sovereignty, and commitment to development of its national economy—one of the few countries in the world to have done so.

The national-economic development of China is naturally a big and growing thorn in the side of the London-centered world financial oligarchy, which is committed to eliminating national sovereignty and establishing a "world government" based on the dominance of supranational financial institutions. This is the ultimate source of the enormous pressures being applied to the Chinese government, in the context of negotiations for entry into the World Trade Organization and

in other contexts, to force China to give up key aspects of its national sovereignty and to force it into a position of financial and economic dependency. So far, however, China has resisted, and China's resistance is being strengthened by the growing realization, that the globalist financial institutions are themselves hopelessly bankrupt, and that the entire system is headed for collapse.

Chinese industrial development since 1949

In order to gain an adequate understanding of China's present economic situation, including the challenge of reform of state-owned industry, it is necessary to review some of the highlights of China's economic history since the founding of the P.R.C. in 1949. That history is characterized by a succession of rather abrupt, zig-zag turns of economic and social policy.

Period of Soviet-assisted industrial construction (1950-60)

At the moment of its founding in 1949, the People's Republic of China had virtually no industry, outside of what the Japanese had left in Manchuria, plus some industries in Shanghai and a few other coastal cities. While early attempts by the new Communist Party leadership to establish ties with the United States and other Western countries met with a cold shoulder, the post-war reconstruction and development of the P.R.C. benefitted from major support from the Soviet Union.

During the 1950s, the Soviet Union provided the P.R.C. with large amounts of industrial equipment and technological know-how, laying the foundation for much of the pre-reform development of China's heavy industry and machine-building sector, both in the civilian and the military-industrial domains. In a number of key cities, particularly in the northern half of China, large, Soviet-style industrial complexes were set up. During this period, Soviet advisers were active in countless facets of China's development, ranging from industry, infrastructure, and housing construction, to technical education and city planning. At a time when the P.R.C. was virtually cut off from contact with Western countries, a core of Chinese technicians, engineers, and scientists received advanced training and practical experience in the Soviet Union. Many of China's present top leaders, including Jiang Zemin, Zhu Rongji, and Li Peng, received technical training in the Soviet Union in that period. In addition, China's industrial development was greatly assisted by Western-educated Chinese scientists and engineers, who returned to China in the post-1949 period, after studying and working abroad.

In the context of this "Stalinist" industrial buildup, Moscow also gave crucial assistance in military-related technologies, particularly in the fields of aircraft manufacture and nuclear energy. China's military aircraft industry got its start in the manufacture of early-series MiG fighters, and plants for production of T-54 tanks and other military hardware were set up. The year 1955 marked the official start of China's nuclear program, for which Zhou Enlai took personal responsibility. In that year, the Soviet Union began to help China with uranium prospecting and with the construction of a cyclotron and a 7 MW heavy water reactor. The latter went into operation in 1958, while at the same time, detailed planning and preparations were made, with Soviet assistance, for the construction of a uranium enrichment plant and other key nuclear technologies.

Beginning already in mid-1959, and accelerating rapidly thereafter, the Soviets began to withdraw their technical assistance to the Chinese nuclear and other advanced-technology programs. With the open break between the Chinese and Soviet leaderships in 1962-63, virtually all Soviet aid to China's economy was suspended. In response to what they saw as global encirclement from the West *and* the Soviet Union, the Chinese put their nuclear and related military technology programs on a virtual war-mobilization footing. In an astonishingly short period of time—given the limitations of virtually autarkical development and the still extremely backward state of China's industrial and technical base—China produced its first nuclear explosive device, and went on to test a missile-delivered nuclear weapon. A short chronology records some of the highlights:

Oct. 16, 1964: First ground test of a fission device by China.

May 14, 1965: First test of an aircraft-delivered fission bomb.

Oct. 27, 1966: First test of a guided missile-carried nuclear weapon.

June 17, 1967: First H-bomb explosion by China.

April 24, 1970: Chinese launch satellite into Earth orbit.

At the cost of enormous sacrifices, carried out in isolation from the rest of the world and under extremely repressive political conditions, the Chinese nuclear and rocket programs, and related "crash programs" in the military-scientific field, nevertheless established a significant base of advanced technological capability in the country. While the influx of foreign investment and technology since the beginning of the reform has been very significant, it alone cannot account for the virtual economic miracle of post-1978 China.

The 'Great Leap Forward' (1958-59) and 'Three Bitter Years' (1960-62)

Between 1953 and 1957, China's First Five-Year Plan succeeded in establishing a core of heavy industry and machine-building as well as an 18% increase in agricultural output. Toward the end of that period, parallel with the increasing shift of the post-Stalin Soviet Union toward a "détente" policy

with the West, resistance began to build up against the "Soviet model" within the Chinese leadership. Perhaps anticipating a drastic reduction in Soviet economic assistance, the Chinese leadership under Mao Zedong turned away from the relatively capital- and technology-intensive, urban-centered approach of the Russians, adopting instead Mao's strategy for deploying China's peasant masses in decentralized, low-technology, labor-intensive forms of production.

Mao's economic philosophy found a concentrated expression in the forced collectivization campaign, in the People's Commune Movement launched in 1958, and above all in the disastrous "Great Leap Forward" of 1958-59. The cost was high: It is estimated that from the end of the "Great Leap Forward" through the ensuing "Three Bitter Years," over 10 million people died of hunger. China's economy was ruined.

Partial recovery and the launching of the 'Third Line' (1963-65)

The utter failure of the "Great Leap Forward" and related policies strengthened the authority of Liu Shaoqi, Deng Xiaoping, and others in the leadership, who emphasized the importance of technological development and economic efficiency over Mao's "mass ideology." Under a series of measures essentially reversing Mao's policies, China experienced a partial economic recovery, including a significant revival of industry.

In 1963, in the middle of the recovery, a new, sudden turn of policy occurred, with the launching of the so-called "Third Capital Construction Line." The "Third Line" had the character of a war-economy mobilization, conducted in the context of Mao Zedong's conviction, that a nuclear war was probable or even imminent in the near future, and that the concentration of industry in China's coastal regions made the country extremely vulnerable to attack. (One should remember, also, that the Vietnam War was escalating throughout the period of the "Third Line.") In a conscious imitation of Stalin's World War II policy of relocating Soviet industry en bloc to the regions east of the Ural Mountains, the Chinese leadership launched a "crash program" to relocate strategic industries to the relatively remote interior regions of the country—in the provinces of Sichuan and Guizhou, the southern parts of Shaanxi and Gansu, as well as the western parts of Hunan and Hubei. Besides relocating existing industries, countless new industrial plants were built up, with the aim of establishing a fully developed defense-industrial base in the hinterland. At the same time, the "Third Line" went hand-in-hand with the most advanced technological developments in the country, including development of long-range missiles (centered especially in Sichuan), military aircraft construction, and the nuclear program.

According to Chinese sources, the total investment into "Third Line" construction, between 1965 and 1971, amounted to about 127 billion yuan. Western experts estimate, that about 40% of the total capital investment of the country in that period went into the "Third Line."

"Third Line" construction meant not only military industries per se, but also brought basic industries, water systems, electricity, transportation, communications, education, and other basic economic infrastructure for the first time into many of the most underdeveloped areas of China. Tens of thousands of specialists, engineers, and skilled workers were brought into heretofore backward areas; schools and housing had to be constructed for their families, and training facilities set up to educate the local workforce engaged in construction and industrial projects. From the last half of 1964 through 1965 alone, some 300 large industrial complexes were set up in the "Third Line" areas, including 14 steel plants, 18 nonferrous metallurgy plants, 14 chemical plants, 10 fertilizer plants, etc.

At the same time, 26 railroad projects were launched, including one of the most difficult and dangerous railroad projects in the world: the 1,100 km line from the city of Kunming to Chengdu in Sichuan Province. Seen as a crucial link from the military-strategic standpoint as well as from an economic standpoint, this rail line ran through some of the most difficult terrain in all of China. Some 991 bridges had to be built, making up over 40% of the total length of the line, plus countless tunnels. The "Kuncheng" rail project was closely connected with another of the most important and challenging projects of the "Third Line": the construction of a huge steel complex at Panzhihua, a remote and extremely difficult location.

The economic impact of the "Third Line" remains a matter of hot debate in China up to this very day. On the one side, the costs of building, maintaining, and operating infrastructure and industrial plants in the "hinterland" areas were astronomically high, compared with the easily developed coastal regions of China. Hence, "Third Line" industries were hardly competitive from a simple-minded economic point of view. On the other hand, under the conditions of a virtual war-economy mobilization, infrastructure and industrial development was spread for the first time deep into the interior of the country. In a very short period, the existing core of scientific and engineering cadre and machine-tool capability was revived and greatly expanded.

The 'Cultural Revolution' (1966-76)

Merely two years after the "Third Line" was launched, the whole country was thrown into chaos by a completely contradictory policy thrust: Mao's "Great Proletarian Cultural Revolution." Under the attacks of the Red Guards, countless "Third Line" projects were brought to a standstill; transport was disrupted; project leaders, specialists, and even workers were harassed, prevented from working, or sent off to other areas.

Exemplary of this process is Sichuan Province, one of the key centers of "Third Line" construction. Between 1966 and

1968, industrial production collapsed by over 48%. Deng Xiaoping, who played a significant role in the "Third Line," made major efforts to protect and restore production, only to be denounced and punished. A further, disastrous collapse of industrial and agricultural production occurred, reaching its worst point in 1976, when the amount of agricultural produce purchased by the state amounted to merely three-quarters of what it had been 20 years earlier. The strategic "Kuncheng" railroad project, whose construction was already half-completed by the end of 1966, was brought to a virtual standstill. It was only through the personal intervention of Prime Minister Zhou Enlai, that the railroad could finally be completed, in the summer of 1970. Countless other examples could be mentioned.

Thus, in the midst of the terror and devastation of the Cultural Revolution, the political protection provided by Zhou Enlai and others—no doubt under the pretext of the vital military-strategic importance of the "Third Line"—kept some of the original "Third Line" policy thrust alive, and allowed many of the most important projects to go ahead. Although a faction of the Army had opposed the Cultural Revolution from the very beginning, it was first after the 1972 death of the Chief of the General Staff Lin Biao, a particularly rabid supporter of the Cultural Revolution, that the groups around Zhou Enlai and Deng Xiaoping could expand their influence and eventually bring the Cultural Revolution to an end.

It is most revealing, that over the entire period of Maoist rule, from the founding of the P.R.C. until the beginning of the Deng reform, hardly any change occurred in the overwhelmingly peasant character of China's population structure; the percentage of labor force engaged in agriculture fell by only 8%—from about 90% in 1950 to 82% in 1978.

Shift to reform (1977-79)

With the death of Mao Zedong in September 1976, and the defeat of the "Gang of Four" in the ensuing period, the way was opened for fundamental changes in practically all policy domains. December 1978 marked the official beginning of the new reform course under Deng Xiaoping, which reversed Mao's emphasis on "class war" and placed the highest priority on science, technology, and the "development of the productive forces" by the most rapid and effective means available. It was this policy, still evolving today, which dictated the transition to a "socialist market economy," in which a growing role of markets and private enterprise is to be combined with the maintenance of "macroeconomic control" by the government and a continued, dominant role of "public ownership" in strategic sectors of the economy.

Phases of the post-1978 reform

To describe the various economic reform measures and their evolution since 1978, lies beyond the scope of this article. Readers are referred to the excellent summary provided by Chinese economist Bi Jiyao, and published by *EIR* on Jan. 9, 1998.

We have already noted that the economic reforms in China under Deng Xiaoping took an entirely different pathway than the infamous shock therapy applied to the former Soviet Union.

In Russia, reform focussed on radical privatization of the state-owned industry and drastic reduction of the economic role of the central government, while the large-scale collective farm structure of the agricultural sector remained unchanged.

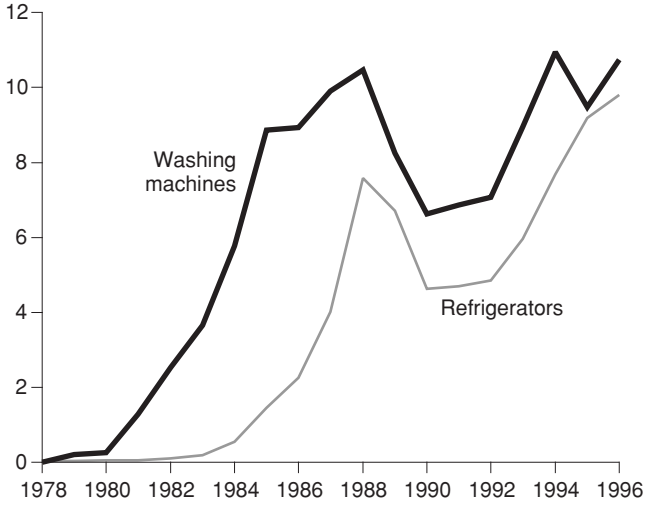
In China, the reform *began* with the agricultural sector, by dissolving the Maoist agricultural collectives and transferring responsibility for cultivating the land into the hands of the individual families, via the so-called responsibility system. Fundamental reform of the state-owned industry was put off to a much later stage, and is only beginning now, some 18 years later. In stark contrast to Russia, where the so-called reform led to a precipitous collapse of industrial production, the Chinese reform has emphasized rapid expansion and modernization of production, employing foreign capital and know-how on a large scale, while at the same time carrying out major improvements of transport, energy, and communications infrastructure.

Rather than to privatize the state-owned industry, the early emphasis of industrial reform policy was to bring in foreign investment and technology to establish a large number of *new private and collective enterprises* and modernize as many state-owned enterprises as possible. The new enterprises, in large part joint ventures oriented toward exports as well as the domestic market, were initially concentrated above all on an array of Special Economic Zones in coastal regions.

In the first phase, the foreign capital input was concentrated in the south of the country, especially in Shenzhen, adjacent to Hong Kong in Guangdong Province, and then gradually moving northward along the coast. Based largely on investments and joint venture capital from Hong Kong, Taiwan, and overseas Chinese businessmen, this first phase was characterized by the exploitation of cheap labor in labor-intensive, relatively low-technology modes of production. This included especially enterprises producing clothing and textile products, shoes, toys, and other consumer goods for export.

At the same time, the rapid increase in household income—an average of 17% increase per year for rural households between 1979 and 1985, and even more for urban households—helped fuel an enormous domestic demand for consumer goods. This led in the early 1980s to a sharp increase in the production of "traditional consumer goods," for which a considerable production base already existed before the reform: spinning and weaving, clothing, shoes, wrist watches, sewing machines, food products, and some others. China's own capital-goods industries were able to supply a great part of the equipment and infrastructure needed for

FIGURE 24
Output of selected consumer goods
(millions of units)



Source: *China Statistical Yearbook.*

this expansion.

By the early 1980s, the expansion of "traditional consumer goods" had virtually saturated the domestic market. The expansion process shifted toward consumer durables, including especially household appliances, for which there is great demand in China: refrigerators, washing machines, television sets, etc. At the same time, and connected with this, the emphasis in use of foreign capital shifted toward higher levels of technology. This included setting up modern plants in China to carry out the more labor-intensive operations in the manufacture of high-technology products, often importing certain critical components and materials from abroad. A landmark in this second phase was the establishment of the Pudong Industrial Zone in Shanghai.

Toward the end of the 1980s, the rapid increase in production of consumer durables slowed down, in large part because the prices of many of those goods—whose manufacture required considerable amounts of imported machinery, components, and materials—were still too high compared to the average family income, especially in the rural areas (**Figure 24**). Stimulated by a huge boom in infrastructure and building construction, the center of gravity of industrial expansion shifted to primary industries such as steel, cement, petroleum, and chemicals. The construction boom has continued to grow from the early 1990s until today. The scale of urban construction in particular can only be described as mind-boggling—as any visitor to Shanghai and other major Chinese cities will affirm. This is the third phase of development under the reform.

Some structural problems in China's industrial development

It is generally acknowledged in China that the country has now entered the most difficult and decisive period in the entire reform process: the phase of large-scale restructuring and modernization of the state-owned industry, which poses severe problems not encountered in the previous phases of reform. Chief among these is how to create useful employment for tens of millions of so-called "excess" workers, whose present jobs are threatened by the ongoing rationalization of state industry, including the closing-down of obsolete or ineffective production.

Faced with this challenge—compounded by the effects of the Southeast Asian and world financial crisis, which can lead to dramatic falls in China's export earnings as well as in the flow of foreign investment—the Chinese leadership has come up with an extraordinary new policy: to launch a kind of "Chinese New Deal," which would stimulate economic growth and employment by large-scale public and private investments into (especially) housing, infrastructure, and other public works. We shall say more about this below.

In order to understand the nature of the challenge facing China in this phase of reform, it is necessary to point out some of the weaknesses in China's recent economic development, including structural problems left behind by the history I have just sketched.

Despite the Chinese reformers' declared emphasis on "developing the productive forces," a significant part of the spectacular growth of China's nominal GNP since 1979 has been connected with investments that have little or no positive impact on real physical productivity. A large component of this has been a dizzying boom in construction of luxury hotels and apartments, shopping malls, office buildings, and other nonproductive facilities. Another component has been the misdirected channeling of precious resources into the overexpansion of certain sectors of production—particularly in textiles and other consumer goods. This purely linear, extensive kind of development, encouraged by chaotic or nonexistent planning and a rush toward quick profits, has resulted in massive redundant capacities and mountains of unsaleable, generally low-quality goods.

These and related phenomena began to become rampant in the pre-1993 period, when a parasitical "bubble economy" grew up in many coastal regions of China, connected with the sudden inflow of large amounts of foreign money seeking high rates of return in real estate development and labor-intensive export industry (including an unknown portion of "hot money" from Hong Kong and other areas). These "bubbles" played a key part in the outbreak of double-digit inflation which threatened to destabilize the country at the beginning of the 1990s. (The Chinese population has a strong

TABLE 1
China's imports of capital equipment in 1996
(categories with more than $1 billion in imports in 1996)

Textile machinery	$2.65 billion
Metalworking machine tools	$2.52 billion
Moulding equipment	$1.93 billion
Lifting, transporting, loading and unloading equipment for machinery	$1.73 billion
Automatic data processing equipment and components	$2.88 billion
Cable-based telephone and telegraph equipment and spare parts	$1.16 billion
Television receivers and wireless communication equipment and parts	$1.39 billion
Electric circuit switching and protection devices	$1.43 billion
Integrated electronic circuits and micro-electronic modules	$2.60 billion
Automobiles and auto parts	$1.91 billion
Aircraft	$2.13 billion
Equipment for control and measurement, scientific instruments, and tools	$1.89 billion

cultural tradition of family savings; hence, the potential explosive implications of a high inflation rate.) The so-called "soft landing" accomplished by the Chinese government after 1992-93, in greatly reducing inflation without interrupting real physical growth, was a major victory for the national leadership. Nevertheless, the tendency toward linear or purely extensive growth and the bubble economy remain major problems.

A closely related issue, a very serious one in the medium term, is the future of the China's strategic capital-goods industries, especially machine tools and machine building generally. This, of course, directly intersects the issue of reform of the state-owned industry, where much of the strategic capital-goods production has been concentrated.

As I have indicated, China's industrial expansion, especially in the second and third phases mentioned above, depended on large-scale imports of modern production equipment (**Table 1**). China is presently the second-largest importer of machine tools and industrial equipment in the world. Machine-tool imports alone grew from $485 million per year in 1990 to over $2 billion by 1994. At the same time, the share of domestic capital-goods industry in the domestic market has decreased dramatically. Whereas up to the beginning of the 1980s, domestic producers were still supplying 90% of the country's consumption of production machinery, that percentage had already fallen to 69% in 1994. In the case of machine tools, the domestic producers' share of China's machine-tool market sank from 62% in 1991 to less than 40% in 1994. At present, 80% of purchases of numerically controlled machine tools in China are imported. Similarly, the share of domestic production in China's consumption of electrical machinery has fallen dramatically.

Now, the Chinese government's policy of encouraging foreign investors to bring in modern equipment from the outside is obviously a good and very necessary policy. On the other hand, the modernization of the machine-building and especially the strategic machine-tool industry—which should continue to supply the lion's share of China's vast requirements—has *not* been pursued with the same intensity as the more lucrative setting-up of modern production-lines for consumer goods. As a result, the domestic capital-goods industry is facing an increasingly difficult situation as a result of competition from foreign imports of production equipment.

The average technological level of the domestic machine-building industry, reflecting its roots in the period of Sino-Soviet cooperation and a subsequent period of nearly autarkical development, lags greatly behind the present standard of the Western industrial countries. Enormous long-term investments in modernization of equipment and training of manpower will be required, in order to bring this sector up to a level competitive with foreign producers overall. Insofar as China's economic policy and investment environment are oriented toward rapid expansion in the short term, it might appear more profitable to rely on imported machinery and to allow the domestic machine-building sector to shrink further. In the medium and long term, however, such a policy would completely undermine China's security and viability as a sovereign nation.

The Chinese government and industry are, of course, not unaware of this situation. Many measures have been initiated to upgrade the technological level and competitiveness of China's producers of machinery and other industrial equipment. Besides the general strategy of assimilating the most advanced foreign technologies, China is pursuing its own high-technology R&D programs, including the famous "836" program, in such fields as numerically controlled machine tools, materials science, microelectronics, and laser technology. While these programs are excellent and necessary, in the author's view they are hardly sufficient to bring China's domestic machine-tool and industrial equipment sectors up to the level the country's future really requires. To transform these strategic sectors, China needs an array of *large-scale* high-technology projects—including government-supported "crash projects" analogous to the key role which nuclear and aerospace programs (such as the Apollo program) played in boosting the productivity of the United States, Japan, France, Germany, and other major industrial economies in the post-war period.

The most obvious idea—which fits very well with the "New Deal" policy announced by the Chinese government—would be to take China's enormous infrastructure deficit (transport, energy, urban construction) and transform it into a locomotive for modernizing much of the capital-goods

sector. The key would be to build infrastructure "development corridors" based on the most advanced technologies available, thereby accomplishing two things: 1) providing China with a highly efficient infrastructure suited to the 21st century (rather than the 20th century!), including advanced, high-speed ground transportation systems and advanced forms of nuclear energy; 2) creating a huge domestic demand for high-technology equipment, thereby greatly stimulating the development of the relevant sectors of Chinese industry.

Nuclear power is the obvious candidate for such an approach. China already has the capability to build its own nuclear power plants, as demonstrated in the Qinshan power station. China has also developed successful partnerships with France and other countries in the nuclear power field. In addition, China is presently constructing an experimental high-temperature reactor (HTR), which is the prototype of *mass-produced modular HTR reactors* which can provide process heat as well as highly efficient electricity generation. At the same time, China's dependence on coal as the main source of energy (China presently burns up 1.3 billion tons of coal each year!) exerts an enormous drag on the economy, clogging up the transport system and creating a severe pollution problem. The rational alternative is to go for mass production of modular nuclear reactors, with the long-term goal not only of "freezing" the consumption of coal, but also finally shifting entirely from coal to advanced forms of nuclear energy, together with gas, hydroelectric, and nuclear-produced synthetic fuels as the main source of electricity and industrial process heat.

The other crucial area is high-speed ground transport. By the year 2000, more than 100 million Chinese will live in cities of more than 1 million inhabitants, and urbanization will continue at a rapid pace. China urgently needs a "crash program" to 1) build up high-speed ground transport links among the cities, avoiding the enormous waste associated with over-reliance on short- and medium-range air transport; 2) to build up high-speed urban mass transit systems inside the cities (only Beijing and a couple of other cities have even the rudiments of an underground mass transit system). Magnetic levitation systems would be the most attractive, high-technology option, and this concept has been receiving increasing attention in China. This would mean building up entire new, "sunrise" industries.

A common objection to this kind of approach is that, given the long-term nature of such projects, they could only be carried out with huge investment by the state—investments far beyond the present financial means of the central government. Actually, we consider that on the basis of a rigorous use of "Hamiltonian" methods of national bank credit-generation, high-technology infrastructure development could not only be successfully financed on a large scale, but it would bring enormous "pay-backs" to the Chinese economy already in the short term.

The problems of state-owned industry

At present, state-owned enterprises are still the main suppliers of energy, raw materials, and industrial equipment to China's economy. They occupy the leading position in communications and transport. In the postal and telecommunications sectors, commercial air transport, and rail transport, state-owned enterprises still account for nearly 100%. The state-owned industry acts as the locomotive and dominating force in the sectors of electricity, coal mining, petroleum extraction, metallurgy, chemicals, electrical machinery, and textiles. It has a dominant role in the strategic machine-building and machine-tool sectors. State-owned enterprises account for more than 67% of urban employment and 65% of the national capital. Since the reform, they have absorbed more than 70% of the nation's fixed capital investments.

When the Chinese leadership embarked on the reform process, it was clear that the reform of the state-owned industry would pose a formidable problem with potentially major social complications. In accordance with Deng Xiaoping's maxim, "Reform must never separate from development," the Chinese government adopted a strategy completely opposite to that of eastern Europe and the former Soviet Union, where reform was accompanied from the very beginning with a dramatic collapse in production. Instead, the Chinese reformers opted to launch a process of rapid, sustained economic expansion *first,* without major restructuring of the state industry, in order *thereafter* to attack the problem of deep reform of the state-owned industry from a position of strength. In the meantime, an extraordinary growth of new enterprises of all sorts has occurred, which has already played a decisive role in absorbing large amounts of (especially) the rural labor force. According to some Chinese estimates from the beginning of the reform until 1993, some 220 million new jobs were created in the country (many of them in township enterprises), which is more than the total number of jobs created in the entire 30 years before the reform and opening-up policy. This gives reason for some optimism regarding the possibility of re-employing "redundant labor" which is slated to be eliminated in the rationalization of state-owned industry.

This wise strategy of postponing the restructuring of state-owned industry, was adopted at the calculable expense of creating or exacerbating problems, such as large debt accumulations in the state sector due to the issuance of bank credits to cover the operating deficits of loss-making industries. But it is important to understand, that the mere statistics of losses of state-owned industries in China, present a very distorted picture of the real situation and prospects of these industries. In actuality, there are many diverse reasons for the losses of state-owned enterprises, some of which have nothing to do with their real physical performance per se.

In the period of the planned economy, industrial enterprises were responsible not only for production, but also for nearly the entirety of social services for employees and their families, often including operation of hospitals and clinics,

housing, kindergartens and schools, canteens, libraries, and provision of pensions for retired workers. The older the enterprise, the larger the number of retired employees to whom it had to provide support. Also, the enterprises did not decide on the number of employees; the state assigned labor to the enterprises, which (generally speaking) had no right to dismiss employees for whom they had no use. As a result, the superficial appearance of "full employment" was obtained at the expense of a high redundancy in the labor force nominally employed by the enterprises—often as much as 30% or more.

Although state-owned enterprises were given greater freedom after 1978, they by and large have continued to carry a heavy burden of social services and redundant employees, even if this meant operating at a continual loss. In fact, given the absence of a centralized social welfare and social security system—the task of building up such a system is only now being taken up by the government in earnest—there was no economically or politically acceptable alternative. Thus, state banks were basically ordered to issue credits to loss-making enterprises, in order to keep them running, and without any real prospect of having those debts paid back. In a sense, these are not real debts, but hidden subsidies which took the place of social welfare and social service payments by the state.

Unfortunately, not all of the problems of state-owned industry are simply due to the burden of social overhead and redundant workers. There are also severe problems of mismanagement on the one side, and excessive age and technological obsolesence of much of the capital equipment and production structure on the other—a situation of obsolesence which has resulted, often over a very long time, from a *chronic deficit in investment*.

To get a more direct sense of the difficulties of the state-owned industry, it may be useful to quote from one of a large number of articles dealing with this issue, which have appeared in Chinese management publications last year:

"The Beijing electron tube factory, called the 774 factory, built in the 1960s, was at the time the largest plant in all of Asia and a flagship for our country's electronics sector. For decades, this plant made an enormous contribution to the development of our nation's electronics industry; our first integrated electric circuits, our first color television tube, etc., were all created here. The backbone of the electronics industry of the whole country was built up with the help and support of the 774 factory. But now, the original equipment investment is aged, and this great factory has no money to carry out modernization. So, while other electronics enterprises are thriving, the 774 plant has been quietly running downhill.

"We can't just smash and destroy such things. In the West there are many enterprises which are 100, 200 or even 300 years old. Do we or don't we want to foster our national economy and our state industry? That is the big question facing the Chinese people.

"Among our state-owned industry there are some model national enterprises, such as the Tianjin Bohai Chemical Group, founded by our nation's famous chemist Hou De Bang. It has a century of history; its Red Triangle Brand Soda Ash has conquered the domestic and foreign markets, and is a really famous international brand name. This plant is a big exporter for Tianjin. Don't we have reason to think that similar enterprises can be improved?

"In the case of 774 factory, the reason for its decline was negligence. But in some reasons the decline of enterprises was unavoidable.

"For example, the northern heavy industry base in Qiqihar, which sprouted up during the 1950s period of good relations with the Soviet Union, in the beginning period after the founding of the People's Republic. Based on Soviet capital investments, an enormous heavy industry was built up, for example: the first heavy machinery plant, the first machine-tool plant, the second machine-tool plant, the Qiqihar steel plant, the papermaking plant, etc. This was a relatively rich industrial base, but by the 1960s, due to the change in China-U.S.S.R. relations, Qiqihar did not become a priority area for national investment. As a result of long-term insufficiency of investment, the industrial equipment has become seriously obsolescent. Today, 50% of the machinery in this city's industry has an age of more than 25 years.

"As another example, in Liaoning Province, a long-standing base for large-scale heavy industry, 62% of the heavy industry was built up in the 1950s. In these industries, 36% of the machinery and equipment was installed before the 1970s. Another old industrial base, Sichuan's Chongqing city, has a similar situation.

"Among our state-owned enterprises, not a few have been affected by strategic-geographical policies. In the 1960s, for strategic reasons, a huge amount of industry was moved into remote regions. In respect to the conditions of reform and modernization, the problems of the industries of those regions cannot be compared with those of the enterprises located near the coast.

"Apart from this, there is another specific feature of the heavy burden carried by the state-owned industry. In an average state-owned industry, one-third of the employees are surplus workers.

"That means, that of approximately 80 million industrial workers, 20-30 million belong to the category of redundant employment. Every year, the state sector must pay more than 100 billion yuan in salaries to redundant personnel.

"In 1995, the total interest payments of medium and large state-owned enterprises reached 86.9 billion yuan, corresponding to 128% of the total profits. In the first half of 1996, state-owned enterprises' expenditures for interest payments grew by 21%, reaching 60 billion yuan. The heavy interest burden of state-owned enterprises meant, that their profit was eaten up by interest payments.

"There is much larger investment into new projects, than into renewing old investments.

"In the first five months of 1996, the proportion of fixed investment that went into basic infrastructure construction was 55%, into real estate 21%, into other areas 5%. But the investment into modernization was just 19% of the total."

Three crucial years

The Chinese leadership has chosen an extraordinarily short interval of three years (beginning 1998) as the time-period to push through *decisive measures* of rationalizing and restructuring the state-owned industry. Evidently, the intention is to make as clean a break as possible with the vicious circle of obsolesence, inefficiency, chronic losses, lack of investment, and ballooning of debt. Judging that this cannot be accomplished without causing a significant crisis—including the release of many millions of redundant workers and the closing of many factories judged to be hopeless cases—the strategy is to get through the most painful part of the crisis as quickly as possible, concentrating all available efforts on alleviating and controlling the negative social effects.

It is much too early, in our view, to pass judgment on this gigantic undertaking, which, perhaps even more than the earlier phases of the reform, is not following a rigid, mechanistic line, but involves a great deal of improvization and day-to-day decision-making. It is, however, worth mentioning some points which have clearly emerged as important elements of the Chinese strategy:

1. *"Grasping the few while releasing the many."* As we indicated above, the situation of state-owned industry differs very greatly from case to case—ranging from virtual "basket cases" which really deserve to be shut down, to well-managed modern enterprises which are already fully competitive on the world market. Generally speaking, apart from some heavy industries suffering from extreme obsolescence, the bulk of the losses are located in the smaller enterprises. Rather than simply leaving enterprises indiscriminantly to "sink or swim" regardless of their role in the regional and national economy, the Chinese government has adopted a dirigistic policy of "grabbing the few while releasing the many." We understand this to mean, that the government will directly support the restructuring and technological modernization of selected, strategic industries (especially larger ones), while withdrawing its role in the management of many other (particularly smaller enterprises).

I should stress, that this is not a policy of wholesale, indiscriminant privatization of state-owned industry, as wrongly implied by some Western press reports of the 15th Party Congress in September 1997. What was decided, was on the one hand to carry out far-reaching changes in the management structure of the state-owned industry, freeing it to a large extent from government bureaucratic structures and providing for a much greater degree of independence and responsibility in day-to-day decisions. On the other hand, it has been decided to gradually transform the ownership structure of many enterprises, from centralized state ownership in the strict sense, to a mixed form of "public ownership" which can include the sales of shares to employees and possibly others (the so-called "joint shareholding system").

Part of the motivation for this change in ownership structure, is the desire not only to attract additional foreign investment, but also to mobilize the enormous private savings of the Chinese population—estimated at approximately 3 trillion RMB—for the purpose of recapitalizing the industry and financing the urgently needed process of modernization and infrastructural development.

In fact, the task of drawing in new capital, and the task of restructuring finances and management, are inseparable from each other. Obviously, debt reorganization and reform of ownership and management structures, cannot by themselves provide a substitute for the new physical investments in basic industrial sectors that are urgently required for modernization. Without solving the debt, social overhead, and management structure problems, however, new investments cannot be used effectively, but will tend to disappear into a "black hole."

2. *The "re-employment project" and establishment of a social security system.* Out of an official total employed workforce of 689 million (1995), a reduction of 20-30 million in state-owned enterprises might seem tolerable at first glance, at least for a limited period. It must be emphasized, however, that the unemployment caused by release of redundant workers and rationalization of state-owned industry is not distributed evenly over the country, but is mainly concentrated in certain industrial centers and branches of industry, where the reform can have dramatic negative consequences. The main areas of threatened mass unemployment include the textile and light industry, machine-building, electronics, coal, forestry, and military enterprises, especially in the Northwest, Northeast, and Southwest regions. For this and other reasons, the government recognizes that the reform can only be carried out successfully, if a large percentage of the workers can be provided with new jobs. Two things are key to achieving that: a) increasing the demand for labor by stimulating the overall expansion of the economy and particularly of the private sector, which has accounted for 95% of new employment in recent years, as well as directly providing additional employment through infrastructure and public works projects; b) creating social institutions and facilities which assist workers in finding new employment (a novelty in China), improving their education, as well as building up a social system including unemployment and health insurance. The latter is by itself a gigantic undertaking, whose completion will certainly extend much beyond the next three years.

3. *The "New Deal": maintaining a high rate of growth through the three decisive years and beyond.* We have already mentioned how the Chinese government, partly in response to the Southeast Asian financial crisis and the unpleasant prospect of a possible collapse of exports and foreign investment at this crucial moment in China's reform, has announced a huge increase in the overall level of investment in China's economy over the coming three years. Government officials

have cited figures between $750 billion and $1,000 billion, and emphasized that a large part of the increased investment—which includes both public and private spending—will go to infrastructure and housing construction. The idea is to exploit the vast potential of the internal market of China in order to maintain a high rate of growth in the national economy. A conference speech given earlier this year on the employment problem by an official of the State Planning Commission reflected the concern for employment and social stability, which is a major motivation of the "New Deal" policy:

"China is in a special historical phase of her reform and development in 1998. Whether the employment problem is properly handled or not will directly affect the course of the reform and the stability in the society. . . . At present, China needs a stable social environment to carry out development and reform. . . . As the speed of economic growth is of decisive significance to increasing job opportunities, the determination of the growth rate of China's GDP in the coming three years has the utmost important influence on whether the employment problem can be solved properly. . . . The planned GDP growth rate in 1998 cannot be lower than 8%. . . . We propose that the real GDP growth in the coming three years should be 9%, 10%, and 11%, respectively."

The same speaker reflected, at the same time, the concern that merely stimulating GDP growth per se might not only produce the desired result of increased employment, but could also relaunch growth of the "bubble economy" and the endemic tendency for wasteful, purely linear expansion of production. This defect, inherent in pure "Keynsian methods," has attracted growing attention among Chinese economists. The general answer is clear, namely, that a healthy expansion of China's economy requires a dirigistic approach on the part of the government, to ensure that investment is channeled in directions which increase the productivity of the economy as a whole.

Housing construction has been emphasized as a crucial component of the "Chinese New Deal." This includes not only improvement in the quality of the (often rather cramped) apartments in existing cities, but also new urban construction. A healthy urbanization process in the interior of the country requires the expansion of towns and villages into smaller cities, which can absorb population from the surrounding rural areas and provide useful employment. This urban construction, which includes, of course, not only housing per se, but also the transport, energy, communications, and water infrastructure needed for an efficient city, itself represents a major factor for increased employment in the period immediately ahead.

Big country, big problems, big promise

Reforming the state-owned industries while limiting unemployment, solving the accumulation of bad debts in the banking system, alleviating the growing water crisis and other severe "environmental" problems, remedying the economic disparities between interior and coastal regions, combatting corruption, upgrading education—reflecting on the variety and gigantic scale of China's problems, some observers tend to take a guarded or even pessimistic view of the country's future.

Such a pessimistic view, however, fails to take the all-decisive "human factor" into account. The last 20 years of economic reform have been an intensive problem-solving process involving the leadership of the country and large sections of the population, top-down. It is often stressed in China, that there is no direct model or clear precedent for the process going on now—neither in China's own history, nor in the West. And this is clearly true to a large extent. This daily activity of problem-solving, improvization, and experiment, has helped to bring forward a layer of leaders at various levels of the economy, whose seriousness and sophistication are far beyond what predominates in most of the rest of the world at this juncture. To put it bluntly: China's leadership has demonstrated that it is serious about solving problems, while the ruling elites of most other nations spend most of their time running away from them.

During President Jiang Zemin's visit to the United States last October, one of the most significant events was a speech at Harvard University, in which Jiang stressed the importance of Classical Chinese culture and of China's unbroken history going back 5,000 years (see *EIR,* Nov. 28, 1997). While largely ignored by the Western press, that speech reflected *profound changes* which have been occurring in the thinking of China's political elite.

Faced with the unprecedented challenges of bringing this ancient nation with its present 1.2 billion people into the 21st century, amidst a world full of crisis and uncertainty, China's elites want to revive the most positive traditions of Classical Chinese philosophy, science, literature, and art, and to create a kind of *cultural renaissance* in the country. Although the desire to protect China's youth from the sick "rock-sex-drugs counterculture" from the West is a major included consideration, this cultural revival is not at all anti-Western. The well-publicized fact, that Jiang Zemin personally loves Western Classical music (he plays Mozart and Beethoven on the piano in his spare time), and can recite poems by Shakespeare, is symptomatic of a widespread attitude among the Chinese elite, which deeply admires the scientific and artistic accomplishments of European culture and wants China to assimilate those positive elements. It is a shocking irony of history, that China should reach out for the best traditions of the West at exactly the same time, that Western nations seem to have turned their back on them.

In the last analysis, physical economy is a function of culture. Without taking into account the powerful revival of *Confucian cultural optimism* in China, it is impossible to understand the success of China's reform and development since 1978. That same cultural optimism, to the extent it finds a positive echo in the world at large, gives us confidence that China will be able to solve its most urgent problems, and become a leading nation of the world in the 21st century.