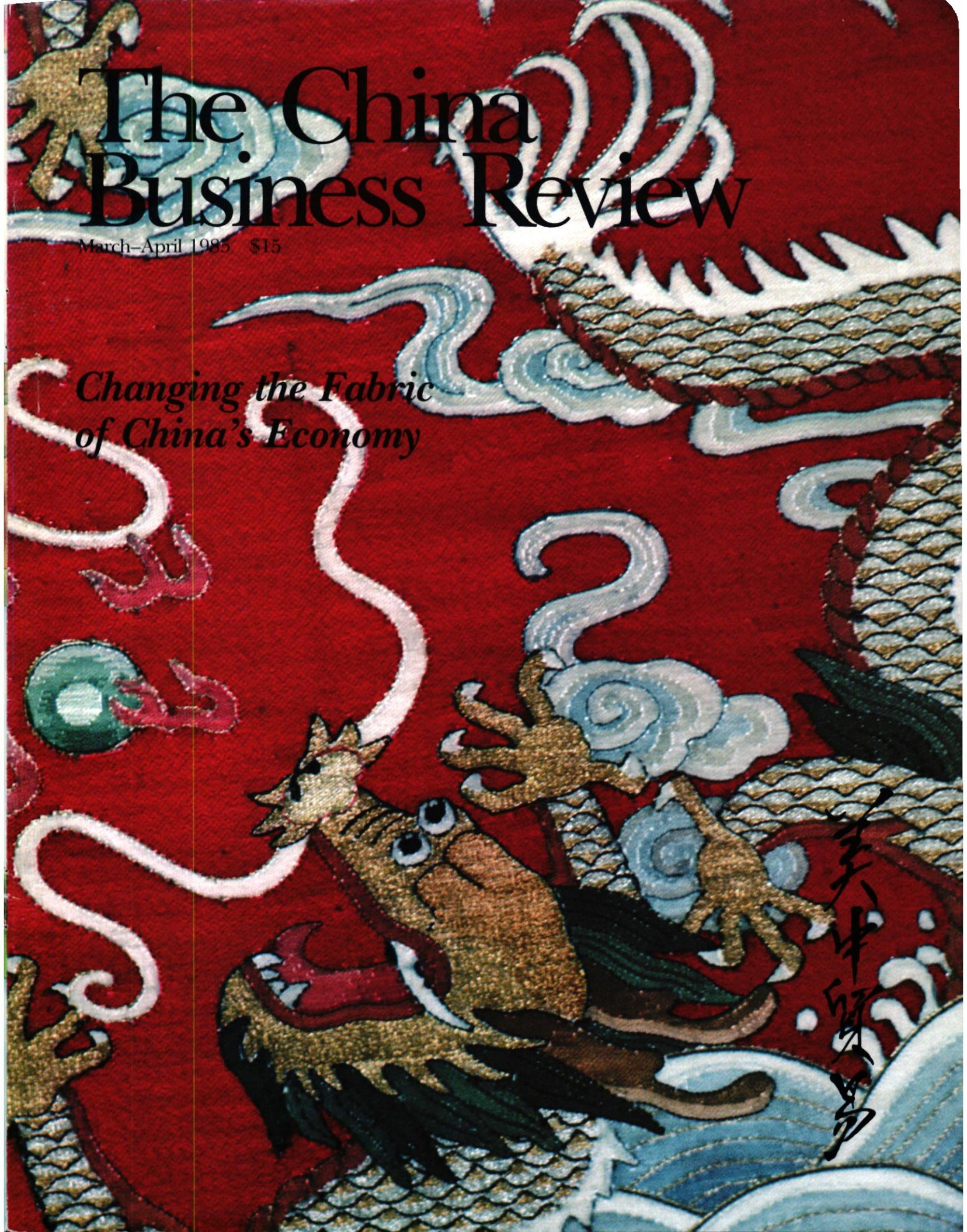
# The China Business Review

March–April 1985 $15

## *Changing the Fabric of China's Economy*



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# The China Business Review

The magazine of the National Council for US–China Trade

March–April 1985 Volume 12, Number 2

**Cover:** China's leaders are instituting new reforms in industry and commerce, while broadening successful agricultural policies. *Photo by Cary Wolinsky, Stock, Boston.*



**Banks:** Domestic banks gain new powers in China's reformed financial system. **Page 17.**



**S&T:** Science and technology reforms are designed to support industrial modernization goals. **Page 32.**



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# 摘要

## THE CABBAGE PATCH FACTOR

US–China trade grew to an all-time high of almost $6.1 billion last year, up from $4.4 billion in 1983. US exports rose to just over $3 billion in 1984, an increase of 38 percent over 1983, though still short of the record $3.7 billion established in 1980. American imports grew at about the same rate, reaching almost $3.1 billion. The resulting US trade deficit with China was an unexpectedly low $60.5 million, down from the $71 million deficit registered in 1983.

At mid-year, analysts had predicted a much larger US deficit; through July, US exports trailed imports by $390 million. But strong American export performance in the second half of the year brought US–China trade closer to balance than it has been in any year since 1977.

Wheat was the largest single American export to China in 1984 and would have been even larger if China had imported as much as it pledged under the four-year bilateral grain trade agreement that expired in December. As a percentage of total US exports to China, however, agricultural products are falling: they accounted for 20 percent last year, down from more than 50 percent in 1980, 1981, and 1982. Last year's exports showed strength across a wide range of industrial sectors.

Clothing and textiles dominated US imports from China again last year, accounting for 42 percent of total imports. Crude oil and refined petroleum products were also high on the list. Americans spent more than $105 million on Chinese-made toys and sporting goods, the bulk of it for stuffed doll bodies that became the wildly popular "Cabbage Patch" dolls. Most trade analysts, however, have failed to confront the implication: if not for Cabbage Patch dolls, the US would have enjoyed a trade surplus with China last year.

China's third biggest trading partner (after Japan and Hong Kong/Macao), the United States used to run routine surpluses in its China trade. In fact, last year's deficit was only the fourth since 1972. The Commerce Department seems quite satisfied with the US export performance last year. But American officials probably wish they could use Chinese figures. China, which chooses to omit shipments through Hong Kong and Japan from its export totals, says *it* had a trade deficit with the United States last year of $1.5 billion. —TE

## SEVENTH FIVE-YEAR PLAN

Chinese economic planners are continuing to work on drafting the nation's Seventh Five-Year Plan for 1986–1990. According to the State Planning Commission, officials will revise the draft at a national meeting this summer and release the plan in final form sometime next year. While estimates of the plan's contents at this point must be largely speculative, the leadership has made its overall priorities clear.

The Seventh Five-Year plan will call for annual growth rates in the gross value of industrial and agricultural output averaging 7 to 8 percent. When combined with the extraordinary economic successes of the last few years, achieving this target would be a major step toward reaching the long-term goal of quadrupling 1980's national income by the year 2000.

China's leaders have recently modified their strategy for attaining that ambitious goal. Until recently, planners forecast a gradual acceleration of economic growth through the end of the century. But Vice-Premier Yao Yilin stated in March that China's economy will grow more rapidly during the Seventh Five-Year Plan period than in the 1990s. Two factors may have led to this change of strategy. First, the economy has grown rapidly in the last few years, with the energy sector in particular performing better than expected. Second, China has built up significant agricultural and foreign exchange reserves. These factors will help sustain very rapid economic growth rates for the near future. But planners are concerned that energy, transport, and resource constraints will slow the economy's growth by the 1990s.

The upcoming five-year plan is not expected to depart from the basic economic policies China has been practicing since 1982. Instead, expect a cautious document that emphasizes improving the economy's basic infrastructure while continuing to introduce reforms.

In keeping with the desire to prevent an investment boom, the new plan will concentrate investment on upgrading existing industrial facilities, rather than building lots of new ones. But the priority sectors of energy, telecommunications, and transport are exempt from this general prohibition, since their lack of development threatens to scuttle China's modernization hopes.

This being the seventh plan of its kind, the Chinese have obviously developed some patterns in formulating their targets. But the planning process has been distinctive this time around in several respects. For one thing, while most of the actual proceedings remain behind the scenes, the planning process has been much more of a public affair. Economic reforms have decentralized economic decision making in China so that it is increasingly difficult for central planners to control all information flows. Conducting more of the planning process in public allows each important actor to gauge the likely impact of the plan on related sectors, and provide necessary feedback to the center.

The forthcoming five-year plan may also be the first to genuinely affect economic activity. China's five-year plans have become famous for their irrelevance, especially compared to the annual plans that actually set enterprise output targets. In fact, previous five-year plans weren't even promulgated until halfway

through the plan period! In preparing the seventh five-year plan, the Chinese for the first time seem to be seriously considering the interrelationships among economic sectors, and the effectiveness of alternative investment strategies. Don't look for revolutionary change in the planning tradition, but expect plans to gradually become more reflective of basic economic needs. —DD

## GREEN ZONE BLUES

In November 1983 the US government introduced a novel idea to speed the process of licensing for mushrooming US high-technology exports to the PRC. The "green zone" policy raised exporters' hopes, although the results have been disappointing so far. The original idea was to establish a level of technology at which certain items were considered to pose little or no national security risk to the United States if sold to China. Items falling within this "green zone" could expect to receive an export license with a minimum of delay.

The government established green zone guidelines for seven controlled product categories, which accounted for upwards of 75 percent of all PRC license applications at the time. These categories were computers, computerized instruments, microcircuits, electronic instruments, recording equipment, semiconductor production equipment, and oscilloscopes. New categories were to be added as the need arose.

The procedure was to work as follows: license applications for green zone items would be reviewed by the Commerce Department's Office of Export Administration with a presumption of approval. Such applications need not come under interagency review—a process that gives the Defense Department and other agencies the chance to review sensitive export license applications.

However, the Defense Department appears to be reviewing a growing number of green zone applications after all. A Memorandum of Understanding between the Department of Commerce and the Department of Defense late last year increased the latter's role in monitoring the whole export control process. This tends to slow the processing time for green zone cases.

Another problem is that the green zone product categories no longer make up the bulk of US export license applications, as China broadens its base of high-technology imports. So far this year the seven green zone commodity categories have accounted for less than 50 percent of all PRC license applications.

Commerce Department efforts to address this problem by drafting new green zone guidelines for other controlled commodities have bogged down. Guidelines for numerically controlled machine tools should be published soon, but green zones for nine additional categories that were expected by last June (mainly for telecommunications and avionics equipment) are still being negotiated by the government. Some, such as fiber optics and lasers, are the subject of heated debate between government branches over appropriate levels of technology for export to China.

Finally, US green zone cases are still subject to the multilateral review process, in which Japan and most NATO countries jointly monitor their high-technology exports to the rest of the world in an organization referred to as COCOM, or the Coordinating Committee. The changing situation at COCOM has caused additional headaches for green zone cases. The sheer backlog of China cases in COCOM, which now account for the bulk of applications sent in by most member nations, often means significant delays in COCOM approval. This cancels the benefit a US exporter has gained by expedited US government review. By May the government hopes to achieve a consensus among COCOM nations on methods to speed the processing of China cases. Another complicating factor is that new COCOM guidelines for computer exports, in effect since January 1, set restrictions on bulk computer shipments. This can complicate the export of even simple green zone computer equipment to China if shipped in large numbers.

The green zone policy appears to be caught in the current between shifting policy and bureaucratic red tape. Most exporters agree that the green zone idea is a good one in theory, and could be in practice if implemented systematically. But the deteriorating situation may have to get worse before the US government will devote scarce resources to giving the green zone process the shot in the arm it badly needs. —MCR


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# The Silk Road to Countertrade

## *3M–Shamash has a plan for repatriating profits earned in China*

**Andrew S. Heyden**

Profit repatriation has long been thought of as a near-insurmountable problem in China trade. Foreign companies investing in China are understandably eager to sell their products locally and establish a presence in the immense China market. China, just as understandably, prefers investors to produce export goods that help the nation accumulate foreign exchange. But even if the foreign investor gets permission from the Chinese to sell domestically, the question of profit repatriation remains the major disincentive. No investor is interested in piling up Renminbi (RMB) profits that cannot be converted on the international market.

The offset countertrade arrangement described here demonstrates that there *are* ways to untie the profit repatriation knot. The two unlikely partners who have joined forces to do so are S. Shamash & Sons, Inc., a family-owned firm based in New York that has imported silk from China for more than 100 years, and the Minnesota Mining and Manufacturing Company (3M). Although still too early to judge its success, their innovative arrangement indicates the expanding possibilities open to traders and investors in China.

### THE SILK TRADE AND THE US IMPORTER

China invented sericulture, and silk has been synonymous with the country's foreign trade since ancient times. It continues to be an important source of foreign exchange earnings for China today. After more than a decade of neglect, and even repression during the Cultural Revolution, the government started promoting new investment in the silk industry in 1976 as part of a drive to maximize exports of traditional products to fuel economic development. China's exports of silk products have grown steadily since then, and China now ranks as the world's largest supplier of silk raw material in the form of both fiber and fabric.

The United States has become an increasingly important customer since it granted most favored nation status to China in 1980, ending the more than 90 percent tariffs on luxury goods that had been in place since direct trade resumed in 1972. US direct imports of Chinese silk have grown at an average rate of 44 percent per year since 1979, reaching almost $60 million by the end of 1984 (*see* chart). This does not include Chinese silk griege (undyed, unfinished silk cloth) that is finished in other countries. Such silk enters the United States as finished fabrics or garments, listing the area where the processing took place as the country of origin. If all such categories are included, US imports of Chinese silk products are now well in excess of $100 million per year.

S. Shamash & Sons, Inc. is the dominant importer of Chinese silk fabrics in the United States. The firm imports both goods finished in China and Chinese silk griege, which it converts in Hong Kong and Europe through its own joint ventures, Jardine–Shamash Ltd. and Courtalds–Shamash Ltd. respectively. Jack Shamash, president of S. Shamash & Sons and the third generation in a line of China silk traders, says the value of his firm's imports of silk and other fabrics was over $30 million in 1984. Shamash is also a significant importer of Chinese linen and ramie (jute linen) for the high-fashion market.

*Andrew S. Heyden is the National Council's staff specialist in textile and countertrade issues. A program manager in the Business Advisory Services Department, he is also staff advisor to the Importer Committee.*

### 3M-CHINA LTD.

When the 3M Company began business negotiations in Shanghai four years ago, it did not plan to make history by establishing the first wholly owned subsidiary of a foreign firm outside of China's SEZs since the creation of the People's Republic. But that's what happened, and 3M-China Ltd. began operations in Shanghai in November 1984, one year after signing an agreement with the Shanghai Investment and Trust Corporation (SITCO). The firm will process electrical insulation tapes and resins for distribution exclusively inside China. 3M sees tremendous demand in the PRC for a wide variety of its other products too, and expects that 3M-China will expand its activities accordingly. The plant began distributing its output of tapes and resins in January of this year and will soon add connectors for plastic-coated cables to its product line.

While still negotiating with 3M in 1983, SITCO referred in press releases to "3M's three no's." These were described as "no Chinese equity participation, no technology transfer, and no exports." SITCO was willing to consider such stringent requirements because 3M-China would make products on Chinese soil that would otherwise have to be imported, and because 3M, following its standard international practice, would invest heavily in training local personnel in modern management and production skills. Despite these inducements, the issue of profit repatriation still could have killed the deal had it not been for 3M's willing-

Photo by Cary Wolinsky, Stock, Boston

ness to engage in the purchase of Chinese products for export with the RMB generated by 3M-China.

All of 3M-China's earnings are to be in RMB. Chinese foreign investment legislation states that such local currency earnings from foreign ventures may only be employed to purchase goods for export that are *not* now being exported. Nevertheless, local governments have the right to grant dispensations to ventures to buy a wider variety of products using local currency within their own jurisdictions.

There are reliable reports of Hong Kong and other foreign firms using RMB generated from their ventures in Guangdong Province to buy a wide variety of export commodities from within that province. But unlike 3M's arrangement in Shanghai, this activity is proceeding without official government sanction and at individually negotiated rates of exchange. Chinese government officials are probably well aware of this so-called "gray market" activity and—for the time being—are allowing it to proceed undisturbed. But 3M's arrangement in Shanghai is different in that it is the first in China to enjoy official approval by the municipal government. Shanghai is thereby committed to seeing that manufacturers and exporters within the city's jurisdiction cooperate with this arrangement.

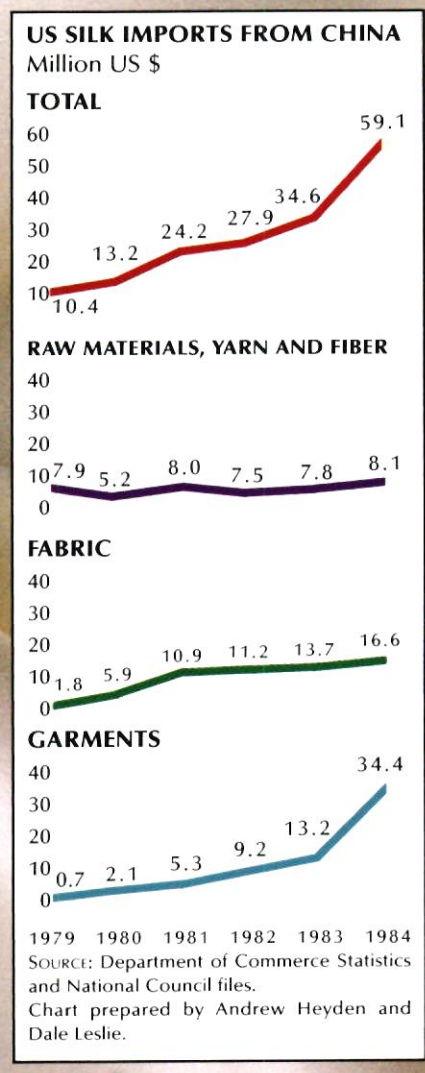
## 3M–SHAMASH LTD: THE SILK CONNECTION

Once 3M's unique agreement with Shanghai had been hammered out, there remained the problem of how to spend 3M-China's RMB earnings. With the help of S. Shamash & Sons, Inc., 3M hit on a solution to this problem that might be smooth as silk.

The two decided to establish a joint venture buying company, 3M–Shamash Ltd., registered in Hong Kong but with its pilot operational office in Shanghai. 3M–Shamash Ltd. will use the RMB profits generated by 3M-China's nationwide tape sales to buy various goods from factories in Shanghai. Some of these goods will be shipped to 3M's in-house international trading division, which deals in products used by 3M's own operating divisions, and also trades in many goods for customers outside the 3M group. 3M's trading division plans to utilize 3M–Shamash in Shanghai as an agent to assist in the purchase in China of glassware, steel nails, and other products.

3M–Shamash will also buy silk from Chinese producers on behalf of S. Shamash & Sons, Inc. The latter will continue its established import business through this new vehicle in Shanghai. Although 3M–Shamash's RMB purchasing is restricted to Shanghai, it can also act as a buying office for standard foreign exchange purchases of export goods from anywhere in China.

In many ways the strengths of the two partners are complementary and the "marriage" in the form of a trading company a natural one. Each of the two investors has large purchasing power, and together they represent a considerable breadth of products. Shamash has well established, direct buying relationships with 12 of the 27 Chinese provinces and autonomous regions that produce silk, as well as Shanghai itself. Charles Haigh, general manager of 3M–Shamash, recently opened the company's office in the Shanghai Mansions Hotel.




SOURCE: Department of Commerce Statistics and National Council files.
Chart prepared by Andrew Heyden and Dale Leslie.

Beyond purchasing export goods for 3M's global trading division and S. Shamash & Sons, Inc., 3M–Shamash intends to expand into agency representation for other foreign firms in the China market. This is seen as a logical outgrowth of the demands over the years from Chinese silk mills seeking help to obtain textile equipment and other items abroad. In recent years, these requests for assistance have spread beyond the textiles field into other areas such as food processing equipment. In the past, Shamash has attempted to render the assistance requested by Chinese organizations primarily through its preexisting business associations with Jardine–Matheson and Courtalds. But 3M–Shamash can now expand these diversified import–export activities in a more systematic and efficient manner. In its role as trade agent, 3M–Shamash will perform the same functions as a Chinese foreign trade corporation branch under the country's reformed foreign trade system, procuring goods directly from factories and coordinating their shipment abroad. The joint venture is scheduled to open its own liaison office in the United States sometime this year.

Jack Shamash has considerable experience with innovative trade arrangements. He was personally involved in large-scale offset operations that grew out of the need to dispose of local currency credits built up in Japan by international grain exporters after World War II. S. Shamash & Sons operated as an agent to help dispose of the credits, using them to procure silk and other consumer products for export.

Although the Chinese government has shown no inclination to try and organize offset countertrade on a national level, Shamash remains convinced that the concept is practical in China on the local level. The precedent set by 3M-Shamash in Shanghai is of course the primary evidence supporting this position so far. But recently other areas, including Sichuan Province, have expressed their readiness to facilitate offset arrangements for foreign investors who are unable or unwilling to consider exporting the products of their venture in China. 3M–Shamash Ltd. may well prove to be a groundbreaker for other firms interested in such triangular offset countertrade arrangements. 完

# Economic Reforms: Round Two

*The success of China's agricultural policies has helped broaden the focus of reform to include industry*

**Christopher M. Clarke**

Reform has been the watchword in China for more than six years now, affecting everything from investment patterns to daily lifestyle. Over the past year, Chinese leaders have broadened the successful agricultural reforms and open door policy in effect since 1978. And last October, the Third Plenary Session of the Communist Party Central Committee officially expanded the focus of reform from agriculture to the potentially more difficult task of changing longstanding patterns of industrial planning and performance. The "Decision on Reform of the Economic Structure" issued on October 20 shows that China's current leaders are more committed than ever to their stated goals of "enlivening the economy" and further "opening to the outside."

The specific goals of the latest reforms are to increase industrial productivity by raising incentives for managers and workers; institute price reforms to reinforce the incentive system and reduce the need for government subsidies; improve scientific and technological innovation and raise the level of expertise in the industrial work force; strengthen commercial interaction; and finally, attract foreign capital, technology, and management to fuel China's economic development.

Reform is not a new concept in China. Westernizers in the mid-1800s called for reform of the old dynastic system; intellectuals called for reform of the warlord-dominated "republic" of the 1920s; and liberals of the 1930s and 1940s demanded that the Guomindang government reform itself. The current regime undertook limited reforms in the mid-1950s and early 1960s, but both times these trends were eclipsed by radical movements.

Post-1978 reforms also remain a matter of controversy, with one man's reform being another man's abandonment of Marxism. But despite the highly sensitive and complex nature of the undertaking, several factors have compelled Deng Xiaoping and his chosen successors—Party General Secretary Hu Yaobang and Premier Zhao Ziyang—to speed up their ambitious agenda at this time.

### *Why now?*

Just past his 80th birthday, Deng's time is running out with his vision of post-Mao China yet to be fully realized. He has picked his immediate successors, but has not yet built the overall framework in which his legacies of economic development and further opening to the West are assured continued success.

Since defeating a conservative effort to slow the reforms in late 1983, Deng, Hu, and Zhao have pushed forward with progressively more fundamental reform of the Soviet-style economy they inherited. They hope in 1985 and 1986 to incorporate their priorities into a Seventh Five-Year Plan for 1986–1990. To set the stage, they are promoting changes in industrial management, commercial circulation, price reform, and foreign trade rationalization.

Economic pressures are at least as important as political imperatives in providing the impetus to push ahead with urban reforms at this juncture. The very success of China's agricultural reforms and aggressive foreign trade program has exacerbated the administrative and financial burden on the central government, and thus increased the pressure for reform.

Last fall, China gathered its fourth successive record grain harvest, with dramatic increases in other food and cash crops. Increased production has led to growing State purchases—and at prices higher than in the past. Rising storage and transport costs and greater food sales to urban consumers at heavily subsidized prices have also increased the drain on central coffers.

Between 1978 and 1982, official Chinese figures place overall government subsidies at more than ¥150 billion. The annual bill rose from ¥16 billion in 1978 to ¥43 billion in 1982, and continues to climb. Grain price supports account for almost half of these government subsidies. Grain subsidies more than tripled between 1978 and 1983, while output increased by only 27 percent and State revenues grew by only 11.4 percent. In 1984, unexpected State purchases from the bumper grain and cotton harvests added ¥3.5 billion to government expenditures.

Meanwhile, with peasant incomes rising steadily and dramatically, rural demand for consumer products, capital goods, farm inputs, and construction materials now exceeds the industrial sector's supply capacity. Even in cases where supplies are adequate, the commercial system is often incapable of handling distribution of these goods, and of circulating light industrial inputs and foodstuffs back to the industrial sector. Because of inadequate storage and transportation, as much as 20 percent of China's produce is wasted while only 5 to 10 percent is processed. Administrative barriers also interfere with the

*Christopher M. Clarke is a China Analyst at the Department of State and former associate director of research for the National Council. The views expressed here are his own, not those of any US government agency.*

smooth flow of goods between farm and city. As Deng put it just before the Third Party Plenum in October, "If urban reforms are not carried out, it will prevent the countryside from making further advances."

Economic inefficiencies in the foreign trade sector contribute to the need for systemic reform. Because of China's irrational price structure, many factories and trade companies cannot export at prices that cover production costs. Similarly, importers must often pay more for machinery and equipment than they can recoup from domestic end users. As a result, despite booming foreign trade figures and an impressive foreign exchange account, many Chinese enterprises are not benefiting much from the "open door." The recent decision to restructure the foreign trade system should help make exporters more efficient and responsive to economic forces. This structural change will be reinforced by greater use of the free market to set prices for most light industrial raw materials and finished goods, and by gradual changes in prices for basic commodities still controlled by the State.

### *Obstacles and prospects on the road to a mixed economy*

Despite the appearance of "¥10,000 peasant households," free markets, and the rapid expansion of private entrepreneurial activity ranging from bicycle repair to interprovincial transport, China is not really headed down the "capitalist road." The State will retain ownership and operation of key economic levers, including most heavy industry, banking, and major means of communications and transport.

What will result, if the reforms are successful, is a more mixed system in which mandatory planning will be largely replaced by guidance planning and the use of such economic levers as interest rates and taxes. Two widespread tactics being used to achieve a more mixed economy are removal of some government organs from business operations and the creation of competition by breaking up State monopolies.

As indicated by articles that follow, these and other measures have already led to tremendous changes in widely ranging areas of the economy. But the industrial reforms have not been in place long enough to assess their long-term impact. Furthermore, economic reform is a fluid process. As several authors indicate, not all of the changes taking place have been planned at the top. Some new economic measures have had consequences not fully anticipated by the leadership, which in turn have influenced the direction of the reform. Finally, the goal of reform in one sector, occasionally has the potential

to conflict with reform in another sector, and only time will tell how such situations will be resolved.

Chinese leaders recognize that the road to industrial reform will not be smooth. As Deng said on the eve of the October plenum, the implementation of urban reform will require "greater courage" than pushing through the 1978 agricultural reforms, because of the greater complexity of the industrial–commercial system and China's inexperience in using economic and financial levers to affect performance. Moreover, the nature of factory work makes it much more difficult to institute production incentives. An individual worker's contribution to a finished industrial product is much harder to calculate than the contribution of a peasant to farm output. The tendency so far to award collective bonuses diminishes the incentive effect of bonus programs, but the practice will be difficult to eliminate since it is cumbersome and controversial to award bonuses on an individual basis.

Economic reforms also directly threaten powerful entrenched interests. Ideologically orthodox Party elders have voiced concerns that China is abandoning socialism. This has prompted forcefully worded press articles by the reformers, explaining that Marx's 100-year-old ideas cannot be expected to solve all of contemporary China's problems. Some planning officials, many of whom cut their teeth on Soviet-style planning in the 1950s, fear that loosening central control will lead to economic chaos, higher unemployment, and inflation. Perhaps more important, the changes threaten the position, prestige, and living standards of government bureaucrats whose salaries remain low. In a statement rare in its candor, Hu Yaobang admitted that resistance to the reforms "will first come from some comrades of the central departments and the leading organs concerned of various provinces, regions, prefectures, and cities, especially the economic work departments."

Factory Communist Party representatives, whose influence is drastically curtailed by the reforms, are also likely to resist implementation. They may receive some support from workers grown accustomed to the lax labor discipline in the post-Cultural Revolution factory. Managers, whose authority has been undermined by years of Party interference and political movements, will probably take a wait-and-see attitude. Finally, some panic buying and runs on local bank branches at the time of the October plenum indicate that the man on the street is concerned about the possible short-term dislocations of the reforms, especially price increases.

Despite technical and political obstacles, the need for industrial and commercial reform has become clear to most people in China. Progress will probably be slow, as leaders seek to moderate short-term problems of unemployment, inflation, and erosion of living standards. However, since they sidetracked the abortive campaign against "spiritual pollution" of late 1983, reformers have generated considerable momentum for their program of social and economic transformation. Each new success helps bolster the stock of Hu Yaobang and Zhao Ziyang, and helps improve the prospects for a continuation of the reform momentum. 完

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# Capital Construction Reform

Martin Weil

Perhaps no single aspect of China's economy stands more in need of reform than capital construction. China's construction achievements over the last 35 years, while impressive, have been accompanied by staggering inefficiency and waste. Previous attempts to reform the industry created more problems than they solved. It remains to be seen whether new economic measures will fare better than the administrative measures tried in the past.

The construction industry's ailments are manifold and obvious. Cost overruns and construction delays are almost routine. Project officials frequently fail to coordinate energy, transport, raw material supply, and other auxiliary but necessary systems with the main projects themselves. There is a tendency to build too many, too small factories resulting in excess capacity at the national level and an absence of economies of scale at the plant level. Ministries and provinces both practice a go-it-alone philosophy resulting in a severe lack of specialization; every machine-building factory, for example, has its own forging shop. And a fetish for hardware often impels a factory to buy fancy equipment to solve what are really problems of organization

and management.

The Chinese leadership has recognized the problems in the capital construction industry for many years. The usual response has been to try to clamp down on expenditures and introduce order administratively. This remedy was applied with a vengeance during the 1981 "readjustment." But such adminstrative measures, while necessary at times, have been neither popular with a bureaucracy weaned on rapid construction and high growth, nor very effective in increasing returns on investment in recent years. The leadership is actively looking for alternatives, and has begun experimenting with various reforms over the last six months.

Construction reform measures now being discussed or implemented are of two types. Reform of the management of construction projects consists of measures to increase the conscientiousness of units actually carrying out capital construction (*see* box on page 14).

The second type of reform aims more directly at the root of the industry's problems, by giving project sponsors incentives to economize on expenditures and maximize return on investment. The most important of these measures are the move to tax certain kinds of construction projects, which began last year, and the reported decision this year to begin using government loans in place of the grants that have traditionally financed Chinese construction projects. Both represent a significant break with past practice, at least in principle. But their success depends on whether they will be strictly enforced and whether other reforms in the economy complement them.

### *Evolution of an inefficient system*

The Chinese construction system of the 1950s, like so much else in the economy, was set up with two basic goals: to facilitate rapid growth, and give the central government complete control over the directions of that growth. To the extent that efficiency was a goal at all, it was always a secondary one.

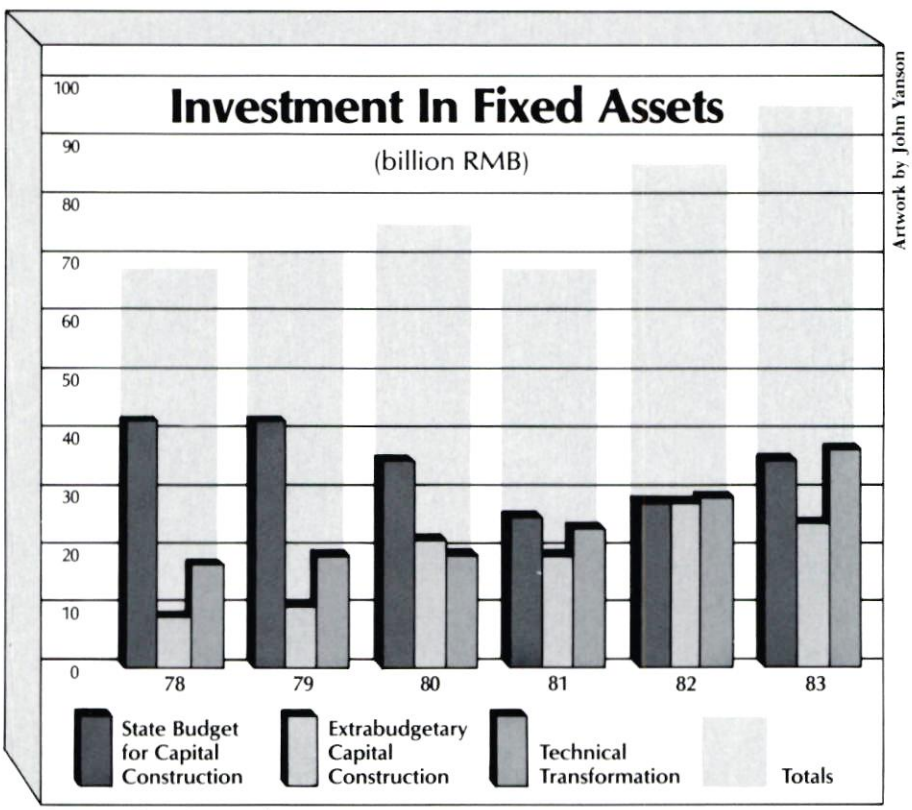
Virtually all capital investment had to be funneled through the State budget. The State Planning Commission (SPC) had ultimate control over this construction budget, determining in its annual and five-year plans which sectors, areas, and projects got what. The State Economic Commission later gained some power over capital investment through its control of the budget for technical renovation of existing enterprises. Renovation now accounts for over 35 percent of total capital investment, up from 7 percent in 1960.

Money flowed from the SPC to the industrial ministries, each given defined product responsibilities, and from them to capital construction units under their control. The State Bureau of Supplies handled allocation of materials. Funds were to be allocated according to plan and disbursed by the Ministry of Finance through the Construction Bank, which acted as a check to make sure the plan was followed.

To maintain some form of cost control, the SPC set standards in the 1950s for unit costs that, with some revision, persist to this day. Coal investment, for example, is not supposed to exceed ¥150 per ton of annual capacity; electric power, ¥880 per kw, and so on. But the thrust of the system has always been to increase capacity rather than to control costs. The government invested, and continues to invest, much more energy in tabulating statistics on installed capacity and work completed than on unit costs. The political atmosphere in the 1950s, with its emphasis on rapid development, strengthened the system's inherent biases.

Some of the practical defects of the system became apparent early on. Construction units began to hoard supplies to make sure they fulfilled their targets. Government ministries charged with administering construction acted like bureaucracies anywhere—competing with each other for funds, attempting to expand their jurisdiction, trying to pass the buck. This bureaucratic behavior made it very difficult to coordinate projects that crossed bureaucratic lines—i.e., most projects—and inevitably politicized construction decisions. Coordination was relatively smooth only for projects such as atomic weapons development that enjoyed sustained high-level attention.

The central planning apparatus has always had trouble controlling competitive pressures from various bureaucracies eager to proceed with their own projects. The first major breakdown occurred in 1958, when Mao Zedong tired of hearing planners tell him the limits to what he could realistically accomplish. Mao responded by calling for an economic "Great Leap Forward," and found government bureaus and provinces only too happy to heed his call. The result was a three-year spree of un-




Artwork by John Yanson

SOURCE: State Statistical Bureau

planned, uncontrolled, and extremely wasteful construction, particularly at local levels.

Chinese leaders reimposed central administrative controls in the early 1960s, the period of the country's first "readjustment." All but the highest priority projects (including nuclear weapons and other military projects, fertilizer plants, and oil field development) were stopped in their tracks by the rejuvenated central planning apparatus.

This period of relative order was short-lived. The Cultural Revolution introduced new disruptions that have in large measure persisted to this day. In the immediate post-1969 period, an emasculated planning apparatus stopped even pretending to issue balanced plans. Planners rationalized the acknowledged gaps in material supply for various projects by saying they would spur project managers to work harder. From this time on planners institutionalized an "overextended capital construction front"—the Chinese expression for a situation in which more projects are undertaken than can be adequately supplied by existing resources. The result has been a great increase in the frequency and severity of cost and time overruns, and de facto inflation of the cost of construction materials through mechanisms both legal and illegal. These problems come on top of all the other inefficiencies inherent in a system where construction money is both free and bureaucratically allocated.

Fulfilling national plans also became more difficult after the Cultural Revolution because local governments acquired partial or full control over many enterprises and went on a building spree, particularly of producer-goods factories. Because of this decentralization, the central government lost control over a large proportion of funds and materials. Local governments now control about 25 percent of China's timber output, 40 percent of steel output, and almost two-thirds of cement output. The implications for the central government's ability to control the direction of construction are obvious.

The fiscal reforms of 1979 and 1980 went even further in dispersing governmental authority over capital construction. Local governments began to retain a considerably higher percentage of revenue from enterprises under their jurisdiction. This gave localities even greater incentive to invest in their own factories, and helped cause a shift in local investment from low-profit heavy industries to high-profit light and consumer goods industries such as cigarettes, alcoholic beverages, bicycles, and televisions. At the same time, enterprises, local government industrial bureaus, and even ministries were also allowed to begin retaining a portion of their profits. Enterprises were even allowed to keep 50 percent of their depreciation funds, which previously had constituted their sole repayment to the State for its capital investment. As a result of these trends, a significant amount of this money began to be funneled into unsupervised construction outside the government budget altogether, with particular emphasis on housing and other social welfare facilities.

*The overall reform program could undermine construction reforms by intensifying the drive to build new production capacity. This is exemplified by the move to grant localities more authority over construction projects.*

### *Readjustment fails to achieve its goal*

The growth of extrabudgetary construction was only one of the many factors motivating the "readjustment" austerity policy of 1981, which drastically cut the government investment budget across the board. Economic planners were reacting against the 25-year-old tendency for construction projects to proliferate, and especially against the explosion in large poorly planned projects at the central level, such as the Baoshan Steel Mill. Proponents of readjustment cited the prospect of budget deficits and inflation as reasons for the new policy. But another important reason for readjustment was to challenge the common assumption that investment in new productive capacity should be China's number-one economic goal.

However, axe-cutting measures of the early 1980s did not prove as effective as they had been in the early 1960s. The drop in investment caused a politically unpopular industrial recession, and emasculated obviously needed projects in the energy and transport sectors. The lack of an obvious social crisis like the near-famine conditions in 1960 made the austerity measures much more difficult to justify. Moreover, the draconian budget cuts had little effect on extrabudgetary investment, which skyrocketed to ¥27.8 billion in 1982, marginally more than in-budget investment that year, and more than three times the extrabudgetary investment in 1978.

The problem posed by extrabudgetary investments grew even more pressing when the central government returned to higher levels of investment in major national projects in 1983. The government could not guarantee supplies for most of its projects, since so much money and resources remained outside its control. Many important new projects (such as coal mines or metals mines and telecommunications projects) had such low profit levels that local governments did not want to lend a helping hand. The central government was forced to put out a list of "key projects" and develop an elaborate, ad hoc bureaucratic working group (which included the State Bureau of Supplies, the State Bureau of Construction Materials, the People's Construction Bank, and the ministries of Commerce, Petroleum Industry, Metallurgical Industry, Railroads, and Foreign Trade) to ensure that the necessary materials would be supplied to these projects by reluctant local governments.

The key project system, however, is at best a stopgap move. Like other purely administrative measures, it is unlikely to provide a fundamental, long-term solution to the inefficiencies associated with Soviet-style central planning and the special problems created by decentralization Chinese-style.

### *Taxes and interest-bearing loans introduced*

The basic concept behind China's

current reform program is precisely that economic levers are better than administrative levers at shaping economic behavior. In the bolder spirit of recent months, Chinese reformers are going beyond remedies like the key project system and trying to apply economic measures to construction.

After issuing numerous futile appeals to local authorities to halt investment in projects outside the plan, the government decided in 1983 to assess a 10 percent tax on all capital investment involving money outside the State budget, with the exception of energy, transport, school, and hospital projects. This avoided the politically unpalatable step of revoking the earlier decentralization, but forced localities to think twice before embarking on new projects. The tax has not eliminated investment outside the plan, but has helped to moderate it. Such investment fell from ¥28 billion in 1982 to ¥24 billion in 1983.

A potentially more far-reaching step is the decision to begin financing construction projects with interest-bearing loans instead of grants. If this is conscientiously implemented, all enterprises, for the first time ever, will have economic incentives to increase their return on investment, cut costs, and shorten construction times rather than simply to add productive capacity at the government's expense.

The use of loans in the construction industry was actually first proposed in the late 1970s. Predictable resistance on the part of construction project sponsors, however, blunted the drive. Between 1979 and 1984, loans financed only 10 percent of new construction—undoubtedly in high-profit industries. Now, how-

## The Politics of Management Reforms

While trying first and foremost to combat the proliferation of unnecessary projects, China's reformers are also working to improve management of those projects that are undertaken. Their goal is to give construction companies a sense of responsibility they have never felt before.

Construction companies have traditionally been assigned their tasks by the government units that own them. The typical major construction project involves an unwieldy agglomeration of four or five companies owned by ministries, localities, or even the army working side by side on various aspects of the project. In the past, construction companies had no responsibility for obtaining funds or materials for projects, or for using them efficiently. Rather, inputs were allocated by the ministry or local government sponsoring the project through the State plan. Typically, the amount of materials has been supplied according to a mechanical formula based on the amount of investment allocated, not the particular needs of the project. Construction units have been fully paid long before they finish their jobs, leaving them little incentive to actually do so.

The most important management reform has been the introduction of a contractual relationship between project sponsors and construction companies. Rather than working with whatever funds and materials the sponsor provides, construction companies must now specify in a contract what their material needs and costs will be, commit themselves to a definite construction timetable, and guarantee quality. Payment is to depend on fulfilling the contract.

In principle, the construction companies will be responsible for obtaining construction materials themselves. For this to be successful, construction companies must be allowed to obtain materials of the desired specifications directly from wholesale companies (called supply bureaus in China), rather than depending on materials to trickle down from wholesalers through numerous bureaucratic layers to the project sponsors. It is not clear to what extent this is really happening. The government is now struggling to find a way to give construction companies more flexibility while keeping overall control over the direction of materials flow.

To give real meaning to the concept of construction contracts, the government is instituting a system of competitive bidding for most big projects. Great publicity has accompanied the success of this measure in the special economic zones. A notable example is the Guangdong Nuclear Power Plant in Shenzhen, where preparatory civil work is being undertaken by a metallurgical construction company from far-away Jilin, which submitted the lowest bid.

The problem looming in the background, of course, is how to resist political interference in the bidding process. In several documented cases, newly formed construction companies, some of them staffed by peasants, have underbid established government construction companies, which then pressured the government for help. Another form of political pressure comes from local governments that try to convince project sponsors not to hire companies from outside the area, regardless of the lowest bid. One solution would be to make construction companies independent entities, no longer belonging to ministries or local governments. But this appears to be too radical a move even for the present reform-minded climate.

It will probably be some time before political pressures vanish from the bidding process—if indeed they ever vanish. Taxpayers and law enforcement officials in the capitalist West can certainly understand the difficulty of removing political favoritism from the process of selecting government contractors.

Another management problem being tackled is the presence on a single project of four or five companies under different bureaucracies—each in charge of a separate aspect of construction and each exercising equal authority. The Chinese have recently announced that an individual project manager will take full responsibility for the project preparation stage. But it remains to be seen how responsive the various companies will be to his orders, and what will happen after project implementation begins. In the case of municipal housing construction, the strategy is to make one overall contractor responsible for the whole project. Experiments with this system have significantly lowered costs in Tianjin and Dalian, and will spread to the rest of the country, according to the Ministry of Urban and Rural Construction and Environmental Protection.

Finally, management reforms aim to bring the sense of responsibility down to the level of the individual construction worker. State-owned construction companies are now allocated their wage funds not only according to the number of workers on the payroll, but also according to the value of construction work the company completes. Companies are encouraged to make their own arrangements to reward industrious workers. But it is unclear whether managers are any more willing to distribute bonuses in a nonegalitarian manner in the construction industry than in other industries. —MW

ever, the Chinese say that loans will finance all projects starting this year. The money will come through the State budget and the Construction Bank as before, but enterprises will have to repay the principal with interest.

Interest rates will differ according to type of project, sector, and level of approval, ranging from about 3 percent to 8 percent, according to a variety of Chinese sources. Loans for coal and transport projects will have lower rates than those in the so-called "processing industries" such as steel, machine-building, chemicals, and light industry, reflecting both government priorities and the differing levels of profitability among the various industries. Environmental protection and technical renovation projects will enjoy favorable interest rates, as will those projects included in the central government's capital construction plan. Indeed, according to the Construction Bank, nothing in the central government plan will be assessed at an interest rate higher than 4 percent. The least favorable terms are for projects in processing industries outside the central plan, in keeping with the government's attempt to reduce extrabudgetary construction.

Sources say that as a general rule, repayment will start when a project generates revenues. The government reportedly hopes to collect loans in all but exceptional cases within 10 years of disbursement. In the case of enterprise renovation projects, interest rates go up as the repayment period lengthens.

The real questions, of course, are: 1) are the interest rates high enough to have a strong effect, and 2) how strictly will the loan terms be enforced. There are already some indications that China's bureaucracies are looking for loopholes. The Ministry of Coal, for example, is arguing that it should be exempt from loan repayments until price reforms make its enterprises more profitable, and the government is already hinting it will make such special allowances.

How will the government deal with enterprises that have difficulty making repayments? There are, in theory, penalties for late payment or diversion of loans to unauthorized uses. But it will be difficult, if not impossible, for banks to collect if enterprises can plausibly argue that objective factors, such as low prices or lack of energy, caused default. Indeed, using loans may only reinforce the reluctance to invest in low-profit industries—which are precisely those most in need of new investment. In many cases, these may have to be handled according to the old system.

There is certainly nothing approaching a free market for capital in the offing in China. Although lip service is paid to the concept that banks should only lend money to creditworthy projects, the selection of projects remains a prerogative of the State Planning Commission. The greater the government control over the flow of funds, the weaker the rationale for holding the enterprises responsible for repayment.

Loans are also less meaningful if enterprises will be allowed to go to higher authorities for bailouts when facing imminent default. This practice is not unknown even in Western countries, while China has institutionalized the government bailout over the past 35 years. The success of construction reform depends in no small part on whether the Chinese make good on their broad-based plan to separate enterprise administration from government functions and, by implication, political interference.

### *Construction reform and overall reform*

The purpose of substituting economic for administrative levers is to eliminate the pervasive "construction for construction's sake" mentality, which is correctly perceived as the source of much of the waste in the construction industry. But even if the introduction of taxes and loans improves the situation, it may not be enough to alter deeply entrenched problems unless reinforced by other aspects of the economic reform program.

The compatibility of construction industry reforms with China's overall reforms remains open to question. In fact, the overall reform program seems likely to undermine construction reforms in certain respects by intensifying the drive to build new production capacity. This is exemplified by the move to grant localities more authority over construction projects, particularly in the coastal cities. Places like Tianjin and Shanghai can now undertake $30 million investments without higher approval. Judging from the volume of discussions underway with foreign firms, it already appears that such cities view this as a license to build as much as possible, particularly in high-profit service industry projects catering to foreigners.

With raw materials and energy supply still largely under bureaucratic control at one level or another, the sponsors of construction projects are likely to continue to take their chances on favorable treatment, undeterred by the seeming unavailability of key inputs. Increased strain on materials and energy supply seems inevitable.

The priorities of the coastal cities or other localities are apt to conflict with those of the State Planning Commission. The cities seek projects with short lead-times and quick returns, while the State pushes projects with longer lead-times and slower returns such as mines, railroads, and roads.

The degree to which price reform reinforces construction industry reforms is another critical factor. The government is starting to raise the unreasonably low prices of coal and some other raw materials, but it remains to be seen whether the incentive will be sufficient to push investment in the desired direction.

Chinese leaders put the reform program on hold in 1981 largely because they perceived that reform was diverting construction resources away from the country's true priorities. More conservative officials declared that "readjustment" had to precede reform, that the economy's many imbalances had to be rectified before reform could be further implemented. The extreme austerity measures of that time have been politically discredited, but the tensions that led to the readjustment still exist and may be exacerbated by the recent revival of the reform momentum.

Giving localities greater powers to approve construction projects will almost certainly create new incentives for runaway local construction. If the new policy of substituting loans for grants does not adequately mitigate this tendency, the government will face the 1980 dilemma all over again. While a full swing to readjustment policies is unlikely, a slowdown in the momentum of the reform is a distinct possibility. The loss of control over capital construction is among the greatest potential dangers to smooth implementation of China's overall reform program. 完

# 事历

**INTERNATIONAL CONSTRUCTION TECHNOLOGY EQUIPMENT & BUILDING MATERIALS EXHIBITION** March 30–April 8, 1985. Beijing. Organized by Beijing CCPIT.

**CHINA CONSTRUCT '85/SECOND INTERNATIONAL EXHIBITION OF CONSTRUCTION EQUIPMENT, CONSTRUCTION MATERIAL MACHINERY & CONSTRUCTION MATERIAL** May 16–22, 1985. Nanjing. Includes site equipment, heavy equipment, pneumatic tools and compressors; machinery and equipment for the cement and ceramics industries; all types of construction materials; and miscellaneous products and services. *Contact:* Ms. Jessica Daniels at National Council member company SHK International Services Ltd., One Liberty Plaza, Fourth Floor, New York, NY 10080. Tel: (212) 766-6192/3.

**BUILDCON CHINA–FUJIAN '85/FUJIAN INTERNATIONAL BUILDING & CONSTRUCTION EXPOSITION & SYMPOSIUM** June 17–22, 1985. Fuzhou. Scope of exhibits to include site equipment; building/construction materials; mechanical and electrical fittings/equipment; finishes, fixtures, furnishing materials and equipment; hotel and catering equipment. *Contact:* Mr. Harry Lepinske, International Marketing Services Ltd., 1719 South Clinton Street, Chicago, IL 60016. Tel: (312) 421-7700; or AVP Expositions Company in Hong Kong.

**CIBAC/CHINA INTERNATIONAL BUILDING & CONSTRUCTION EXPOSITION** July 4–10, 1985. Guangzhou. Exhibits will include building materials, products and services; construction equipment, products and services; machines and implements; and services/support systems. *Contact:* Mr. Harry Lepinske, International Marketing Services Ltd., 1719 South Clinton Street, Chicago, IL 60016. Tel: (312) 421-7700; or Expo Management Ltd. in Hong Kong.

**ICERME SHENYANG '85/INTERNATIONAL CONSTRUCTION, EARTH MOVING & ROADWORKS MACHINERY EXHIBITION** August 20–27, 1985. Shenyang. Includes 14 equipment categories and technical seminars. *Contact:* China Sources Trade Fairs Co., Room 605, Nanyang Comm. Bank Bldg., 151 Des Voeux Road, Central, Hong Kong. Telex: 61847 CSINT HX.

**CHINA BUILD '85/INTERNATIONAL BUILDING & CONSTRUCTION EXPOSITION** September 2–7, 1985. Tianjin. Exhibits will include construction machinery (machinery and equipment for building and civil engineering sites; machinery plant and equipment for large construction sites and concrete mixing plants; excavators, pile drivers, earthwork equipment and plant; road-building machines, road rollers, track construction machines), building material and concrete block machines, and industrial construction units (prefabricated and system building and outside equipment). *Contact:* Mr. Harry Lepinske, International Marketing Services Ltd., 1719 South Clinton Street, Chicago, IL 60016. Tel: (312) 421-7700; or Trade Fair Management Corporation Ltd., Middlesex, England.

**CONSTRUCT-ELECTRIC '85/INTERNATIONAL EXHIBITION OF CONSTRUCTION & BUILDING DECORATION MATERIALS, EQUIPMENT AND GENERAL ELECTRIC APPLIANCES** November 22–27, 1985. Shantou SEZ. As noted, scope of proposed exhibits to include building decorating materials, building equipment and furniture, general electrical appliances, and other system facilities for household, hotel/catering, and/or office use. *Contact:* Hua Zhan Trade Promotion Company, Ltd., Room 1502, Jubilee Commercial Building, 44 Gloucester Road, Wanchai, Hong Kong. Telex: 65088 HZTPC HX.

**CONSTRUCTION CHINA '85** December 3–7, 1985. Tianjin. Exhibit profile to include building materials and systems, building materials machinery, construction machinery, and technology related to construction and building materials. *Contact:* AGS/CEMS Exhibitions Pte Ltd., 1 Maritime Square, #09-02, World Trade Centre, Singapore 0409. Telex: RS35319 CEMS.

**CHINA CONSTRUCT '86/THIRD INTERNATIONAL EXHIBITION OF CONSTRUCTION EQUIPMENT, CONSTRUCTION MATERIAL MACHINERY, AND CONSTRUCTION MATERIAL** May 16–22, 1986. Shanghai. Includes site equipment, heavy equipment, pneumatic tools and compressors; machinery and equipment for the cement and ceramics industries; all types of construction materials; and miscellaneous products and services. *Contact:* Ms. Jessica Daniels at National Council member company SHK International Services Ltd., One Liberty Plaza, Fourth Floor, New York, NY 10080. Tel: (212) 766-6192/3.

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*Calendar prepared by Susan Baugh. Companies sponsoring exhibitions or symposiums in China may send background materials to Susan Baugh at The National Council for US–China Trade, 1050 17th Street, N.W., Suite 350, Washington, DC 20036 for possible inclusion in* The China Business Review.

# REFORMING THE DOMESTIC BANKING SYSTEM

**Daniel Brotman**

As early as 1979, China's reform-minded leaders recognized the domestic banking system as a key actor in their attempt to modify the command planning system and reverse years of stagnant economic performance. They targeted the banking system to become an important intermediary linking State planners with economic units in a more decentralized economy in which economic levers would play a growing role in guiding State planning.

China's banks, however, were unprepared to play a major role in the economy beyond controlling inflation and passively providing funds to State enterprises. Certainly, they were too weak to carry out the greatly expanded responsibilities top leaders had in mind for them. Therefore, in 1979, Chinese leaders approved major changes in the domestic banking system, and subsequent banking reforms have followed at a dizzying pace. Reformers have replaced budgetary grants with bank loans, raised interest rates, instructed banks to extend credit only for profitable projects, and developed an incentive system to make bank officials more profit-oriented.

Is China "unleashing" its banks to follow the dictates of profit and loss, as many Western analysts suggest? Or is the banking system moving in a direction quite different from that of its counterparts in the West? What do the Chinese envision when they speak of a new "socialist banking system with Chinese characteristics"? Early answers to these questions are emerging, although more time and experience are needed to answer them fully. This much is certain, however: reforms currently underway are fundamentally transforming the role of banks in the Chinese economy and will directly affect the success or failure of the entire urban reform program.

## AN OUTLINE OF THE REFORMS

Although the Cultural Revolution further limited the powers of China's banks, they had operated on the periphery of the urban economy since 1949. Traditionally the Ministry of Finance (MOF) provided virtually all funds needed by enterprises for fixed capital investment in the form of grants. It did so largely through the People's Construction Bank of China (PCBC), which acted more like an MOF appropriations department than a true bank. Socialist theory also barred banks from providing the bulk of working capital credit. Instead, the MOF granted each enterprise a quota of working capital based on the unit's planned production. Banks could extend credit only to cover the unanticipated and temporary "above quota" needs of industrial enterprises for working capital. As a result, banks supplied only 15–30 percent of industrial enterprise working capital funds, already more than they were theoretically allowed to provide under their stringent guidelines.

The reforms that began in the late 1970s changed the organization of the banking system and expanded the banks' powers. China's premier banking institution, the People's Bank of China (PBC), had been demoted during the Cultural Revolution to the position of a subordinate body of the MOF. Its provincial and subprovincial branches were so weakened that they could not withstand pressure from local enterprises and officials to lend funds capriciously.

In March 1978, however, the PBC regained its ministerial rank and role as supervisor of enterprise financial activities. This set off a chain of events leading to a system of newly empowered specialized banks, each responsible for a certain sector of the economy, with the PBC as overseer (*see* chart). In 1979 the Agricultural Bank of China (ABC) was reestablished, having fallen victim to leftist excesses in the 1960s, and the China International Trust and Investment Corporation (CITIC) was set up. In 1981 the China Investment Bank (CIB) opened under World Bank guidance. In 1984 the People's Insurance Company of China was set up, and the Industrial and Commercial Bank of China (ICBC) was spun off from the PBC, taking with it all the parent bank's day-to-day commercial banking functions in the urban sector. This left the PBC in the role of a central bank responsible for making monetary policy and overseeing the work of the specialized banks, including some of the functions of the PCBC. The latter had formerly been under the sole control of the MOF, which retains substantial influence.

### *Active lending to enterprises*

The scope of bank credit in enterprise finance increased along with these organizational changes. In 1979 the PBC was authorized to issue its first fixed asset loans. Called "equipment" or "technical transformation" loans, these funds were to be used to upgrade existing facilities with new equipment and technology,

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rather than to build new plants. They were at first primarily directed toward the light industrial sector, although in later years they financed projects in other sectors as well. As a result, PBC allocations for equipment loans mushroomed from a total of ¥2 billion in 1980 to an estimated ¥10 billion (via the newly spun off ICBC) in 1984.

The Construction Bank also began making fixed asset or "capital construction" loans in 1979. It made these on an experimental basis especially to those enterprises that had begun substituting direct tax payments for profit remittances. These loans steadily expanded in the following years, until they reached approximately 10 percent of total State investment by the end of 1983. Chinese leaders announced late last year that interest-bearing loans would replace fiscal appropriations in most sectors as of January 1, 1985. Only government departments, schools, and other nonproductive units are supposedly still eligible for free budgetary funds.

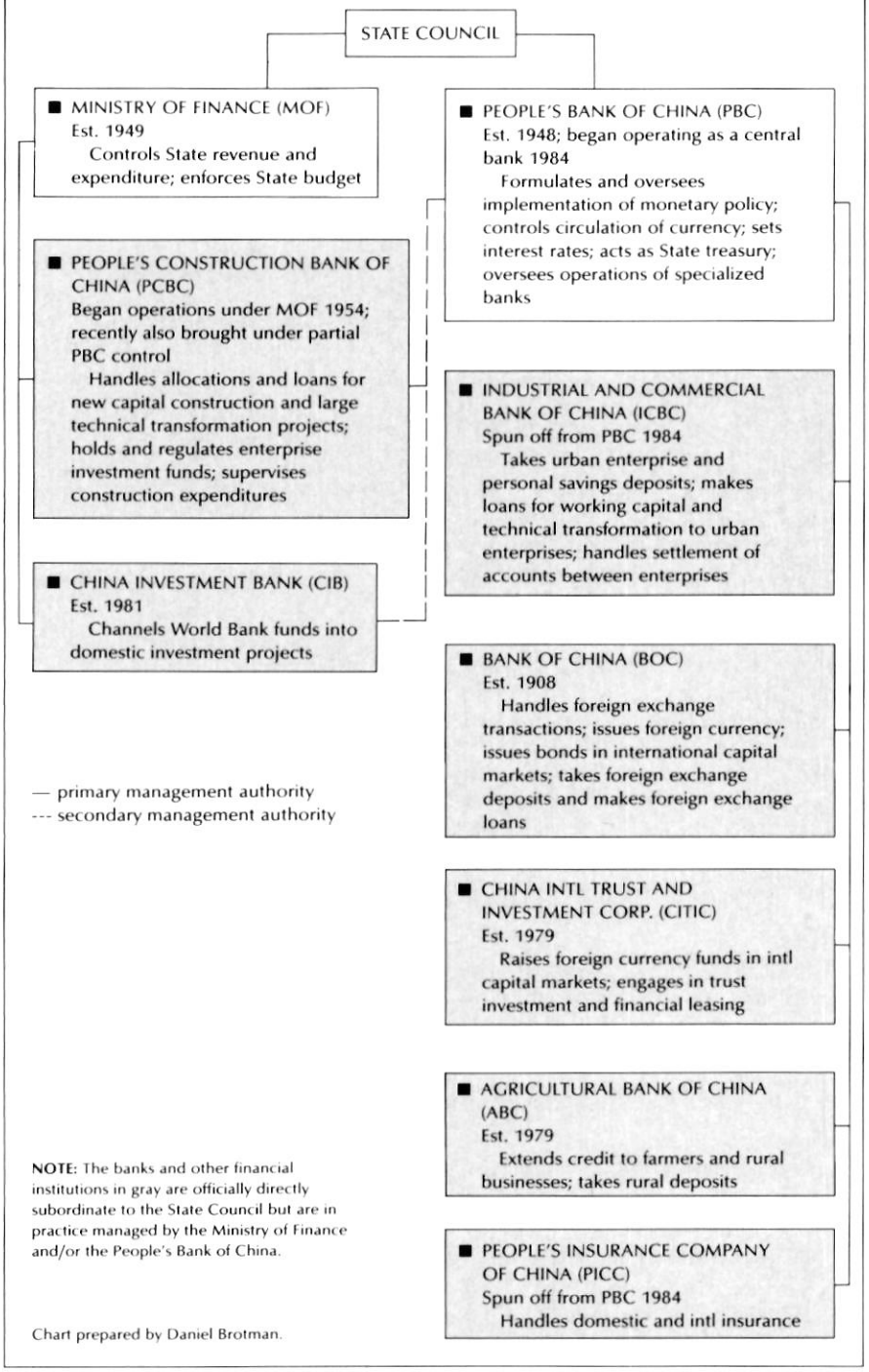
The banking system has also slowly gained control over enterprise working capital funds. According to the People's Bank, between 1979 and 1982, 82 percent of the increase in the circulating capital of industrial and commercial enterprises was provided by bank loans and only 18 percent was supplied by financial departments. The People's Bank announced in 1983 that banks were to become the sole distributor of working capital funds to State enterprises. Loans have thus replaced appropriations in this important area of enterprise finance as well.

Expansion of credit into areas once the exclusive domain of the budget is designed to effect two changes. It should discourage enterprises from requesting funds for projects with negative rates of return by placing the risk and cost burdens squarely on their shoulders. Credit control also should bring deficit enterprises into line. In the past, enterprises had every incentive to request additional funding whether they needed it or not. Now that loans have largely replaced grants, however, enterprise managers are likely to examine the economic feasibility of projects more carefully. As one Chinese press report recently put it, "Poorly managed manufacturers will have to face tough loan terms, so that they either shape up or go out of business."

### *Coping with competing demands for funds*

As further encouragement to conserve investment funds, the Chinese also began raising interest rates from the low levels prevailing since the 1950s. Interest rates on loans were increased across the board in 1982. More important, they were differentiated according to use and duration. Interest rates on loans for "quota" working capital, for example, are now well below those for "above quota" working capital. For fixed capital loans, the Chinese have adopted standard Western practice by charging lower rates for short-term than for long-term loans. For the first time, moreover, Chinese banks are regularly imposing penalty surcharges ranging from 20–50 per-

## CHINA'S DOMESTIC BANKING SYSTEM




**NOTE:** The banks and other financial institutions in gray are officially directly subordinate to the State Council but are in practice managed by the Ministry of Finance and/or the People's Bank of China.

Chart prepared by Daniel Brotman.

cent of the original interest rate on overdue loans, loans covering cost overruns in capital construction, and unauthorized expenditures. While such practices may seem a matter of course to Western bankers, they represent significant reforms for their Chinese counterparts.

Reformers also instructed banks to develop new methods of credit analysis under the slogan "differential treatment, supporting the best." Banks were authorized to examine the feasibility of a project and the creditworthiness of a borrower before releasing funds, and to refuse loans when necessary. Actually exercising the latter authority has not been easy. During the 30 years prior to 1979, banks were often under the thumb of local authorities and even their client enterprises. Hiring and firing of bank employees was under the dual control of higher-level authorities within the People's Bank and local political officials. With Beijing far away, banks tended to obey local authorities, usually releasing funds for political rather than economic reasons.

In order to lessen the influence of local officials over bank decision making, the authority to hire and fire personnel has been more or less centralized within the banking system since 1979. Nonetheless, repeated declarations in the Chinese press that "loans will be independently examined by the bank on the basis of the economic results of the projects, and will be granted to the best without interference from other departments" suggest that the problem has not disappeared. An economist at the PBC confirmed that while the situation is improving, loans are still all too often approved on the basis of political rather than economic criteria.

Partly to address this problem, central authorities impose a quota on how much branch banks may lend for local projects. But banks may exceed their quota if they succeed in attracting more deposits or speeding the turnover time of loans. Higher interest rates on deposits reinforce the policy by encouraging savings. Such policies give local bank officials more funds with which to support local production and branch profits. The policies recognize that local banks still face a wide range of external pressures to finance local projects, and that increased credit funds considerably reduce the burden of refusal.

## THE PCBC: STATE WATCHDOG OVER CAPITAL CONSTRUCTION

In some respects, these reforms are molding the Chinese banking system into something roughly akin to that found in many capitalist countries. But an in-depth look at two important banks shows that the system continues to play varied, sometimes conflicting roles. The People's Construction Bank of China and the Industrial and Commercial Bank share responsibility for underwriting the vast majority of China's urban enterprise finance. The division of labor between the two banks is clear, although blurring at the edges. The PCBC primarily finances new capital construction and large-scale technical renovation, but also makes short-term loans to industrial and commercial enterprises. The ICBC, on the other hand, operates what until 1984 was the PBC's urban branch network; it therefore provides the bulk of enterprise working capital and finances small- and medium-sized technical transformation projects. Recently it has become involved in both private business loans and consumer loans as well.

The Construction Bank occupies an organizational position straddling the two power bases of the MOF and PBC. On paper it is an independent financial institution directly subordinate to the State Council, China's supreme administrative body. In practice, however, it receives a significant chunk of its funding and many of its instructions from the MOF. At the same time, like the other specialized banks, it is also subject to a wide range of PBC regulations on interest rates and reserve requirements.

The PCBC network consists of 2,700 branches, employing some 46,000 people. On the liability side of its balance sheet, the bulk of its reserves (roughly 70 percent) consists of enterprise deposits—funds set aside by enterprises for fixed capital investment. Another 20 percent is made up of annual MOF allocations. The remaining 10 percent consists of deposits by government organizations. The PCBC does not take private deposits.

According to a PCBC official in Beijing, the bank disbursed just over ¥59 billion for investment in 1983, ¥35 billion of this in the form of loans. Of the loans, about half of the funds went for capital construction, a third for technical renovation projects, and the remainder for trust and other loans. The PCBC says it plans to disburse ¥60–70 billion this year, all as loans.

Interest rates on PCBC loans vary according to a complex set of criteria, the most important of which are the loan category and the proposed project's level of approval and industrial sector. Capital construction loans for key projects, for instance, carry lower rates than technical transformation loans, which are in turn cheaper than short-term working capital loans. Projects approved by the State Planning Commission face lower interest rates than those approved by any of the central government's industrial ministries. Those without central approval, however, are forced to accept higher rates, yet not as high as those available to capital construction projects outside the State plan. As for the industrial sector, interest rates on loans for approved capital construction projects in the energy, transport, communications, or building materials sectors are now as low as 2.4 percent, significantly lower than the 3.6 percent available for the light industrial and chemical processing sectors. Rates for projects in sectors such as electronics and metallurgy fall between, at around 3.0 percent.

Interest rates on PCBC loans are fixed at the highest levels; bank branches simply determine what category an applicant fits into. Branch bank managers, however, may add surcharges to these base rates to punish overdue payments or halt the diversion of funds to unauthorized uses.

### *A passive lender that follows State guidelines*

The PCBC is not yet considered a full-fledged member of the Chinese banking community because it remains primarily a conduit for dispensing budgetary funds, although these now take the form of loans rather than grants. The PCBC makes most of its loans passively on the basis of already approved plans; funds for these loans are still often supplied by the MOF through the regular budgetary process. Only under very unusual circumstances will the bank

refuse a loan for a budgeted project. The PCBC does occasionally grant loans to projects that lack explicit State approval. In these cases the bank probably has greater power to make key decisions, although there is little evidence that they are exercising this power.

The PCBC serves an important function as the State's potentially most effective overseer of enterprise capital investment. Even though it still cannot perform the traditional Western bank's role of determining an applicant's creditworthiness, reforms are strengthening the PCBC's role as watchdog for the State Planning Commission. This critical function sets the Construction Bank off from the rest of the banking system. The Construction Bank thus wields its greatest power not at the loan approval stage but at the project planning and construction stages.

At the planning stage, local branches of the PCBC oversee the project budget estimates that enterprises and construction units submit to their industrial departments. The bank, for example, recently reviewed a cost estimate prepared by Shanghai's No. 2 Polyester Fiber Plant for the installation of some new spinning equipment. Finding it a bit generous, a group of petrochemical experts within the bank made its own estimate—¥3.5 million lower than the plant's. Local branches of the Construction Bank are reminded ad nauseum that, in the words of PCBC representatives from Heilongjiang Province, "An effort must be made to strengthen the work of estimating and checking the cost of capital construction projects and the budget for the construction work. Payments must be firmly rejected for excessive estimates and expenditures in violation of financial and economic regulations."

Chinese reformers have placed even greater stress on the PCBC's oversight role during the construction phase. They have given the bank the job of ensuring that enterprises and construction units spend their money as stipulated in the State plan. One typical example of a PCBC rescue operation occurred in late 1983 at the Meishan Iron Mine near Shanghai. Without authorization, Meishan decided to divert over ¥2 million borrowed for other purposes to the construction of a machinery repair plant. The Shanghai municipal-level Construction Bank, however, soon discovered what was going on and reported the offense to the proper authorities, "causing a halt in construction and removal of all construction contingents."

According to PCBC president Wu Baoshan, this policing role extends beyond the actual construction phase. Early last year he announced that the PCBC will also "strictly review year-end financial accounts and financial accounts for completed projects. Expenditures found in violation of the State plan and financial discipline will not be approved for reimbursement."

*Local construction banks are increasingly subject to cross pressures from higher-level banking authorities and local enterprise officials who may be friends or neighbors.*

The PCBC is even extending its control over enterprises' self-financed investments. By law, enterprises must deposit funds they intend to use for future fixed-asset investments with the local branch of the Construction Bank. But unlike Western practice, the bank is required to release these funds only when it is satisfied they will be used properly. In this way, planning authorities wield indirect control over the scope and direction of firms' self-financed capital construction. This regulation should also cut down on the worst abuses of financial discipline.

These measures do not simply represent the substitution of bank control for ministry control. The Construction Bank has always theoretically had the authority to perform this policing role. The significance of recent reforms is that, possibly for the first time, the bank truly has the power to exercise this authority.

Still, the watchdog role is a hard one to play, especially on the local level. Local construction banks are increasingly subject to cross pressures from higher-level banking authorities on the one hand and local enterprise officials (who may be friends or neighbors) on the other. Whether a particular branch is willing or able to restrict the flow of funds to an enterprise violating the letter or spirit of State plans will depend on both the political clout of the enterprise and the incentives for local bank officials to obey bank guidelines. Nevertheless, the PCBC is already carrying out its watchdog role more effectively than at any time in the past. Its ability to do so will continue to improve unless the government seriously reevaluates banking reform policy—not a likely scenario for the immediate future.

## ICBC: CONFLICTS FOR THE GUARDIAN OF BALANCED GROWTH

Although officially established only on January 1, 1984, the Industrial and Commercial Bank is in a sense as old as the People's Bank itself. It was formed by splitting the PBC system into three parts: the rural branch network going to the Agricultural Bank, the central banking apparatus forming what is today the PBC, and the urban branch network becoming the Industrial and Commercial Bank of China. The ICBC boasts a nationwide system consisting of over 3,000 branches and other offices, employing 300,000 personnel. In 1984 the bank made loans of almost ¥300 billion, accounting for over 70 percent of the deposits absorbed and loans granted throughout the country.

As the major bank for enterprises and individuals in the urban sector, the ICBC takes all private and the majority of regular enterprise deposits. It provides the bulk of enterprise working capital loans and in recent years has become the most important source of financing for all but the largest technical renovation projects. Unlike the PCBC, which is a net recipient of budgetary grants, the ICBC maintains a surplus of deposits over loans, and thus is a net provider of funds to the central bank, according to one bank source. In 1984, for instance, the ICBC was required to turn 20 percent of its enterprise deposits and 40 percent of its savings deposits over to the People's Bank as reserves.

*Banks have been assigned the task of increasing micro-level efficiency while at the same time guaranteeing balanced sectoral growth. These are responsibilities fit for an adult, whereas the Chinese banking system is still in its infancy.*

This does not mean that the bank's branches are all self-sufficient. Branches with a surplus of deposits over loans are required to pass a fixed portion of their funds to higher levels. Some of this money is passed on to the PBC, but a portion is provided to deposit-poor branches of the ICBC to cover their need for extra credit funds. Thus the city of Beijing—which has a large number of deposit-generating government offices relative to loan-demanding industrial and commercial establishments—would turn over part of its surplus to the ICBC head office. The latter might then use this money to augment the deposits of the Shanghai branch. Shanghai, as an industrial and commercial center, generally has more enterprises demanding loans than it has depositors.

In 1984, about 90 percent of ICBC loans consisted of working capital loans to industrial and commercial enterprises (*see* page 22). These loans traditionally formed the core of the bank's activities. In recent years, however, such loans have expanded in volume as the banking system has gradually gained control over the management of all enterprise working capital funds.

Technical transformation loans with maturities of one to five years claim most of the rest of ICBC funds, and are the most rapidly growing category of loans. They are designed to raise output and efficiency by upgrading existing facilities rather than investing in new productive capacity. Since 1979 most have gone to small- and medium-sized enterprises in the textiles, energy, and communications industries.

The ICBC has recently inaugurated two new lending programs. One finances the establishment of small private or collectively owned service sector enterprises. These loans are generally small, and carry the relatively high interest rate of 8.64 percent. Since 1980, the Beijing branch of the ICBC has advanced 348 loans of this sort, averaging approximately ¥1,000 each, to privately run businesses—mostly restaurants, small shops, bicycle repairers, and tailors. Such loans represent a significant reversal of past policies designed to discourage the private sector, but they still account for less than 1 percent of the bank's total loans. However, China's banking authorities say they will rapidly expand such lending in the coming years.

The other loan program consists of so called "consumer loans." These loans are not made directly to consumers but rather to construction companies selling residential housing units or retail outlets selling consumer durables. The credit enables them to provide homes or costly goods to consumers who pay on an installment basis. Like private business credits, these represent a minuscule, but growing, portion of the ICBC's total activities.

The ICBC has more power over its credit decisions than the PCBC, and is thus more of a true financial intermediary. Each year, the headquarters of the ICBC in Beijing receives a "credit plan" from the PBC spelling out in detail its maximum annual loan quotas for each category of loans. The bank then divides these up among its branches, which in turn allocate quotas to their sub-branches, and so on. Each local branch, therefore, receives strict limits on the amount of money it is permitted to lend. Within each loan category, however, it is to a certain extent free to choose which enterprises receive funds and how much they receive. These decisions are ostensibly based on guidelines handed down from above.

The lending guidelines articulated by both the PBC and leading authorities in the ICBC reveal the conflicting roles China's reformers expect the banking system to play. On the one hand, the guidelines stress economic criteria. The banks are instructed to request detailed marketing plans that demonstrate their client enterprises' ability to market the goods they plan to produce. They are reminded that "enterprises without self-pooled funds or which are unable to pay construction taxes will not be granted loans," and that "projects without a guaranteed ability to repay will not be granted loans either."

On the other hand, the PBC has made it clear that China's banks are State organs that exist to support the State's plans to develop and reform the Chinese economy. As such, their credit policies should reflect not their parochial interests but the State's current economic priorities. This implies that once the ability to repay is established (and in many cases even if, owing to China's peculiar price structure, this cannot be established), credit should go to enterprises producing priority goods most needed by the State. Loans to enterprises producing goods already in excess supply should be restricted or denied outright. In recent years energy, communications, transport, and textiles have all benefited handsomely as priority sectors. Priority is reportedly being given this year to the so-called "550 first-stage technical transformation projects of the machinery and electronics industries," as well as to projects involving goods processing, home appliances, automobiles, and the building materials industries. In this respect the ICBC acts more as an instrument of sectoral balance, channeling funds into sectors favored by higher authorities, than as a pure instrument of profit-maximization.

### *Operating in an imperfect economy*

Why must the banking system continue to play these conflicting roles? One reason is that the government knows more thorough banking reform in the absence of price reform would cause severe sectoral distortions and worsen overall performance of the economy. Full-fledged reform would let banks channel avail-

able capital to the most profitable enterprises. But given China's distorted price structures, money would flow to certain sectors simply because their products enjoy high prices, while others such as energy and raw materials would suffer through no fault of their own.

In practice, the State's conflicting instructions and local social and political pressures make it virtually impossible for the ICBC to guarantee either that funds are provided only to efficient enterprises or that credit is effectively channeled into targeted sectors. A report last December by the head of Jilin's provincial-level Industrial and Commercial Bank on the branch's nonperforming loans supports this view. In one case, the bank lent over ¥9.5 million to a sewing machine factory to increase production only to find that its products were unmarketable. The factory was forced to shut down. In another, a steel tube plant in the city of Liaoyuan used over ¥1.3 million in technical transformation loans to build a zinc-plating workshop. It was only discovered afterward that the plant had no access to zinc supplies. Chinese officials say such problems arise because "loans were approved without proper analysis of the projects or proof of their economic feasibility," and because enterprise managers illegally divert loans designed for other purposes into capital construction projects for which they lacked sufficient State investments.

The ICBC still has a long way to go before it can perform either its profit-maximizing or economic lever roles with any degree of success. The Chinese have been learning the hard way that banks must develop effective project appraisal methods to avoid throwing good money after bad. They must also improve their surveillance capabilities in order to spot unauthorized diversions of loan funds before irreparable damage has been done. It is these issues, among others, that the reform program is attempting to address. And despite the difficulties, the current strength of the reform momentum bodes well for the banks' success.

## EXPERIMENTS ON THE PERIPHERY

The reform momentum has resulted in a number of other exciting experiments. These so far remain on the fringe of the banking and financial system, even though they have been widely discussed in the Western press.

One of the most tantalizing of these experiments has been China's decision to reintroduce stocks into the economy after an absence of 35 years. Since last summer, China's specialized banks have underwritten and/or assisted in at least five major stock issues, and more are slated for the future. As with equities elsewhere, stockholders are to receive variable dividends depending on the performance of the firm. But these issues have fixed maturities, making them more like medium-term debt. At present, these stocks are nonnegotiable. However, the Chinese have recently suggested that they might consider opening a small stock exchange to provide the secondary market necessary to initiate stock trading.

### *Reforms in the SEZs and open cities*

Other interesting experiments are taking place in the banking systems of China's special economic zones. In the past year alone, the Shenzhen People's Bank has been authorized to function as a central bank, issue its own currency, regulate the SEZ's money supply, and handle all international financial transactions. Higher authorities are not to touch deposits held by Shenzhen's specialized banks, which may also make their own credit decisions and freely borrow funds from both domestic and foreign banks to meet their lending needs. Varying interest rates may also be set, as long as this does not affect the general level of current interest rates.

In the other SEZs, reforms of a more measured nature are easing restrictions on specialized banking. Branches are gaining more control over their deposit funds and credit decisions, certain interest rates have been allowed to float within a 20 percent range, and restrictions on raising funds in domestic and international money markets are being lifted. On Hainan Island and in the 14 port cities open to foreign investment, branches are similarly being given provincial-level authority to approve credits. They have also been authorized to set up leasing companies and invest in real estate development. Special soft loans in both RMB and hard currency are, moreover, now available through the banks to finance foreign technology imports and infrastructural development.

### *Challenges to the Bank of China*

The Bank of China, China's premier international bank, is playing a major role in these reforms. Its branches are setting up trust and consultancy companies to facilitate investment consortiums with foreign financial institutions, and are preparing to enter domestic loan syndicates using both Chinese and foreign currencies. In 1984 the bank reportedly

## Industrial and Commercial Bank of China Total Lending 1984: ¥281b


Artwork by John Yanson

**Working Capital Loans: ¥253b (90%)**
**Technical Transformation Loans: ¥25b (9%)**
**Consumer and Private Business Loans: ¥3b (1%)**

SOURCE: Industrial and Commercial Bank of China

allocated $400 million for an import-financing scheme to enable enterprises in the 14 coastal cities and Hainan Island to purchase foreign equipment.

As its domestic role expands, however, the BOC's monopoly on foreign exchange is facing ever more serious challenges. The first attacks on the BOC's preserve came from the CIB and CITIC, which began to deal in foreign exchange in the early 1980s (*see* chart on page 18). The Construction and Agricultural banks also have announced their plans to begin taking foreign currency deposits and making foreign currency loans in selected SEZs and open cities. And the ICBC, not wanting to be outdone, has stated its intention to lend hard currency in the SEZs and to some of the interior provinces.

The work of the China Investment Bank has been less widely reported but is probably of greater long-run significance for China's specialized banks. Founded in 1981 to channel World Bank funds into small- and medium-sized investment projects, the CIB represents an attempt to introduce sophisticated project appraisal methods into the Chinese banking system. By the end of 1984, over 100 projects involving loans totaling $200 million in foreign currency have passed the bank's appraisal tests. These tests examine the projects' marketing potential, the quality of the borrower's management, and technical aspects of the equipment to be imported. The bank has even introduced such alien techniques as shadow pricing in an attempt to guarantee the long-run feasibility of these projects. The World Bank and Chinese government both hope that the CIB's methods rub off on other banks—especially the ICBC.

The significance of these peripheral experiments cannot be overstated. If successful, they are likely to strengthen the hand of those calling for bolder reforms throughout the banking and financial system. But the experiments remain new and small in scope, with limited impact on resource allocation in the urban sector for the time being.

### *A need to strengthen the emerging bank system*

Reform of the domestic banking system has to be examined at two distinct levels. The first, reform policy, is the more accessible. The second, policy implementation, is more important, but also more difficult to discern.

Case studies and interviews with Chinese and Western bankers confirm an important point: at the level of implementation, many of the reforms in the banking system contain enough loopholes to substantially weaken their effectiveness. According to a World Bank study, for example, enterprises commonly deduct both principal and interest payments on loans before calculating their profit tax. This means that a large portion of enterprise debt—up to 60 percent depending on the tax arrangement—is essentially provided as a grant. Enterprises still unable to repay loans out of the incremental profits of the project are permitted to divert other funds for this purpose. Depreciation charges, fixed-asset taxes, and industrial-commercial taxes, all funds that would in any case be paid out to higher authorities, are often dipped into to repay loans. While a poor investment decision still affects enterprise profits, it does so to a much smaller degree than would be the case in the absence of these loopholes. Moreover, the fact that loans are often guaranteed by the industrial department in charge of a borrowing enterprise, and the fact that the PCBC (and probably also the ICBC) has yet to foreclose on a loan, suggest that the ultimate sanction of bankruptcy in China is quite weak indeed.

China's banking system has been given a leading role in the new decentralized planning system now unfolding. It embodies the reformers' policy of "taking the planned economy as primary and the market economy as secondary." Occupying the strategic ground between Beijing's planning authorities and the country's millions of large and small economic units, the banking system has been assigned the task of increasing micro-level efficiency while at the same time guaranteeing balanced sectoral growth. These are responsibilities fit for an adult, whereas the Chinese banking system is still in its infancy. The challenge for China's reformers in the coming years will to be to rear the banking system to adulthood, strengthening it against its foes and giving it incentives to carry out its responsibilities effectively. 完

*Photo from National Council files*

***The Bank of China, whose Beijing headquarters is shown here, is the country's international bank.***

# Enterprise Reform: The Three *Li*'s

## *Shanghai's textile industry tries out new (limited) freedoms*

**Clark Friedman**

A goal of China's industrial management reforms over the past few years has been to endow enterprises with the "three *li*'s" or powers: *dongli* (motivation), *yali* (pressure), and *shili* (strength). Reformers want to provide enterprises with motivation to grow, expose them to the pressures of the marketplace to ensure efficient growth, and give them the strength in terms of money, manpower, and authority to sustain growth. The extent to which industrial firms gain these powers will be key to the modernization of China's industry.

The textile industry, an important revenue and foreign exchange earner for the country, has been at the forefront of experimentation with various enterprise reforms. Shanghai's textile industry, the nation's most important in terms of size, technical level, profits, and foreign exchange earnings, is no exception. A few selected textile mills in Shanghai, such as the city's largest cotton mill (Number 17) and the Banxin Wool Mill, began experimenting with management reforms as early as 1978. The city's textile plants instituted more thoroughgoing reforms in 1980, a year or so later than three of Shanghai's heavy industry plants but among the earliest enterprise reform experiments in the country.

The October 1984 Decision on Reform of the Economic Structure gave enterprises throughout the country expanded decision-making powers in such matters as production schedules, investment, marketing plans, hiring and firing, and setting prices. Experiments with such reform policies have already been tried at many of Shanghai's 450 textile mills over the past four years, although only a few mills are considered fully reformed. Because reforms at Shanghai's textile mills have been in place for some time, their achievements and limitations provide clues about how enterprise reforms will be implemented throughout China.

Shanghai's textile mills use 14 percent of the industry's capital stock and 11 percent of its labor force to produce 20 percent of the value added and almost 30 percent of the foreign exchange generated by China's textile mills. The overall technical level of Shanghai textile mills is more advanced than that of other places, especially in the high-profit dyeing and finishing sectors, because of Shanghai's large textile machine-building industry and above-average engineering force. Thus the progress of Shanghai's mills under new reforms will also have an impact on the continued prosperity of the nation's textile industry.

### *Profit retention and bonus systems instill motivation*

Before reforms were put in place, the city's mills turned over all profits to the State. They had no motivation to grow or alter their product structure other than to fulfill planning goals or earn honorary recognition of their efforts. Since 1980, however, when a profit retention system was first tested in Shanghai textile factories, managers and workers have had the chance to reap the monetary benefits of hard work and risk-taking.

Originally the profit retention system allowed each mill to retain approximately 6.5 percent of its profits. This step couldn't solve all the industry's problems, however, thanks to China's irrational pricing system. That system, for example, set the profit on polyester-cotton cloth at ¥67 per meter while the profit on pure cotton cloth was ¥17 per meter. The Shanghai Textile Bureau was forced to devise various ways to equalize the per-worker profit retention rates. Of course this, in turn, dampened the motivation of the more efficient mills and their workers.

Over the past 18 months Shanghai's textile mills have been slowly switching to a "straight" profit tax, under which each mill pays taxes based upon its value-added work, minus depreciation. This method should link retained funds and efficiency more closely. But the continued existence of a profit retention ceiling prevents the initiative of the mills from being fully tapped.

For the mill workers themselves, increased motivation has come in the form of more direct material incentives. A few wool and cotton mills in Shanghai began in 1980 to experiment with piecework and above-quota production bonuses for whole workshops or teams. These schemes were expanded greatly in 1981 and 1982 so that by 1983 almost every mill in Shanghai was implementing some productivity-tied bonus system. Until recently, managers granted bonuses on a relatively equal basis, thus limiting their incentive effect. Now that the government has given the mill directors the power to distribute bonuses as they see fit, better workers may be more fully rewarded.

China's fixed wage scale system, however, remains a barrier to paying each worker according to performance instead of seniority. In the

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past, all workers with the same amount of service time received almost exactly the same wage regardless of their work performance. It is becoming more common for workers to jump pay grades as a reward for hard work, but the practice is still quite rare.

### *The pressure of competition*

If sufficient motivation to improve the efficiency of Shanghai's textile mills now exists, so too does the pressure needed to force them to take risks that will lead to increased profits. Shanghai textile producers face competition from mills in other Chinese cities and even some imports that are cutting into their market share. A walk through any free market in China's coastal cities reveals an increasing percentage of textile goods from Jiangsu, Guangdong, and even Hong Kong.

With freer circulation of goods being officially encouraged, Shanghai producers realize that if they fail to produce new and better products for less, they face the prospect of decreased earnings. This is especially true in the export sector, where many non-Shanghai mills that instituted reforms even before Shanghai's have raised their product quality to export standards and can in some cases offer their goods at lower prices or on more attractive terms. In this sector, Shanghai faces its stiffest competition from Guangdong and Fujian, where industrial reforms have been especially far-reaching, and from Jiangsu and Zhejiang, which export finished clothes to ong Kong.

### *Greater managerial authority strengthens Shanghai plants*

Like most State-owned enterprises in China, Shanghai's textile plants have had very little power over even the most basic aspects of their operation since the 1950s. Mill directors lacked the power to hire and fire, the power to invest in profitable projects, the authority to produce a product or style in demand, or even the power to assign people to certain jobs for which they were qualified. The mills were at the mercy of the bureaucracies above them. They were also confined by the State plan, which limited their output structure, size of labor force, capital investment, etc. to a very small range of options.

Over the past few years, the factory director's authority has expanded significantly. Reinstatement of the single mill director system was one of the earliest reforms, begun in 1978–79. Instead of management by committees often controlled by nonprofessionals, mills began to be run by a mill director with vice-directors and a chief engineer under him.

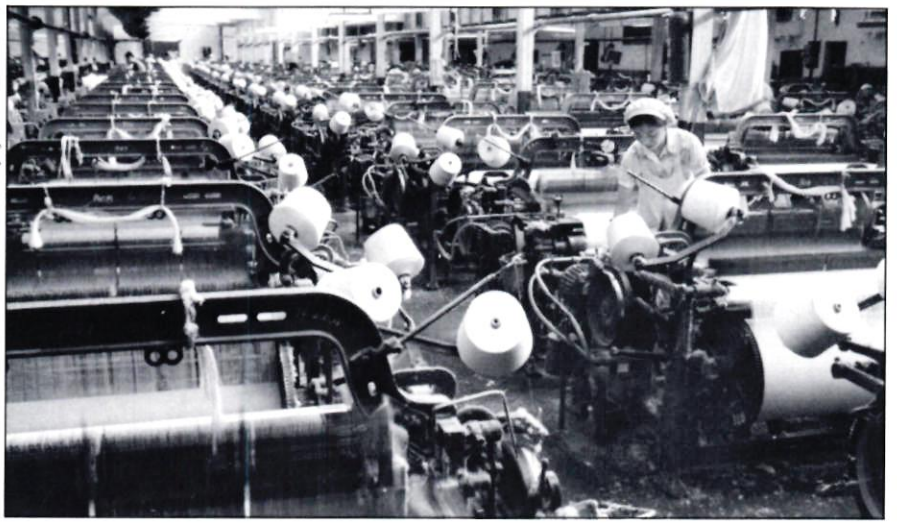
At first the mill directors had little power, even to pick their subordinates. But their power has gradually expanded, culminating in the recently approved "full responsibility" system. Under it, mill directors will be elected by the workers and approved by the corporation responsible for overseeing the mill. Directors should then have the independence to make those decisions that current regulations allow them to make. These include deciding what bonus payment scheme to use, hiring vice-directors and chief engineers, and making small investment and repair decisions. This raises another important question still be resolved: how will former bureau- or ministry-level officials occupy themselves now that mill directors are taking on many of their former responsibilities?

In order to meet assigned goals, the mill director can organize production any way he sees fit. If the market changes and the mill feels its assigned quotas are unobtainable or wasteful, it can request and usually receive a readjustment from the planning authorities in the corporation above the mill. Corporation planners can automatically approve the revision if there is enough leeway in the plan assigned to them; otherwise they must appeal to the Shanghai Textile Bureau's planning officials. In rare cases, an appeal must be made all the way to the Ministry of Textile Industry in Beijing.

After fulfilling all goals, a mill director is free to produce whatever he feels is in demand. The mills can sell this above-quota output either to the State or directly on the open market. On the open market, a mill can sell this output to fabric outlet stores, small collectively owned shops, or even directly to individual traders. The pricing of goods sold outside State channels is decided between the buyer and seller, so long as they stay within the limits set by State regulations (approximately 20 percent above or below the fixed price paid by the State-run commercial network).

A mill's ability to directly market part of its output is one of the most important powers it has received over the past few years. Some mills in Shanghai are now even responsible for the marketing and sales of all of their output. One of the first mills to receive such independence was the Feilun Thread Mill, Shanghai's second largest thread mill, which began directly marketing all of its output in 1983. While such total independence from State marketing channels is the exception, all indications are that if the supply of textiles and apparel continues its steady growth, the role of the State in the distribution and sales of these goods will be reduced. The number of private traders will increase, and factories will increase the amount of goods they sell directly to stores, cooperatives, and individuals in order to increase their own revenues and get more direct market

*Photo courtesy of New China Pictures*



*The jet weaving room of the Shanghai No. 2 Weaving Mill.*

information.

It remains to be seen how mills will respond to increased pressure on their own marketing and sales capabilities, as the State's role diminishes. But as these trends continue, the pressure on mills to be more competitive and efficient will be even greater, as will the potential rewards for successful performance.

### *More control over investment*

Funds available to the mills in Shanghai have increased greatly since the introduction of the profit retention scheme and the renewed national emphasis on development of textiles and other light industries. But if the mills are to become more productive, they must learn to make proper and timely investments with these funds.

Under the previous system, after turning over all their profits to the State, mills depended on the central government to allot them investment funds. But the central government was not generous to Shanghai's textile industry. Instead, the State used Shanghai's profits to help develop the textile industry in important cotton-growing areas in the interior such as Xi'an, Shijiazhuang, and Taiyuan, and the wool and hemp industries in the west and north. The government gave priority to these industries in the interior because they were underdeveloped due to the emphasis on coastal development during the first half of this century. Shanghai's mills also had to turn over more than 80 percent of their depreciation fund, which was figured at less than 5 percent of the gross capital stock.

These policies, now being reversed, left only a small amount of investment money in the form of a repair fund. Most mills could only afford to expand production through relatively cheap improvements. Therefore, much of the increased production at Shanghai's mills has come from small but significant changes in production technology such as increased spindle speeds, systematic replacement of old-style looms with Chinese-designed fly-shuttle looms, improved dyeing and finishing equipment, and the development of high-priced (though not because of market demand) synthetic fiber production.

Over the past year, mill directors have had greater say in how to use the growing pool of funds at their disposal. Since the profit retention scheme was instituted in 1980, 30 percent of retained earnings has been put aside for bonuses, 40 percent for worker welfare (especially new housing), and 30 percent for investment in renovation and improvement of machinery. These restrictions are expected to be further relaxed this year. Mills will not be required to follow the 30–40–30 split, and will be able to distribute their post-tax earnings more or less as they see fit. But there are still many regulations that effectively limit a mill's leeway, such as the restriction that total bonus payments cannot exceed one-quarter of the total wage bill. Regulations also prevent Shanghai textile mills from investing in projects that compete with key State and local construction projects.

Nonetheless, the increased availability of funds will allow the mills to develop faster and probably more rationally. The mills will now decide what machinery they need, based on their assessment of future State plans and market demand. Sometimes these investments will be made within the State plan and the equipment will be produced or imported using State-controlled funds (in the form of loans from the People's Construction Bank or the Bank of China). More and more, however, the investment funds will come from the mills themselves, and the equipment they purchase will have to come from above-quota production or be imported using retained foreign exchange earnings.

Most mills are eager to invest their funds in better equipment. But this has raised the already great pressure on sources of investment capital. How do banks decide which mills should receive loans when there are few reliable indicators of efficiency? How should scarce foreign exchange be allocated?

### *Restrictions on the use of labor*

Unlike investment capital, there is no shortage of labor, although there are just as many, if not more, regulations on its use. Prior to the reforms, the mills had to hire any worker assigned to them by the municipal labor bureau. Now they may be selective as to whom they hire, although they do not have control over their total staff levels.

The mill director supposedly has the power to fire a worker, though this can happen only under the most serious circumstances—not just to cut costs. While Shanghai's mills have much greater input into the creation of the labor supply plan, they still cannot necessarily change the structure of their labor force in order to make it more efficient, or pay workers wages other than those fixed by the government wage scale.

Slowly but surely, the power to move workers up or down the wage scale based upon their performance is increasing. However, labor and personnel matters clearly represent one of the least reformed areas of the urban economy (*see* page 40).

### *The question of pricing*

Progress has also been slow in reforming the textile industry's price structure. Prices are generally fixed across product types with only small variation for quality differences. Most prices reflect neither scarcity nor underlying costs, so management decisions based on these prices are not necessarily the best in terms of the true supply and demand for each product.

Without a price system based on product supply and demand, will the increased output really be what Chinese consumers want? As the mills respond to motivation and pressure, they will have to make more decisions based on their understanding of the market. But without the information provided by price signals, inappropriate production, bottlenecks, shortages, and waste will continue.

Until the true prices for textiles and all other goods are determined, the managers of Shanghai's textile mills will not be able to make decisions that lead to the fastest growth and greatest productivity—no matter how much independence they have. They may have the motivation, the pressure, and even most of the strength to act, but an important factor that makes the whole system work will still be lacking.

It is now apparent that the larger question of the strength of the enterprise reforms turns on whether the *government* can push through the most difficult and important reform: pricing. If reform of the pricing system does not continue, economic distortions may cause factories and mills to react irrationally to the motivations and pressures created by other reforms. 完

# Wuhan: Inland City on the Move

*Wuhan has the jump on many of China's coastal cities in experimenting with urban reforms.*

**Dorothy J. Solinger**

The tri-city of Wuhan, capital of Hubei Province, has been a pioneer of experimental municipal reforms for several years. After formally receiving new economic powers last May, the energetic city is anxious to pick up the pace of its experiments.

While China's coastal cities try to capitalize on their natural advantages, Wuhan is striving to become a model inland regional economic center. Among the handful of major inland cities recently granted economic powers equal to those of a province, Wuhan's freedoms are relatively broad. Only Chongqing, in Sichuan Province, has gained a magnitude of economic authority similar to Wuhan's. Chongqing received greater autonomy in 1983, more than a year prior to Wuhan, but Wuhan seems bent on catching up. According to Wuhan Mayor Wu Guanzheng, the rather immodest objective of the reforms is to "turn Wuhan into China's biggest domestic and foreign trade center, as well as one of the world's major inland ports."

### *A chance to prove the old system wrong*

Why was Wuhan, of all China's cities, among the few chosen for pilot urban reforms? Why did Premier Zhao Ziyang state last year that he "placed his hopes" on Wuhan?

A number of factors make Wuhan a logical choice for reform experiments. As Hubei's capital, Wuhan appears to be spearheading a national movement to broaden the role of provincial capitals. Therefore, changes in the scope of Wuhan's authority involve major readjustments of power in provincial departments and bureaus. Such readjustments are not a factor in cities like Chongqing, which are not provincial capitals.

Wuhan's strategic location is another factor. Wuhan is a "central city" in a large economic zone—the central China zone. Wuhan is also the largest interior port in the country linked to the ocean, giving it a good chance to demonstrate how inland cities can forge stronger economic links with each other and the outside world. Historically dubbed "the thoroughfare of nine provinces," Wuhan could not be better situated for this task. It is a communications hub located on the Yangtze River, at the point where it is crossed by China's major north–south rail line, running from Beijing to Guangzhou.

But most significant, Wuhan's history makes it well suited to realize the principles behind China's economic reforms. One of the nation's largest cities, home to six million people (including those in the four suburban counties the city annexed in 1983), Wuhan's traditional role as a national center of trade and transportation was drastically reduced by the imposition of a vertical command economy after 1949. During the early 20th century, the tri-city's commercial center of Hankou (the other two subcities are Wuchang and Hanyang) had a total trade volume ranked sometimes third, sometimes second, in the nation. In the 1930s more than 2,000 wholesale dealers set up business here. But the Stalinist command economy set new priorities that neglected Wuhan's natural orientation to commerce. Instead, central government investment created a heavy industrial base, while power came to be centered at provincial and central government levels, robbing local leaders of the authority to direct urban construction.

The new reforms aim to correct this situation, and allow Wuhan once again to capitalize on its strategic position. If successful, Wuhan could come to symbolize the importance to economic planning of decentralized market determinants rather than strict administrative orders—in line with current thinking among the top leadership in China.

Political factors may have also been important in the timing of Wuhan's reforms. Last April, the State Commission for Restructuring the Economic System, under the State Council, convened a symposium on experimental municipal reforms. Participants felt that municipal reforms were progressing too slowly, according to the Chinese press, and many new measures were proposed. On May 21, the same day that the State Council and Party Central Committee officially announced Wuhan's new economic powers, the minutes from the April symposium were also made public. The following week Vice-Premier Wan Li drove home the importance of municipal reform at a State Council forum, where he called on the central government to support municipal reforms and urged the mayors and municipal Party Secretaries in attendance to promote such reform in their own towns.

During the summer of 1984, Wuhan moved quickly with its new powers. The city put into effect many of the measures proposed at the April meeting, particularly improvements in the circulation of commodities.

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During this period Zhou Taihe, Vice-Minister of the State Commission for Reforming the Economic System, noted approvingly that the changes in Wuhan had "aroused attention throughout the country."

Wuhan was probably targeted as a showcase for reform at the April meeting, and then encouraged by the reformers under Zhao Ziyang and Hu Yaobang to produce fast results. Possibly the reformers hoped to draw on the positive results of these efforts to convince doubters and serve as a foundation for deepening the overall national reform effort in October.

### *The reforms to date—focus on circulation*

Now, with the city given back a large measure of the autonomy it once enjoyed, Mayor Wu and municipal government cadres have taken off on a dizzying spree of surveys, suggestions, investigations, proposals, and experiments. One plan proposes taking the "two C's" as the starting point for reform—referring to *liutong*, or "circulation," and *jiaotong*, or "communications." This phrase, coined by Wuhan University economic management Professor Li Chonghuai, earned him a letter of commendation from the city government. A set of measures for achieving Dr. Li's "two C's" characterizes many of the Wuhan reforms to date. In addition to these ideas Wuhan has also taken the lead in actually implementing many reform ideas promoted nationally last year.

Perhaps the most rapid visible progress has been made in improving the first 'C'—circulation of goods between Wuhan, its hinterland, and other cities in central China and beyond. By late last year, Wuhan had set up 78 trade centers, 57 of which specialize in specific types of products. Trade centers are part of a national policy, but have been pushed harder in Wuhan than in most places. They collect information on supply and demand, quality and price, and allow private and collective enterprises, as well as State-owned firms, to trade in certain commodities from all over the country. Wuhan has also established various wholesale markets, trading warehouses, and trade fairs, to begin forming a wholesale network. At least 177 trading warehouses are in use, as well as 17 wholesale markets for agricultural and sideline products, and 10 markets for small industrial products. All of this represents a tremendous easing of the planned procurement system used in the past, which was both hierarchically channeled and geographically limited.

These trends have helped Wuhan earn a reputation as a city open to competition for produce and industrial products from elsewhere in China. The example of the Wuhan Second Bicycle Factory attracted national attention. Its "Yellow Crane" bike was elevated from class "B" to class "A" status after soliciting superior-quality parts from around the country. The factory chose its parts suppliers from bids offered by a total of 277 firms from 26 different provinces and cities. In doing so, the factory worked with a new office under the City Economic Commission, set up to invite tenders.

Mayor Wu has been instrumental in promoting Wuhan's new mood of openness. When he learned last June that certain local officials wanted to bar Guangzhou representatives from coming to Wuhan with an exhibit of light industrial and textile products, he immediately convinced these bureaucrats to stop protecting backward local goods. City leaders stressed that such exhibits from other cities encourage progress at home.

Mayor Wu also emphasizes that Wuhan welcomes all those interested in doing business there. Peasants from the countryside and residents of other cities have been permitted to open shops and manage factories in the city. Early results indicate that more than 10,000 production units and sales firms from all over the country reportedly entered the Wuhan market during the spring and summer of 1984. The sales volume achieved by the trade centers in July and August alone reached some ¥190 million, a rise of 83 percent over the same period in 1983. An article in *People's Daily* last November took these Wuhan data as an illustration of the extent to which the whole domestic market opened up last year.

Hankou's Jianghan Street—the busiest commercial street in town—provides a graphic example of Wuhan's rising level of commercial activity. The number of shops there increased from 50 to 114 recently, and some 53,000 types of commodities are now offered to 100,000 customers a day.

This past fall, Wuhan also reorganized its commercial bureaucracy. The city's First and Second Bureaus of Commerce merged with the Bureau of Food Grains to form the country's first integrated Commercial Management Committee. This new organ is supposed to act as a semi-independent corporation, handling all the retail and wholesale business for the city. By centralizing management efforts in a more streamlined agency, the Commercial Management Committee should reduce the duplication of effort that characterized the previous system. Presumably it will oversee the burgeoning private sector, and the various joint operations being worked out between State and private firms. According to one recent count, Wuhan now has some 70,000 "individual" or private sector firms, representing one-fourth of the personnel in the city's commerce and catering trades.

Wuhan has also been a national leader in the relaxation of price controls and rationing to ease commodity circulation. Beginning in December 1982, Wuhan's Price Bureau allowed small commodities' prices to be set by supply and demand rather than following State-set rates. In May 1983, the bureau instituted floating prices for 143 light industrial products (such prices may float within a specified range). This past May the bureau permitted local industrial departments to set the floating range for 19 more products. The city won the praise of Vice-Premier Li Peng last November for relaxing controls on the management of pork, bean products, vegetables, and fish, and in particular for abolishing the rationing of pork and bean products.

### *Better transportation facilities and more cooperative efforts*

To give these reforms staying power, it will be important for Wuhan to improve the second "C"—communications—in step with circulation. Several important steps have been taken in the field of transport, with the aim of improving Wuhan's links to the outside, particularly to the ocean. This will help Wuhan compete with coastal cities, and modernize its worn-out infrastructure in the process. The Port of Wuhan was opened to foreign trade in April 1980. But not until three years later did the city regain the right to man-

age customs on goods passing through the port—for the first time in over 30 years. During the preceding three decades, exporting from Wuhan involved paying customs and fees at the Port of Shanghai, which significantly complicated procedures. Now, according to local sources, Wuhan can get out from under Shanghai's "pressure"—or, put differently, "lighten Shanghai's burden" in foreign trade.

Wuhan created a Port Management Bureau last fall by merging the administrative functions of the Harbor Administrative Bureau with the Wharf Office. It also formed the Yangtze River Joint Transport Corporation in conjunction with 13 other cities, including Chongqing, Nanjing, and Hangzhou (but not Shanghai), to serve 11 provinces. Plans to build up a waterway network, centered on Wuhan and encompassing the Yangtze and its tributaries, should invigorate the economies of surrounding county seats and small market towns, lead to the growth of many new-style small cities, and enhance Wuhan's role as a water and land transport hub.

The Wuhan Air Transport Service Company, China's first military–civilian joint air transport company, is another local innovation. Formed last September by the city government and the Wuhan Air Force unit, this company uses planes, an airfield, and other facilities provided by the air force. The company's most important function for now is in expanding the city's capacity to transport goods, but eventually it hopes to provide both domestic and international passenger services.

### *Reviving the finance sector*

Wuhan would like once again to become the financial center it was in the late 19th and early 20th centuries. To this end the city is experimenting with many financial reforms being promoted on a national level.

The same Professor Li who coined the "two C's" approach to reform is also a banking specialist, and has introduced a set of ideas about credit reform. Although many of the ideas are not particular to Wuhan, Li explained in a recent interview that the Wuhan branch of the People's Bank of China will be the first in the nation to function as the district office of a national central bank, in the manner of a Federal Reserve district bank.

In December the Wuhan branches of five major Chinese banks—the Industrial and Commercial Bank, the Agricultural Bank, the Construction Bank, the Bank of China, and the People's Bank of China, together with the local branch of the People's Insurance Company of China, banded together to create the Wuhan Banking Joint Committee—another national first. Under the leadership of the local branch of the People's Bank, the banks will exchange information and coordinate the city's credit and circulating funds, capital construction funds, and foreign exchange to promote local economic development.

Another growing financial institution is the Wuhan Financial Trust Company, in business since 1981, whose mission is to raise funds for local economic construction. The company increased the amount of its shares last summer from ¥8 million to ¥20 million. Now private firms, universities and research institutes, and State-owned companies and factories may buy shares in the company.

There is also talk of instituting floating interest rates, sellers' and buyers' credit, housing loans, and postal savings and checking accounts to help absorb temporarily idle funds. The city may also let people who have moved to Wuhan to set up businesses but who are not official residents open savings accounts.

### *Enterprise reforms and foreign factory managers*

"Enlivening enterprises" is an important dimension of the urban reform package that Wuhan has taken to heart. Previously, all of Wuhan's industrial activity was organized by Hubei, whose control has been described by local bureaucrats as "heavy." But the city is gaining more control over its enterprises, and at the same time is trying to coordinate industry management.

During the second half of last year, as in a few other cities across the country, several major plants in Wuhan under provincial management were transferred to municipal administration. Most notably, the Wuhan Iron and Steel Works, the second largest iron and steel mill in the country, passed from being under the dual leadership of the Ministry of Metallurgical Industry and Hubei to being under joint ministry–municipality control. Control of the Wuhan Boiler Factory and the Heavy Duty Machine Tools Plant was similarly delegated.

Machine-building is one of Wuhan's most important industries. Last November, a Machine-Building Management Bureau was established to make overall plans and coordinate management of machinery factories in the city. This should help solve past problems created by the division of the 1,100 or so machine-building enterprises into some 40 different departments and levels. That arrangement long prevented the city from organizing the industry in line with principles of specialization and division of labor.

Late last year preparations were underway to strengthen the management of other industries as well. A Wuhan Boiler Industry Association, a Motor Vehicles Industry Association, and a Shipbuilding Industry Association were all being set up.

Wuhan has also taken the lead nationally with its new system for selecting factory managers and personnel. The city is experimenting with the use of advertisements, examinations, elections, and recommendations. Even more surprising, on November 1, the Wuhan Diesel Engine Factory hired Werner Gerich, a retired West German engineer who specializes in internal combustion, to run the plant. This is the first time since 1949 that a foreigner has been engaged to run a Chinese State enterprise. The idea to do so was put forward nationally last spring, and quickly picked up by Mayor Wu on a visit to the German city of Duisburg, with which Wuhan has a sister-city relationship. Wu also signed an agreement with the Germans to invite 100 retired industrial specialists to Wuhan. Now the machine-building, chemical, and metallurgical industries have all expressed interest in following the diesel engine factory's example.

### *Problems—province vs. city*

How likely are all of these experiments to revamp the structure and operation of Wuhan's economy? As with any grand scheme, there are a number of potential pitfalls, and they are being openly addressed by city officials and the local and national press.

It is possible that the city has already become self-important, dreaming up unrealistic schemes and trying

to grab too much power. As one commentator admitted in the local paper, "Naturally, the city should consider the whole country, and shouldn't bring forth demands out of accord with reality." According to Vice-Minister Zhou Taihe of the State Commission for Reforming the Economic System, "Separate listing in the State plan for Wuhan does not mean creating a province within a province . . . Organs at the two levels (i.e., provincial and municipal) should not sing their own tune or a tune different from that of Beijing."

Most of the difficulties, however, seem to stem from Hubei's reluctance to loosen its hold over Wuhan. Much of the reason for this is financial. Recent statistics indicate the extent to which Hubei relied on the wealth generated in Wuhan in the past. Revenue from Wuhan accounted for fully 41 percent of Hubei's total in 1981, while provincial expenditure for the city amounted to only 12.6 percent of overall provincial outlays.

Lengthy wrangling preceded the province's agreement to Wuhan's new economic powers. The most contentious issue was how to draw up the city's financial retention base. In the final outcome, the city was slated to keep 28 percent of its financial income, while the rest will be turned over to the central government. A small part of the central government's portion will then be allocated to the province.

Handing down power over enterprises has been another sticking point. Such decentralization has been tried several times over the past 35 years, but never without a bureaucratic turf war. This time the point is being hammered home that the purpose is different: decentralization will allow the city to organize its economy in a more rational, unified way. In the past, the goal was often more political than economic.

Mutual distrust between city and province has been great enough to compel the provincial government to establish a leadership group for the reform programs. Made up of leading officials from both levels of government, its role is to handle the relations between the economic departments at each level. One local commentator has noted the continuing need for a "unanimity of views" between the two levels, warning that in the absence of agreement both sides will only focus on the division of rights and interests, and neglect the progress of the reforms themselves. Such statements make one wonder to what extent the city has really obtained genuine autonomy. The most concrete evidence of Wuhan's economic liberation will come when the city can actually make economic decisions without seeking upper-level approval.

### *In search of funding from abroad*

Funding poses a different kind of obstacle. Much investment will be required to turn Wuhan into the kind of modern center of circulation and service its planners envision. Its industrial foundation is largely composed of outdated equipment. Its urban facilities are still backward by world standards, and its transport installations inadequate. The central government has indicated that it will not be able to provide much help, so hope is now being placed elsewhere. According to Professor Li, other possible sources of funds include foreign investment and a kind of stock market, in which local enterprises will purchase shares. But some city and central government money will continue to be needed.

The role of foreign investment is potentially very large. City authorities now estimate that Wuhan will take in $150–$200 million annually in foreign investment and export earnings. Most of this will be spent on importing equipment and technology to upgrade the metallurgical, machine-building, electronics, plastics, and food processing industries, and in purchasing telecommunications equipment. Over the next three years the city hopes to complete somewhere between 800 and 1,000 technological transformation projects using foreign capital and imported technology. The aim is to replace equipment of 1930s and 1940s vintage with machinery and facilities that meet late 1970s and early 1980s standards. The city has also just set up a Foreign Economic Liaison Committee, aimed at drawing funds, technology, and talent from Overseas Chinese with Wuhan ties.

In the area of transportation, Wuhan is seeking funds for an international airport, port renovation and new construction, and for building a larger shipping fleet. Other investment projects include developing some trendy, name-brand export products that meet modern international standards, and upgrading Wuhan's East Lake district, a center of science and technology institutions, into an interior base for China's targeted technology-intensive industries. One last project is to create a special economic zone in the city. But any such endeavor will probably remain a dream unless a major policy decision at the central level gives inland areas the right to form SEZs.

Nonetheless, now that it has been granted economic management powers equal to those of a province, Wuhan has the right to negotiate contracts directly with foreigners and approve deals up to $5 million. These are the sorts of powers Beijing, Tianjin, and Shanghai have enjoyed for many years. But Wuhan is making up for lost time and has extended an open invitation to foreign investors. Expressing the city's optimism and his own energetic role in helping to create this climate, Mayor Wu announced recently that, "As a port city with a vast rural market around it, Wuhan could attract more and more farsighted foreign investors, just as China's coastal cities have done." 完

*Photo courtesy of Dorothy J. Solinger*

***Jianghan Street in downtown Hankou is a lively commercial center.***

# Science and Technology Reforms

*China's modernization could be on shaky ground without effective measures to promote scientific and technical advances*

**Denis Fred Simon**

Since 1978, improvement of China's science and technology capabilities has been one of the nation's top priorities. The leadership set broad and ambitious science and technology goals in the late 1970s, as the Four Modernizations program was getting off the ground. Reformers tended to view S&T as a "magic" ingredient, which could automatically transform and modernize the Chinese economy and military. In the last few years some of these overexaggerated expectations have been noticeably scaled down. The current period can be characterized as one of generally more realistic goals, and the acceptance of economic reform measures to help achieve them. But debate continues on the proper pace of scientific advance in China, and on the appropriateness of S&T reform experiments.

The broad-based reforms being introduced in S&T enterprises lend credibility to China's modified science and technology goals, and promise to alter the climate in which research and the application of technology take place. The reorientation includes a move away from large-scale basic research, introduction of the so-called "responsibility system" to the research sector, implementation of a contract research system, improvement of the status and benefits for scientific and technically trained persons, and a general shift away from reliance on whole plant imports as the primary vehicle for acquiring foreign technology.

### *Shift to applied R&D*

The general reordering of S&T priorities in recent years has culminated in a movement away from basic research and an increased focus on applied R&D. As one Chinese Academy of Sciences administrator remarked, "Our problem is not that there is too much basic research, it is just that there is not enough good applied research being done." The Chinese nowadays are emphatic about the need to integrate research and production activities.

Another salient aspect of China's current S&T priorities is the focus on the so-called "new global technological revolution," or what Alvin Toffler has called "the third wave" of the world's industrial revolution. The leadership from Premier Zhao Ziyang on down has highlighted in various policy statements the importance of making substantial progress in the four key emerging areas of technology cited by Toffler: computers and microelectronics, information technology, materials science, and biotechnology.

This emphasis on third-wave technologies has sparked a lively debate among members of the science and technology community. The economic readjustment of 1980–1981 was one factor leading to the scaling down of China's S&T modernization goals. Rather than catching up with the West by the year 2000—the original goal for S&T announced at the March 1978 National Science Conference in Beijing—China's leaders decided that a more realistic target would be to attain Western technical levels of the 1970s and 1980s by the year 2000.

Yet recent developments in the West and Japan in microelectronics and biotechnology have made a significant impact on the thinking of the Chinese leadership. Some officials argue that the more moderate goals will merely leave China permanently behind the West in the four key areas of technology. This would be politically unacceptable to the present leadership—whose credibility is based, in many ways, on an ability to close the prevailing gap by the year 2000 and establish China as a major force in global economic and S&T affairs. Thus the idea that China must somehow "leap-frog" stages of scientific and technological development, a notion that was popular in 1978, is once again in vogue. Numerous reports in the Chinese press testify that rapid progress in these four fields has become a critical part of China's development program.

The explanation for the coexistence of generally more moderate goals and this "leap-frog" attitude is that a two-pronged strategy for science and technology advance is emerging. On the one hand, in critical industries, Chinese officials recognize that rapid progress may continue to depend on a big-push approach supported by continuing central government efforts. On the other hand, China's leaders recognize the limits of central government guidance and acknowledge that market mechanisms, if used effectively, can be a powerful stimulus to innovation and technological advance. Thus, there is a willingness to loosen up S&T resources at the local level as long as these activities do not deviate from national priorities and goals.

### *Greater autonomy for research units*

A second dimension of recent changes is taking place at the enterprise level. Decentralization of economic authority is manifested in the

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S&T sector through the granting of greater autonomy to research units. Two important changes are the introduction of the "responsibility system" and the "contract research system."

Under the responsibility system, key personnel within research institutes will be increasingly accountable for the overall performance of their units. In keeping with the growing attention being paid to profits and losses, their job will be to prevent inefficient use of resources. Institute directors and project leaders will become more critical because they will determine the extent to which their respective personnel are productive and responsive to both national priorities and the needs of the marketplace.

A contract system has been introduced at approximately 600 research institutes in China, and may soon spread throughout the country. It requires institutes to secure an increasing proportion of their research funds from contracted research projects with local government organizations and factories. Some of these contracts will be issued on a competitive basis using sealed bids. Institutes completing projects under their estimated costs can retain the difference, while those experiencing cost overruns must cover the shortfall themselves.

The growing importance of contracts has raised questions about how to value research, and what price to charge for it. Aside from considering the actual costs of labor, raw materials, and other overhead, the question of "acceptable profit" has arisen in a number of cases. So far, three types of contracts have been issued. The first category is a direct fee-for-service agreement without a profit target built into the contract. The second includes a specific profit target, such as a 10 percent service fee. The third type includes a variety of bonus targets based on factors such as royalties.

One goal of the contract system is to help alleviate funding shortfalls that at present limit additional government investment in S&T. The Zhuzhou Electronics Institute in Hunan, formed in 1978, has been held up as a national example because it was able to establish its own financial base through extensive reliance on contract research. Another goal is to tie research more directly to industrial needs. According to one study conducted in Shanghai, out of 327 research achievements produced independently by research institutes between 1978 and 1982, only 21 percent were adopted by industry. According to an official of the State Science and Technology Commission (SSTC), "Contract research clarifies the aim of research, builds relevance, raises the enthusiasm of individuals and makes them work harder, and contributes to greater attention to feasibility, thereby improving the overall utilization rate."

*The absence of a well-qualified manpower base has been one of the main weaknesses in China's modernization program.*

### *The market for technology*

The movement toward contract research is complemented by the emergence of a market for technology. Several organizations are involved in a program to create a nationwide S&T and economic information network. Given the massive amount of technical information and literature flowing into China at the present time, a nationwide information network could significantly improve communications among interested parties.

Chinese R&D units sponsor various "technology fairs" and exhibitions to advertise existing innovations or capabilities that can be procured on a fee-for-service basis. In December 1984, such an exhibition was held at the Beijing Planetarium, sponsored by the Beijing Center for Development and Exchange of Science and Technology. This organization acts as a broker facilitating contacts between researchers and potential customers. Similar "fairs" have been held in Tianjin, Wuhan, and Shanghai. Some 500 organizations took part in last year's Shanghai Fair for Exchange of New Technology. According to Xie Shaoming, director of the Scientific Management Bureau of the State Science and Technology Commission, 1,400 technology development and service centers have been set up throughout the country.

Universities, too, are being encouraged to strengthen their applied research capabilities and earn revenues from passing on their knowledge to industry. Shanghai Jiaotong University has been a leader in this area (*see* page 38). Over the past several years, the school has signed 13 long-term cooperative contracts for research projects with the central and local governments, 1,445 contracts with enterprises, 406 consulting projects, and cooperated with over 2,000 units for testing, evaluation, and experimentation of new products and processes. Some of the contract revenues cover overhead expenses, while another portion is given directly to the principal researcher as additional salary.

As the market for technology develops, a variety of funding mechanisms have also appeared. For example, in Shanghai a special "technology development" fund was created to support priority projects. Bank loans have also become a major source of funding, sometimes helping to launch a project when institute funds are insufficient. The People's Bank in Hunan has created a ¥25 million fund to support S&T work. Research units must supply matching funds to be eligible. And in Wuxi, the local S&T commission has helped to subsidize research out of a recently created development fund.

The market for technology is encouraging greater interaction between enterprises with complementary skills. A growing number of formal and informal cooperative efforts are taking place between research units, design bureaus, and production entities—in many cases involving cooperation across bureaucratic boundaries. Three varieties have appeared, varying according to degree of integration: 1) loosely structured—cooperation without special administrative arrangements; 2) semi-entity—cooperation with some permanent organizational features, such as a joint planning board; and 3) entity-type—where administration, production, and research are fully integrated. If successful, these groupings promise to increase the output of "relevant" applied research and speed the transfer of re-

search results to production.

In some cases, several research units have pooled their funds in an effort to create a critical mass and promote economies of scale in research activities. In late 1984, for example, a joint seismological research fund was established when four organizations—the Institute of Geophysics and the Institute of Engineering Mechanics (under the State Seismological Bureau), the Department of Earth and Space Science (China S&T University in Hefei), and the Department of Geology (Beijing University)—joined forces to solve problems of mutual concern.

### *Improving conditions for S&T personnel*

Another important reform of the S&T system is the introduction of measures to improve the utilization of S&T personnel. The Chinese are retraining factory and R&D managers, putting more persons with technical competence in positions of authority, expanding overseas training through commercial as well as bilateral programs, and restructuring their higher education system. Management training programs have been arranged with the United States, Canada, West Germany, Japan, Sweden, and Hong Kong.

The attempt to create a well-qualified manpower base should not be underestimated. Its absence has been one of the major weaknesses in China's modernization program. As one Chinese author has suggested, "This is an important reason why some equipment with high efficiency and good economic results in foreign countries loses efficiency and economic results as soon as it is transferred to our hands." These ongoing efforts promise to help alleviate a major bottleneck in terms of improving industrial productivity, increasing R&D output, and ensuring more efficient use of imported technologies. Moreover, by having persons with greater technical and managerial competence in key positions within technology-acquisition units, China will be better able to make appropriate technical choices and monitor performance.

Reformers have taken several steps to improve allocation and use of S&T personnel. Scientists have been given greater financial incentives to innovate. Cash rewards for useful ideas can be as high as ¥15,000. In the

past, this was often split between the enterprise and individual, but now scientists can get the money directly.

In order to stimulate labor mobility, a quasi-labor market has been introduced to supplement the system of planned job assignments. Shanghai, Chongqing, Xiangfan, and Zhangzhou have been selected as the first experimental sites. Under this system, workers may apply for jobs on a trial basis. The employer has the option of releasing the worker if he does not work out, and the worker has the freedom to resign if the job does not meet expectations. China has also established a national exchange center for improving the distribution of technically trained individuals. The center will act as a clearinghouse for prospective applicants and employers.

Efforts are also underway to allow university graduates more choice over their initial job selection. Such individuals are being encouraged to look for jobs in a wide range of cities to broaden their experience and meet unfilled needs in less developed areas of China where their skills may be in particular demand. They are also being encouraged to engage in part-time consulting, though this practice faces opposition from those who resent the extra earning potential of these individuals. Overall, the notion of full job mobility within a real labor market remains a long way off for China, primarily because technically competent workers are still too scarce a resource to be granted complete job freedom. Nonetheless, highly trained workers now have at least the hope of job flexibility, something they lacked in the past. And the leadership has indicated that it intends to follow these initial steps with further reforms to address this severe problem.

### *Evolving organizational structure: leading groups lead the way*

Perhaps the most important organizational change in the structure of China's S&T system over the last several years has been the establishment of special "leading groups" or task forces for managing national and provincial priorities. These groups are part of the move to centralize planning in the critical technology areas that are receiving national priority.

At the highest level, the most significant example has been the creation of the "special leading group for science and technology" under the State Council. (For an outline of China's S&T establishment, *see* p. 27, July–August 1983, *The CBR*.) Discussions in Beijing early this year revealed that the science and technology leading group was created specifically to put the imprimatur of the premier's office on the effort to promote S&T modernization. According to a speech by Premier Zhao in October 1982, too many people in the bureaucracy were merely paying lip service to the call for advancing S&T. The special leading group is directly under Zhao's control, though the day-to-day activities of the group are now the responsibility of Song Jian, the newly appointed head of the State Science and Technology Commission.

Song's promotion after a successful career in the field of space and aeronautics is significant for a number of reasons. He possesses solid technical credentials—something his predecessor Fang Yi lacked. He apparently has been intimately involved in China's advanced military programs. Most important, however, Song has been associated with the big-push model of science and technology, the roots of which derive from the legacy of Soviet influence on the Chinese R&D system. Both China's nuclear weapons and missile programs have benefited from the ability of central government organs to create a critical mass of expertise and to coordinate diverse resources to achieve a priority objective. Seen from this perspective, Song's role will be to promote this type of coordination—a necessity given China's present organizational structure and the bureaucratic obstacles it creates for such cooperation and coordinated efforts.

The formation of the special leading group for science and technology has been complemented by the establishment of several high-level, highly focused groups in the areas of electronics, computers, and equipment development and acquisition. The electronics leading group, created in September 1984, is headed by Vice-Premier Li Peng. Its prime responsibility is to ensure that China makes sustained and substantial progress in such critical areas as large-scale integrated circuits and computers. This group is also directly attached to the State Council, thus alleviating the bureaucratic boundary problems encountered by the Ministry of Electronics Industry in its efforts to coordinate electronics development among the various ministries with an interest and capability in this area.

At the provincial and municipal

*Photo courtesy of New China Pictures*

***Worker at a semiconductor plant in Jiangsu Province examines Chinese-built electron beam master equipment used in the production of integrated circuits.***

levels, a growing number of special leading groups concerned with both S&T affairs and the import of technology have appeared. The appearance of these organizations suggests that as the authority for making decisions in the S&T areas has devolved to lower levels, local leaders are attempting to avoid costly errors and maximize existing opportunities by relying on a select group of experts to help them make appropriate policy decisions.

In several parts of China efforts are underway to create special zones to concentrate technology and R&D activities. In some ways, these zones resemble the "science parks" in Taiwan, South Korea, and Japan. Preliminary projects are underway in Shanghai (Wuxi), Beijing (Haidian), and Tianjin.

The role of the Chinese Academy of Sciences (CAS) appears to be changing as the organization becomes more attuned to the new national economic goals. In October 1984, CAS President Lu Jiaxi announced a revision of the CAS mandate that reaffirmed the principle that basic research should be subordinated to applied research. Lu set five goals for the CAS: 1) assist with the goal of quadrupling national income by the year 2000; 2) respond to the "new technological revolution"; 3) improve the quality of research; 4) achieve greater cooperation with universities and industry; and 5) improve the mobility and treatment of S&T personnel.

### *Open door promotes self-reliance*

As China develops its indigenous S&T capabilities, it is also trying to make better use of foreign technology. The number of cooperative research and production projects is growing rapidly, and bilateral S&T exchanges are increasing with all the major industrial democracies, as well as with Eastern Europe and, most recently, the Soviet Union. Training and overseas education programs have also expanded. Activities in these areas are complemented by the steady growth of commercial technology relations, which seem to have blossomed as China grows more confident of its ability to deal with the outside world.

Foreign technology will be an important part of the plan to modernize existing industrial facilities. In 1983, 666 factory renovation projects involving foreign technology were undertaken—more than the total number of similar projects implemented from 1979 to 1982. According to State Councilor Zhang Jingfu, ¥90 billion will be allocated between 1985 and 1987 for technical transformation of 11,000 enterprises, ¥14.2 billion of which will be in the form of foreign exchange for technology imports. In general, primary stress is being placed on acquisition of know-how and select equipment rather than whole plants or large quantities of equipment.

The emphasis on know-how is designed to reduce potential long-term dependence on foreign sources and promote China's goal of greater technological self-reliance. In spite of constant reminders from China's leaders that the open door policy is here to stay, the Chinese have not backed away from their overall commitment to national self-reliance. For example, a recent Chinese analysis of the import of 13 chemical plants in the early 1970s suggested that China was unable to produce copies of the factories because it failed to purchase patents for crucial parts and secure other manufacturing techniques from the suppliers. In fact, between 1950–1980, over 90 percent of China's foreign exchange expenditures on technology imports went for whole plant imports rather than the licensing and acquisition of know-how. Beijing now wants to use foreign technology to strengthen its own long-term capabilities as well as to help rebuild its industrial base in the near term.

China's ability to absorb imported technology has steadily improved over the last several years. The primary factor contributing to this improvement has been reforms introduced in the industrial and R&D sectors since 1982, which have encouraged factory and research managers to pay attention to the more effective use of technology and equipment in general, and imported technology and equipment in particular. Without such reforms to complement stepped-up technology imports, the present level of progress might have been unattainable.

While acknowledging this appreciable progress, it goes without saying that some technology absorption problems remain. At a symposium held on technology import in Guangdong last August, three main problems were cited: 1) lack of an overall plan, resulting in excessive duplication; 2) excessive emphasis on hardware while neglecting imports of "software"; and 3) poor preparation, leading to inadequate results and unfulfilled expectations. These same problems had been identified in March 1984 in a State Economic Commission circular admonishing organizations to do a better job of coordinating their activities and sharing information. As in the past, computer imports were singled out as an example of these larger problems. Specific problems cited were the tendency to buy machines based on their advanced technological level rather than based on actual needs, and the fact that computer purchases are often made without considering software needs and availability.

### *Politics and S&T reforms*

Within the S&T system, we are witnessing significant changes in the way things are done in China. As the research system improves, and as current education programs begin to produce larger numbers of qualified individuals, the S&T modernization program and the accompanying technology acquisition effort are likely to yield greater payoffs. Over the long term, if both efforts are successful, China may move farther and faster in its modernization program than previously thought.

Yet, it is clear that numerous problems must still be overcome and that some political opposition to S&T reform remains. Some cadres are not happy about relinquishing their posts to more technically competent individuals. Others are not convinced that the use of economic methods to manage scientific research units is appropriate. And others remain unconvinced of the merits of relying so heavily on science and technology as a key part of the modernization drive.

The Chinese are frank about the extent of these difficulties, and consequently they are not overambitious about their ability to overcome present shortcomings. This is a real strength of the current leadership. The new policies are being implemented with a proper balance of investigation and caution. In contrast with the past, China's S&T program can be characterized as having realistic expectations, and down-to-earth methods for achieving them. 完

# Shanghai's Push into High Technology

*Reform of the science and technology sector could help the city achieve its goals*

**Madelyn C. Ross**

Shanghai's upcoming Five-Year Plan (1986–1990) targets seven new high-technology industries for priority development: microelectronics, bioengineering, optical fiber communications, laser technology, new materials, marine engineering, and robotics. In each area Shanghai has strong research and design capabilities, but little industrial achievement.

Forced to rethink industrial strategy because of severe constraints on the city's energy, raw materials supply, and transportation, planners decided to focus on new industries that place less strain on these inputs. At the same time, these new industries could take full advantage of an often overlooked industrial resource: Shanghai's considerable science and technology expertise, housed in the city's universities and research institutes.

More than 600 scientific research institutes, 280,000 scientists and technicians, 51 higher-education establishments, and a highly skilled labor force provide the basic building blocks necessary for the city to become a high-technology industrial center. But applying this expertise to industrial production will not be easy. The compartmentalism of research institutes and universities, and their lack of coordination with industrial facilities, have long inhibited cooperative efforts between research and industry. City officials admit that scientific breakthroughs in electronics, microbiology, and bioengineering have taken place, but have not been applied successfully outside the laboratory.

Ongoing reforms at China's science and technology institutions aim to increase cooperation with industry, and may provide the flexibility and incentives to make it work. Several experimental programs in Shanghai are already yielding promising results. If Shanghai's considerable S&T resources can be mobilized on a large scale, the new industrial goals of the city's five-year plan will be within reach.

### *Microelectronics receives top billing*

Microelectronics, the city's top high-technology industrial priority, is viewed as a technology that can improve production and efficiency across a wide range of industries. It is no coincidence, therefore, that microelectronics provides the most advanced examples of cooperation among factories, research centers, universities, and foreign firms to date.

Planning for this sector has been unusually thorough. In 1983 the municipal government appointed Vice-Mayor Liu Zhenyuan to oversee developments in the city's electronics industry. The Shanghai Municipal Subcommittee on Computers and LSI Technology, established last year, will coordinate policy. The city picked Caohejing district in the southwest corner of Shanghai to serve as the microelectronics industry's focal point, and formed several new corporations last year that will use Caohejing as their manufacturing base.

Factories in Caohejing currently produce some printed circuit boards and instruments, but no computers or integrated circuits. Formerly a suburb, the district was recently annexed by Shanghai to make salaries and benefits there more attractive for skilled city workers. The district also lies close to Shanghai's Jiaotong University, where faculty and students welcome the chance for hands-on applied research experience offered by Caohejing's development.

Faculty from several local universities are working with city officials on Caohejing's industrial plans. A top priority will be to attract integrated circuit (IC) factories, since Shanghai currently relies on imports and production from other cities to meet its advanced LSI technology needs. Shanghai's research work in IC design is fairly advanced, but the city has only four factories producing ICs in quantity, and then mainly of medium-scale.

Some of China's more advanced IC factories are found in Shanghai's neighboring cities of Changzhou, Hangzhou, Wuxi, and Suzhou. These cities are all located in the greater Shanghai economic zone, prompting city officials to hope for more cooperation between them. Shanghai officials have come up with a preliminary "Pivotal Development Plan for ICs and Microelectronic Computers in the Yangtze River Delta." But while Shanghai's IC factories are under municipal control, most of the other IC factories in the delta area are under the Ministry of Electronics Industry (MEI). Since their factories are basically rivals, MEI may well view Shanghai's joint development proposals skeptically. But the Shanghai Science and Technology Commission could possibly play a coordinating role. Last year it placed production of ICs at the top of its list of major projects to be accomplished by 1986, and set the goal of increasing production from 10 million to 30 million chips, 10 percent of them LSI chips. Reaching this target may be difficult without cooperation from regional factories and research units. Nevertheless, the city made a promising start in 1984, producing 11.6 million ICs, 21 percent more than in 1983.

### *New alliances to produce computer hardware and software*

A major thrust of expanded IC production will be to support the computer industry, which forms another important component of the microelectronics development plan. But the problem of competing bureaucracies is also severe among computer factories. As Vice-Mayor Liu pointed out last year: "Twenty-seven units in Shanghai are directly engaged in the scientific research, production, application, and service of computers. They come under the vertical jurisdiction of the ministries of Education, Electronics, and Machinery, and relate horizontally to the bureaus of Meters, Higher Education, and Light Industry. Each unit has a certain strength, but they cannot coordinate their actions because they are administered by different 'grannies,' and have different sources of income."

In mid-1984 two new municipal corporations were formed to cut across these bureaucratic barriers: the Shanghai Computer Corporation (SCC) and the Shanghai Software Technology Development Center (SSTDC) (*see* chart). Although still very young, these organizations illustrate the city's recent efforts to pool its high technology resources.

The Shanghai Computer Corporation, formed last June, is modeled on similar computer corporations set up recently in Beijing, Tianjin, Guangzhou, and Shenyang. SCC takes the place of the Shanghai Computer Industry Co., formed in 1978, which manufactured a number of products in addition to computers. The more streamlined SCC focuses strictly on computer hardware development and production, although it plans to get more involved in software work, too.

SCC unites the Shanghai Computer Technology Research Institute with three local factories formerly under the Bureau of Instruments, and a service corporation. SCC's directors proudly point out that they are now an integrated corporation combining research and development, manufacturing, service, maintenance, and training. However, they recognize that they lack marketing experience, and technically still have far to go. The Shanghai Computer Factory, largest of SCC's factories, has until recently manufactured only about 200 microcomputers a year. But production is picking up. Last year, the city's microcomputer output more than tripled to 1,347 units.

Peripherals production at SCC factories is inadequate, and the company hopes to attract foreign firms willing to cooperate in the manufacture of terminal displays, multilayer printed circuit boards, printers, floppy disks, and software.

A breakthrough for SCC came in January when Wang Laboratories (US) announced a joint venture to transfer technology for microcomputers to the Shanghai Computer Factory. The factory will begin by assembling imported Wang computer kits. But five years and 50,000 units later, the plant is expected to handle all aspects of production. Wang will also help the factory develop Chinese-language software.

The Shanghai Computer Corporation currently has no factories under its control devoted to software, and lacks applications expertise. But SCC sent several employees to the US and Japan for software training in 1984, and expects them to help the company develop software when they return.

Most advanced software research is done under the aegis of the Shanghai Software Technology Development Center. SSTDC includes six Shanghai universities, the Shanghai Investment and Trust Corporation

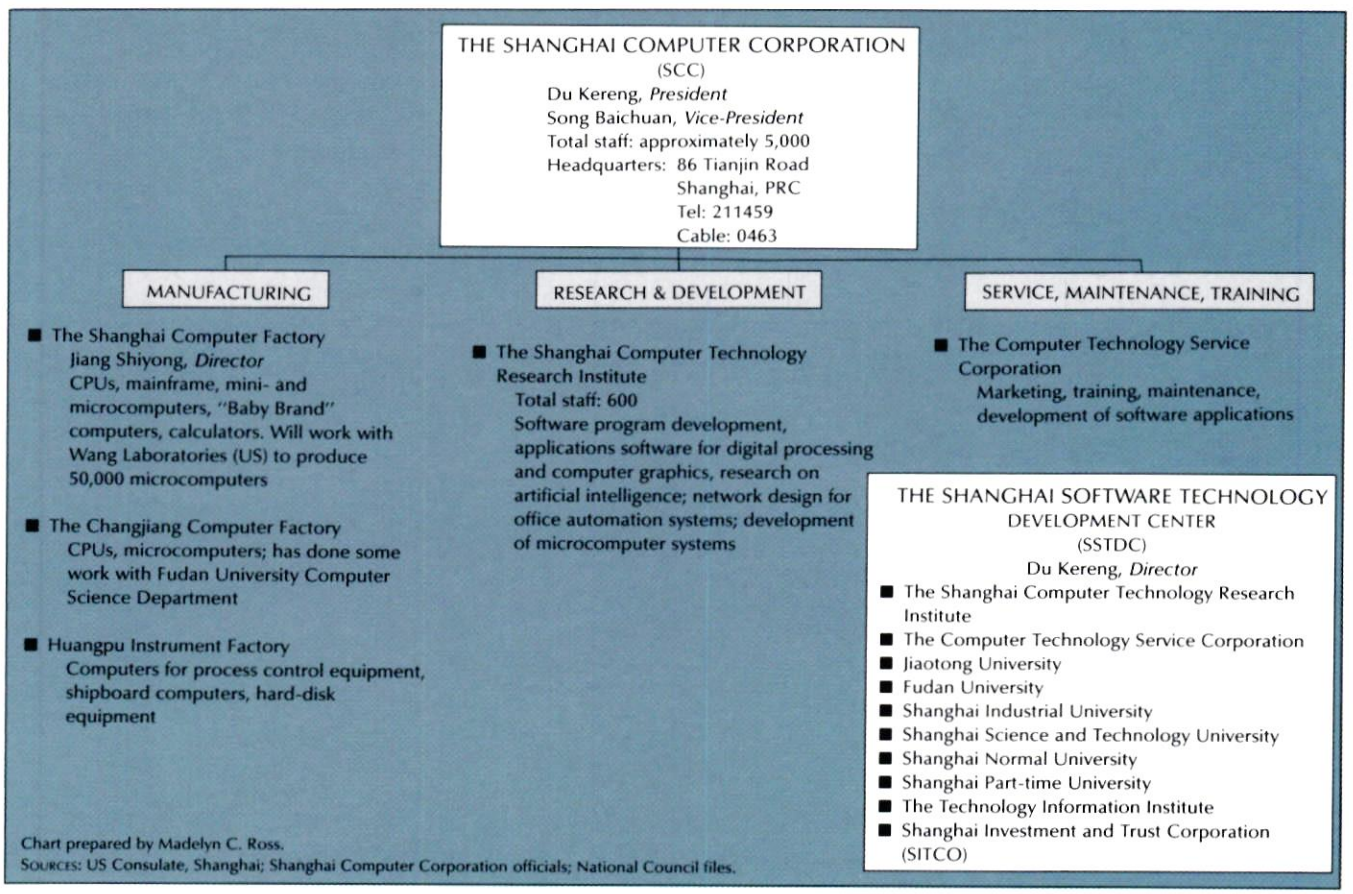



Chart prepared by Madelyn C. Ross.
Sources: US Consulate, Shanghai; Shanghai Computer Corporation officials; National Council files.

(SITCO) to handle business negotiations, and shares the resources of the Shanghai Computer Technology Research Institute and the Computer Technology Service Corporation with SCC. Although the research institute reports to both SCC and SSTDC, its focus has been on applications software in the past.

SSTDC is more loosely organized than SCC, and takes a different approach to tasks. Its member organizations describe its role as akin to that of the United Nations. Universities in Shanghai generally perform their own software research (which they can tackle more easily than hardware because it requires less capital investment). However, they come together under SSTDC to solve difficult problems or tackle major projects that require a combination of their resources. SSTDC has begun at least two such projects in the past year.

Under the first project, SSTDC will write computer programs to help industrial engineers design their own applications software. In developing favorable programming environments for industry, the various institutions under SSTDC will focus on computer programs that reflect their own differing areas of technical expertise.

The second joint project is to establish a national software factory in the Caohejing microelectronics district. Currently the focus of activity is on training staff for the facility. Fudan University has been chosen as the major training center. Forty-five students began a two-year software course at Fudan last year, and will form the core of the factory when they graduate. Another 200 students will enroll at Fudan over the next two years, so that a total of 250 engineers will be trained in three years.

In the meantime, the various institutes under SSTDC are busy gaining practical experience in software engineering. Both Fudan and Jiaotong universities have performed commercial software engineering work under contract to a California firm called the Shanghai Software Consortium. Their first assignments, in

## Jiaotong University's Maverick Corporation

The Nanyang International Technology Company, formed by Shanghai's Jiaotong University in 1983, is among the most successful combinations of research and industry in the city yet. An auxiliary profit center that provides a commercial outlet for research done at Jiaotong University, Nanyang is a revolutionary concept for China, and an idea not without controversy even in the West.

Jiaotong University has always been oriented to applied research. But with the new flexibility given universities as part of China's science and technology reforms, factories are now working directly under Nanyang's supervision to design and produce new products.

There are 30 factories under Nanyang's research and development division. Although some of the factories are in Shanghai, most are in other cities and some as far away as Sichuan Province. In a typical arrangement, a factory will go through the Nanyang International Technology Company to import equipment and technology. Jiaotong faculty members will then act as technical intermediaries to speed the absorption of the new technology. In most factories, the technical director is also a Jiaotong professor.

In addition to representing factories seeking equipment and technology, Nanyang will also help develop domestic and overseas markets for products developed within the university or the factories with which it works. Computer software written at Jiaotong University has provided the vehicle for Nanyang's first entry into foreign markets.

Nanyang's Software Development Group is composed of graduates and members of Jiaotong University's computer science department. In 1983, Jiaotong began writing a variety of software programs for the US market under an agreement with the US-based Shanghai Software Consortium (*see* page 39). Jiaotong has also written software for hotel administration that is now in use in Guangzhou's posh White Swan Hotel, and CAD software for the shipbuilding industry.

Pleased with these successes, Nanyang has decided to expand its commercial software operations. The company recently approached the Shanghai Software Consortium with a proposal to establish a joint venture for the distribution of foreign software programs in China. The US firm would evaluate and acquire software for Nanyang, while Nanyang handles advertising, selling, and distribution of the software in China. The first step will be a symposium in Shanghai this May to display a wide range of foreign software, and give Chinese customers an idea of what is available.

Nanyang may also get involved in selling computer hardware. Jiaotong's Microcomputer Institute is now working on product development with seven factories, and hopes to manufacture inexpensive microcomputer systems for the domestic market. They have begun assembling computers made in Hong Kong, which are then sold on the Chinese market. Jiaotong is proud of its development of an IBM-compatible "MEB PC" (the name stands for Micro-Electronic Brain), which it claims is far more advanced than other domestically designed microcomputers.

Nanyang's unique activities were made possible as a result of special freedoms granted to Jiaotong University in 1979. Designated China's pioneer university to experiment with sweeping management, teaching, and research reforms, Jiaotong's innovations have been widely praised, and received the personal support of Deng Xiaoping in 1982.

Jiaotong University's many distinguished alumni, including Shanghai Mayor Wang Daohan and Minister of Electronics Jiang Zemin, have also boosted the school's profile, and overseas alumni have been a significant source of financial support. Sir Y. K. Pao, Hong Kong shipping magnate, donated a new high-rise library while An Wang, chairman of Wang Laboratories (US), has supported the computer department's activities. Another important supporter is Politburo member Wang Zhen, head of the Jiaotong University Association and the main force behind Jiaotong's ongoing program to support industrial development in Xinjiang Province.

The fortunes of the Nanyang International Technology Company are closely tied to those of Jiaotong. As Nanyang gains confidence, its ideas have grown in scope. Currently the company plans to build a hotel near the university to house visiting business people, and later a high-rise office/exhibition center. Nanyang expects to be a continuing model for other universities eager to cash in on their industry expertise, at the same time that they directly support China's industrial modernization program. — MCR

1983, were to program computer games for the US market. But the universities have gradually moved up to programming graphics, educational software, and business software. Both schools are eager to get more involved in industrial software engineering and prove their capabilities in more challenging tasks.

Although the Shanghai Software Consortium is pleased with their work, the current glut in the world software market makes expansion of their activities difficult. Eventually, however, all SSTDC facilities would be interested in writing software programs for export. The experience they gain will be directly applicable to the work of the new software factory when it gets off the ground several years from now.

### *A proliferation of new high-tech companies and ideas*

SCC and SSTDC, which combine the resources of Shanghai's major computer production and research centers, are perhaps the most broadly based organizational experiments in Shanghai's emerging high-technology industries. But new corporations are forming in the other targeted technology areas too. The Shanghai Global Biotechnology Development Company Ltd., formed this year, will focus on commercial outlets for the city's considerable bioengineering expertise. Shanghai has been chosen one of three national centers for biotechnology development—the other two are Beijing and Guangzhou. Each city will focus on different areas, with Shanghai's emphasis on enzymes, cell biology, fermentation, microbiology, and genetic engineering. The new company, which owns 20 acres of land and two greenhouses outside the city, plans to raise specialty flowers using single-cell reproduction to sell to the city's growing number of hotels, and to develop enzymes with industrial applications. The company's chairman, Dr. Tan Jiazhen, is also the director of Fudan University's Genetics Institute, and a long-time advocate of better cooperation between the city's research and industrial facilities.

In the area of marine engineering, the focus of commercial activity is on applications to support offshore oil development in the East China Sea, not far from Shanghai. The Shanghai Offshore Engineering Corporation (SOECO) was formed late last year with the resources of Shanghai's Marine Design and Research Institute as a base. This company uses a formula becoming more common for China's research institutes: institute faculty will in effect wear two hats—representing the institute as before, and using their corporate namecards when performing commercial services. The faculty will be hired by industry as technical advisors, to research and design offshore oil exploration equipment and vessels, and for general consultation and project management services.

Not all of Shanghai's seven targeted high technologies have reached the point of establishing commercial corporations yet. For instance, although fiber optics technology is urgently needed for the telecommunications industry, and Shanghai's research capabilities are arguably the best in China, the city's institutes only recently began to pay close attention to industrial applications. But this situation is changing rapidly. The Shanghai Institute of Silicate Research, a center of fiber optics research and production in China, plans to join with two Shanghai glass factories to form the Shanghai Optical Fibers Company this year.

In 1983 the Shanghai Science and Technology University and the Shanghai Quartz Factory produced a new generation of single-mode fiber optics for use in telephone cables. And in 1984, the aforementioned Institute of Silicate Research worked with a factory to develop a new long-wave multimode optical fiber capable of transmitting a TV picture and up to 1,900 telephone lines simultaneously.

Perhaps the changing emphasis of the Shanghai Institute of Laser Technology provides a more typical example of the type of development taking place at research institutes around the country. Lasers, another of Shanghai's seven targeted technologies, have a wide variety of industrial uses. But although the Shanghai Institute of Laser Technology publishes a catalog of its laser products, its work with production units was viewed more as a favor than a responsibility in the past.

Like other research units whose work has industrial applications, the Laser Research Institute began to receive less grant money from the government last year. The institute will still undertake some long-term basic research projects with government funds, but from now on a growing portion of its revenue will come from contract work done for factories.

In the past, the Laser Institute relied mainly on its own development efforts. But as time becomes more valuable, this approach makes less economic sense. As a result, more emphasis will be placed on importing advanced equipment.

New economic incentives to work directly with production units will ensure that research is directed to industrial problems. Later, institutes and factories may decide to form joint corporations like those in Shanghai's computer industry. And if their joint efforts produce marketable new products, they will be on their way to fulfilling a major goal of China's science and technology reforms: turning research capabilities into industrial progress. Shanghai's science and technology institutes seem eager to join in this national effort, and in doing so help the city meet its new industrial goals. 完

*Photo by Madelyn C. Ross*

***Writing software for the US market at Jiaotong University.***

# Reforming the Labor System

*China's leaders struggle to put the world's largest labor force to work*

**Tom Engle**

Unemployment is a touchy subject in a socialist country and China is no exception. Yet China has an unemployment problem in both its rural and urban areas. In the countryside, the otherwise successful agricultural reforms have revealed the widespread use of redundant labor under the former commune system and lifted the veil off a once disguised unemployment problem of staggering proportions. In the cities, the industrial reforms announced last October may well increase urban unemployment in the short term if factory managers given expanded authority shed surplus workers in that sector.

To their credit, China's current leaders are increasingly open about the problem. They recognize that the "solutions" practiced in recent decades—sending unemployed urban youths to the countryside and giving enterprises in both sectors incentives to hire unneeded workers—were not solutions at all. Reforming the labor system itself is thus an important element in the government's employment strategy. The present leadership also recognizes that the employment model followed by today's developed countries, in which urban industry absorbs masses of rural laborers, is singularly inappropriate for China. An urban industrial expansion sufficient to employ anywhere near most of the country's 800 million peasants is simply not in the cards. In any case, China hopes to solve its unemployment problem without allowing the uncontrolled rural-to-urban migration common in so many other developing countries.

So the search for a solution must begin elsewhere. Like many other aspects of China's economy and society, employment policies are in flux. Beyond its obvious debilitating effects on the underemployed or jobless worker, higher unemployment is often cited among the potential threats to the success and durability of China's reform movement.

### *The extent of unemployment*

China's labor force of more than 450 million people is larger than the *entire population* of every country except India. While at least 22 million youths reach working age each year, only 6 million old workers retire. The Chinese economy thus faces the formidable task of creating some 16 million jobs per year.

In terms of ownership, Chinese enterprises come in three sorts: those owned by "the whole people" (State-owned), those owned by their workers (collectives), and those owned by individuals. About 340 million workers, almost three-fourths of the total labor force, are rural laborers in collectives or individually owned enterprises. Urban workers in State-run or collective enterprises number over 117 million, one-fourth of the labor force. The government acknowledges some 2.3 million self-employed workers in cities and towns, less than 1 percent of the work force.

While there is no particular reason to doubt China's labor force statistics, most Western observers are suspicious of official unemployment figures. Until recently, no one in China was referred to as "unemployed." In the official euphemism, there are several million persons "waiting for work." Recently, China-watchers noted with interest that Beijing's labor bureau bravely described those waiting in the city as "unemployed." The figures accompanying this frank use of terms, however, were no more convincing than ever.

The government asserts that 2.7 million people were jobless in the country's urban areas at the start of last year, down from 6.4 million in 1979. At just 2.3 percent of the urban labor force, this rate would be the envy of countries far more prosperous than China. Many Western experts believe urban unemployment is three to four times higher than the government admits. But even a figure of, say, 9 percent would not account for redundant workers in Chinese factories. By the government's own admission, these number some 40 million, almost a third of the urban work force.

Estimating rural unemployment is trickier because of seasonal fluctuation in demand for labor and the greater ease with which agriculture can employ surplus labor. But the government says that 100 million peasants, again almost a third of the rural labor force, could be removed from farming without reducing farm output. In an interview with American journalists last year, Vice-Premier Yao Yilin claimed the countryside had "a surplus labor force of about 200 million."

### *Responsibility system bares rural labor surplus*

Curiously, China's current leaders in effect take credit for this severe unemployment problem in the countryside. The decollectivization of agriculture and other pragmatic reforms they have instituted over the past five years have greatly increased the output of each peasant. This expansion of labor productivity means fewer farmers are needed to produce the same volume of food and other goods. While China's agricultural labor force has grown by only 14 percent since 1979, the value of agricultural output has more than doubled. The employment policies of the past

had clearly reached the point of diminishing returns.

As a *People's Daily* commentator put it last December, "With implementation of the contract responsibility system for production, linking remuneration to output, the rural economy has been invigorated and the peasants' enthusiasm in production has been raised. At the same time, an outlet is urgently needed for a great amount of surplus manpower." The responsibility system did not create this labor surplus so much as it uncovered it. But once uncovered, these surplus workers must be able to find productive employment if the gains of the contract system are to be lasting.

Increasing agricultural mechanization, in part spurred by higher farm incomes, will ensure that labor productivity and rural unemployment continue to grow in the future. According to some official estimates, 20 percent of the rural work force is no longer needed to grow crops, and this figure will grow to 70 percent by the year 2000. Vice-Premier Wan Li believes only 80,000 laborers will be needed to farm Beijing municipality's rural areas once the district's agricultural machinery is fully developed. The municipality's current rural labor force is almost 1.9 million.

### *Growing small businesses help alleviate urban unemployment*

In addition to normal growth in the urban labor force, the Chinese economy has had to find work for the urban youths who were sent to the countryside during the Cultural Revolution, but began returning in 1978. Some 10 million of the 17 million originally sent down have returned to the cities. Officials say most have now been given work or have started small businesses.

The chart on page 42 shows that most urban laborers work in the State-run sector. But collectives and individually-owned enterprises are emerging as important employers. Of the almost 40 million new jobs created in Chinese cities since 1979, 32 percent were in the collective sector and 6 percent were in the self-employed sector.

A total of 600,000 Chinese city dwellers started their own businesses in 1983, more than 80 percent of them in catering and other commercial and service trades. Almost all of these service jobs have been created

Artwork by John Yanson

in the last five years as the government has dropped its opposition to a sector once condemned as petty bourgeois. The policy shift has not only mitigated urban unemployment, but also helped satisfy consumer demand for a wide range of personal services long neglected in Chinese cities. As University of Southern California anthropologist Eugene Cooper put it, "The State has in effect despaired of providing all these services. The current policy could change again, but for now the State seems serious. It has created greater opportunities for small businessmen."

Beijing's almost 50,000 registered private business operators had a total turnover of ¥200 million last year, a fifth of them having opened for business in 1984 alone. City labor bureau officials claim such enterprises, along with the numerous collectively owned service establishments, helped reduce the number of "truly jobless" in Beijing to fewer than 2,000. While this figure should be regarded with skepticism, the important trend toward enhanced opportunity for service entrepreneurs is clear.

### *Worker unrest in the State sector*

The urban service sector is one employment outlet the government envisions for surplus workers that must be let go from the State-run sector. A recent *Economic Daily* article said Chinese enterprises could now reduce their staffs by 10–15 percent in order to boost profits. Such a step would be among the most radical reforms attempted in China, where, once hired, workers have been guaranteed lifelong employment. Under the current fixed employment system, enterprises do not have the right to employ whom they want, and laborers are not free to choose their occupations. Workers obtain their first job through their school or community assignment office and most find a career at that first job.

Will reforming this system raise urban unemployment along with profits? There would seem to be four possibilities. First, the least likely outcome is that labor reform will have little or no effect on employment levels. Second, labor reform will reduce unemployment. This is everyone's preferred outcome and the one the Chinese government is eager to peddle. As *People's Daily* put it last November, "The basic way to solve the employment problem in our country is to raise labor productivity. Raising labor productivity does not contradict increasing employment." Under the new policy, it is significant that the factories releasing workers, not the government labor authorities, are responsible for finding them new jobs.

China's reformers may sincerely believe that higher productivity and profits can be achieved without higher unemployment, but a reported rise in incidents of worker unrest late last year suggests that not all workers are convinced. Some experts believe the unrest is fueled by labor union officials and lower-level Communist Party officials upset over losing clout to factory managers. A recent Party appeal to unions to support current economic reforms would appear to support this view. A top Party official said unions should fight against violations of workers' rights committed in the course of reform while maintaining support for the reforms. This could become an increasingly difficult task to perform.

The third possibility is that labor reform will increase unemployment. If bosses begin exercising the authority reformist leaders believe they need, this is a likely outcome, at least in the short term. As University of Chicago sociologist William Parish says, "The big fright about adopting the reforms is that consumer prices and unemployment will increase. If they do, China could become another Poland." Chinese leaders probably overestimate the service sector's capacity to absorb laid-off workers. University of Chicago economist Gale Johnson says, "There's still little prestige in these service trades. And though the central government says it supports private business, Maoists among local administrators often set up roadblocks."

The fourth possibility is that the labor system reforms will not be implemented thoroughly enough to have much effect on employment levels. For the foreseeable future, this is the most likely alternative. While the Chinese press has reported on factories that have increased profits by reassigning surplus workers, there is little other evidence that Chinese managers are using their authority to trim staff levels. As Johnson described the situation, "Firing even the laziest workers will remain very difficult for a long time. But managers may have more control over *whom* they employ; they may not have to hire whomever they're told to as in the past."

Columbia sociologist Andrew Walder explains,"Managers nominally have more authority to fire workers, but as yet no financial incentive to do so. With fewer workers, a factory's budget is cut too, so profits don't increase. Managers have an incentive to replace bad workers with good ones, but not to reduce the overall size of their budgeted work force." Moreover, this situation is not likely to change soon because while "there's consensus within the leadership on the need to increase labor productivity, there's no consensus on cutting existing employment in State industries."

### *Policies to achieve full employment*

Employment reform may be more rhetoric than substance, but it is not just a paper tiger. If it were, the government's position that labor reform is an important aspect of its effort to provide full employment would lack all credibility. Other policies include the following:

**Labor contracts** The reformers would like to replace the institution of guaranteed career employment with increasing use of specified term contracts between enterprises and individual workers. Contracts presumably would permit employers to better match workers' skills with their own needs and provide them with a legal means to reduce staff levels by refusing to renew the contracts of lazy or unneeded workers. As Vice-Minister of Labor and Personnel He Guang said recently, "The purpose of having labor contracts signed between laborers and enterprises is to . . . rationally combine the labor force with production materials." That's officialese for 'China's factories have too many people for the number of machines, and contracts will help bring about a better balance.' Labor contracts are being tried on an experimental basis in various parts of China. He said that as of last September, 870,000 workers had been recruited under contracts, 90 percent of them in State-run factories.

**Greater labor mobility** According to Premier Zhao Ziyang, China currently has "a lack of talented personnel in certain places, while other departments and units are overstaffed and the talents of personnel are largely wasted." He and other reformers are pushing for a more rational flow of workers around the country, especially technical specialists whose skills are in high demand. To this end the Ministry of Labor and Personnel (MLP) last June set up the National Talent Exchange Consulting Service Center; most provinces and leading municipalities have set up similar bureaus. They coordinate requests from professionals seeking to change units and those from factories seeking experts. According to the Xinhua News Agency, the national center received transfer requests from more than 1,200 professionals in its first five months of work. More than 900 reportedly were in jobs unrelated to their expertise and most of the rest had no work to do because their units were overstaffed. These surely represent the merest tip of the iceberg of underutilized or poorly assigned experts in China.

Talent exchange centers may have been created to tangle with enterprises opposing labor reform. These enterprises can be very inventive when it comes to preventing the loss of qualified people. Some units require the transferred employee to return housing provided by the unit, require the unit receiving the employee to pay a fee to cover the cost of training or compensate for the loss of the worker, or flatly refuse to release college-educated employees even if they are not needed. The reason given for the latter refusal is the need "to maintain an army for a thousand days, even if it is only used for an hour."

By the government's own admission, the national center has made only scant progress in correcting such local resistance. Ironically, factory managers should have the strongest interest in freer labor mobility. Columbia's Walder argues that until the necessary financial incentives are instituted, "managers have every incentive to hoard labor, especially skilled workers."

Walder provides an example that shows how a half-baked reform effort may be worse than no reform at all. One form of mobility the government encourages is having urban workers take jobs in expanding suburban factories, some of which pay wages far above the urban norm. Workers in State-run urban factories may take sick leave for up to six months, and many use this time to work in suburban factories. There they draw a wage four times their usual one, all the while drawing their old wage as well. After six months, these workers reappear cured at their old factories, work four days, and then call in sick again and repeat the process. Clearly, the iron rice bowl has not been smashed yet. Walder found this practice occurring "fairly regularly" in southern cities such as Kunming and Guangzhou. It illustrates growing labor mobility, but also that workers prefer to maintain a foothold in urban State-owned factories where the security and benefits are better.

**Stress on collective enterprises** The government does not want the already overstaffed State sector to become more so; it thus hopes that collectively owned enterprises can bear the brunt of new urban job creation. The State helps with loans, reduced prices for equipment, and tax holidays, but only so much. From the State's viewpoint, the benefit of collectives is that they provide jobs at minimal cost to the State.

**Job training** While some technical specialists may be languishing in units that don't need them, China faces an overall shortage of qualified personnel. According to Yue Guanzhao, director of the MLP's Institute of Labor Studies, fewer than 10 percent of secondary school graduates receive further education. Moreover, many of these graduates lack the skills needed to fill available job vacancies. But the State is not just trying to increase the number of students who receive post-secondary training; it is also contemplating structural changes in the secondary system itself. In a report to the International Labor Organization, Yue

said the Chinese government "is conducting a pilot reform on the structure of secondary school education with a view to steadily transforming some secondary schools into vocational schools."

**Labor service companies** Some of the new job training is being provided by these rapidly emerging enterprises. Set up by government labor departments and factories, these companies, while not new, have been revived and may develop into an important institution in China's reformed labor system. At the start of last year, China had some 24,000 labor service companies, up from 800 in 1979. In that period, they provided jobs and/or job training to 5.7 million people. In 1983 alone, they set up 100,000 production and service units employing 2.9 million youths. Still, labor service companies mainly provide temporary jobs that are not highly respected.

**Foreign investment** Officials hope their new aggressive promotion of foreign investment in China will create jobs as it modernizes the country's industrial base. Low wage rates are prompting many foreign corporations to study how China might fit into their plans. (For a thorough discussion of labor issues in joint venture plants, *see* "Chinese Labor," by Jamie P. Horsley; *The CBR*, May–June 1984).

**Labor exports** As many as 40,000 Chinese work overseas, mainly on construction projects in the Middle East and Africa. While China has exported workers for more than 20 years, the practice has increased sharply in the last few years. So too have the foreign exchange receipts thereby earned. In fact, Chinese leaders probably seek overseas labor contracts more for the hard currency than for the relative drop-in-the-bucket impact on unemployment.

### *Diversification is the remedy for rural unemployment*

The effort to solve China's rural unemployment problem focuses not so much on distinct policies as a broad transformation of rural society. The two pillars of the transformation are a diversification of the rural occupational structure and a changed residence pattern calling for the creation of thousands of small towns and cities in rural areas.

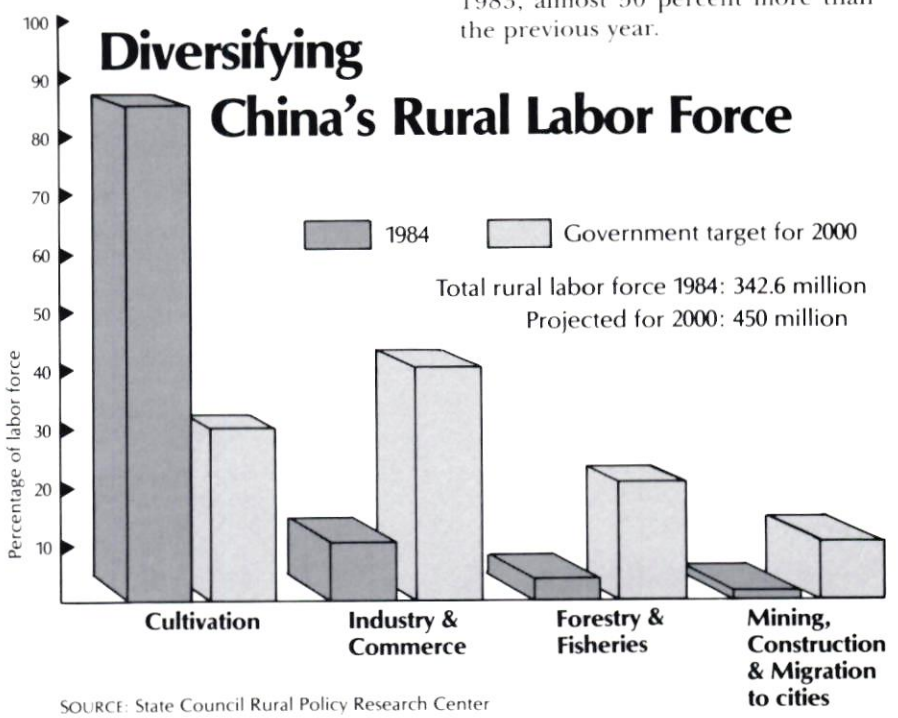
Changing the occupational structure rests on what might be called the "three nons." Within farming, the government encourages the growing of nongrain crops to satisfy the demands of industry and increasingly prosperous consumers. Within agriculture, the government is encouraging some peasants to take nonfarming jobs in animal husbandry, fisheries, forests, and other pursuits. And within rural society in general, many workers are expected to move into nonagricultural occupations such as industry, commerce, transport, construction, and other services.

Rural industries are not a new thing in China. Some 1.7 million rural enterprises already employ a reported 40 million people. During the Great Leap Forward of the late 1950s, leftist leaders promoted backyard iron furnaces throughout the countryside, a practice current leaders and most Western observers believe had disastrous consequences for the rural economy. But while Maoists promoted rural industries because they helped narrow the rural–urban income differential, today's leaders are explicit about their role in averting a rural unemployment crisis.

Modernization of the rural labor force clearly requires some concentration of the population. But only a few peasants will be allowed to migrate to China's already overcrowded cities. As labor expert Yue explains, "Under our present conditions, surplus rural labor need not turn to large and medium-sized cities for employment, but rather find jobs in widely spaced small towns that are gradually coming into being with the development of rural processing, building, and service industries." These small towns are to develop around market towns and are to become the political, economic, and cultural centers of the transformed Chinese countryside.

Chinese social scientists have drawn up targets for changing the rural employment structure by the year 2000. The chart below shows the current occupational structure in rural China and the more diversified labor force expected to evolve by the end of the century. This plan to transform the nature of rural society may be commensurate with the enormous problem of rural unemployment. But will it work?

The government has published various statistics indicating that the occupational and residential evolution it envisions is well underway. A survey of more than 30,000 peasant families in 28 provinces revealed that income from nonfarm activites is on the rise, averaging 18.7 percent of total income last year, up from 7.7 percent in 1978. The process is even further along in the rural areas surrounding China's major cities. And the expansion of rural commerce has been substantial: more than 400,000 commercial outlets in the countryside employed 7.8 million workers in 1983, almost 50 percent more than the previous year.




SOURCE: State Council Rural Policy Research Center

The government calls rural families that have varied their crop mix or taken up nonfarming activities "specialized households." But the term is a misnomer: such entrepreneurial families are actually more diversified than traditional farm families that "specialized" in growing only grain. Specialized households might specialize in one nongrain crop or one noncrop occupation, but are more likely to engage in a variety of activities. Two-thirds of the country's 25 million specialized households practice a mix of cropping and animal breeding.

Chinese peasants are also moving to small rural towns, according to government statistics. Farmers who migrated to towns reportedly make up more than 30 percent of the total township (formerly commune) population in some districts. These migrants are not all alike. Some still work on farms, "migrating" to towns temporarily to take advantage of markets. Others have established a more stable existence in towns, working in factories, shops, or service trades. The question of who should be permitted to take up permanent residence in the towns is a subject of sharp debate. One Chinese article called for letting the latter group register as official urban residents, but not the former. Official restrictions on migration to small cities are clearly loosening. But so far most such migration has been temporary, with the mobile workers retaining official residence in their rural villages. Brown University researchers Sidney and Alice Goldstein see temporary migration as a major mechanism for relieving rural unemployment while minimizing pressure on urban facilities.

### *Experts see no real alternative*

Foreign analysts' reactions to China's targets for transforming its rural labor force range from "very ambitious" to "wildly unrealistic." Walder notes that realizing even half the change officials hope for would still affect tens of millions of people. But he also speaks for many in asserting that, "If there's any large-scale migration to big cities, they will become disaster areas." Unfortunately, China's effort to expand rural employment faces other obstacles aside from the sheer enormity of the task.

**Who minds the farm?** The government maintains that as the rural labor force shifts to nonfarming activities it will be the most efficient farmers who remain as cultivators. But the opposite process seems more likely: as efficient farmers accumulate cash they will invest it in higher value nonfarm activities. This may promote the desired occupational shift, but also leaves the least efficient farmers in charge of growing China's food. An alternative possibility increasingly apparent in some parts of China involves a new division of labor between the sexes. Men are taking advantage of new nonfarm opportunities outside the village, leaving women to grow the crops.

**Migration** Many peasants are attracted to places larger than the small market towns in which some may now settle. Any loosening of the still-strict migration laws might have serious consequences. Even if migration is confined to small cities, their expansion will raise another problem: a reduction in China's arable land.

**Investment** The Chinese government says most of the investment capital needed to establish new rural businesses and industries must come from rural inhabitants themselves. University of Chicago's Johnson is not optimistic: "It's not feasible to rely only on rural sources of investment. In the recent past, the Chinese have done very well, but down the road they'll have to face the problem of transferring investment from urban to rural areas to employ people."

**Supplies** For his colleague William Parish, investment is less important than the question of how thoroughgoing the industrial reforms are. If the supply system becomes sufficiently market-driven, collective rural enterprises will be able to compete with State-run industries for supplies. This will enable small cities to grow and absorb labor. But if inflation accompanies reform, the State will come under pressure to intervene administratively and guarantee supplies to its own enterprises first.

### *Integrating cities and the countryside*

Thoughtful Chinese leaders recognize the relationship between the urban and rural unemployment problems. Some have expressed a hopeful if visionary policy in which economic integration of the two sectors sparks a business expansion that provides jobs for all. In this view, the new rural towns become links between urban industry and the rural farm economy. They process raw materials from the latter and perform ancillary industrial tasks for the former.

Underlying this vision are two important truths. First, China cannot copy its prosperous East Asian neighbors by achieving full employment through export-led growth. It may have an aggressive export policy, but world demand for the products China could make is not sufficient to employ all those needing jobs. Second, it follows that the onus is on China's internal market to employ people. A more prosperous countryside better integrated with urban industry might well generate enough demand to reduce unemployment.

A *People's Daily* commentator wrote last December, "There are 800 million people in our countryside. Even though we can export a portion of our industrial production and sell another portion in our cities, the greatest potential market is in the countryside." China's socialist reformers may be planning to crack a market foreign capitalists have sought to cultivate for some time. 完

*Photo courtesy of New China Pictures*

***The Chinese government promotes production of sideline crops as one way to reduce rural unemployment. Peasants on this east China farm tend tea.***

# Reforming Chinese Agriculture

## *The consequences of unanticipated consequences*

**Thomas P. Bernstein**

One of the puzzles of China's agricultural reforms, underway since 1978, is the extent to which they have been planned. Planning is, after all, a core component of socialism, and accordingly, the rural reforms should have followed some sort of blueprint. In a general sense, planning did occur. Broad strategic visions of progress were projected, and specific goals were related to means, such as raising output and incomes by stimulating individual incentives.

But the changes that have taken place in rural China were not planned in detail. Instead, there was a process of groping, of experimentation, and of "summing up of experience," as the Chinese phrase goes. A PRC economist put it well when he told me that the process was one in which "we felt our way, much as a man does who crosses a brook feeling for stones on which to step."

This approach has meant that many outcomes of the reforms have not been fully anticipated. It seems doubtful that anyone in the PRC could have predicted in 1978 what rural China would look like six years hence. To some extent, the reforms have taken on a life of their own, so neither can anyone predict today what the situation will be like five or 10 years from now.

Planning or no planning, the reforms have been a tremendous success. They brought about a dramatic improvement in the standard of living, as rural incomes more than doubled between 1978 and 1983. To be sure, the bitter poverty that once afflicted 100–150 million peasants has not been fully eliminated. Last October Party General Secretary Hu Yaobang disclosed that "we have not yet solved the problem of food and clothing for 60 million people in the rural areas," referring mainly to remote, mountainous villages. But on a national scale, agricultural output value has increased by 7.5 percent per year and total factor productivity, as calculated by the economist Carl Riskin, by about 5 percent per year. The rural reforms now serve as a source of inspiration for the urban industrial reforms announced at last October's Central Committee Plenum.

### *A threefold reform*

The agricultural reforms consist of three sets of changes. They can be broadly categorized as the introduction of diversification, decentralization, and specialization.

First, China's leaders sought to correct "leftist" abuses in the commune system by restoring and enlarging private plots and encouraging household sideline production. They raised prices paid by the State for grain and other crops and encouraged a measure of diversification by retreating from the costly policy of "grain as the key link." This enhanced production incentives but did not alter the existing collective framework.

The second set of changes, however, decentralized management responsibility down to the household level—a break with the core principle of collective farming. Initially introduced as an emergency measure to relieve acute poverty, household contracting spread rapidly as reformers came to recognize its popularity and effectiveness as an incentive mechanism. The underlying idea is that peasants are motivated to work harder and more effectively if the reward for individual effort is linked closely to final output. Even the lowest unit under the commune system, the production team with its 20–40 households, had not successfully achieved this goal in the past. After some experimentation, and intense debate within the Party, the household came to be recognized as the best unit to attain this purpose.

Under the household responsibility system, a family contracted with the production team to farm a plot of land. In return they met the State's procurement quota and paid the agricultural tax and a fee to the collective. The family retained any surplus product, and therein lay the incentive. It could sell this product to the State at the latter's higher above-quota price or on the open market.

Early this year, however, came startling news of still another major modification of this system, namely the abolition of the 30-year-old system of compulsory procurement quotas. This decision was the product of success: rapid growth of output had burdened the State with large amounts of grain and cotton it bought at above-quota prices, which proved difficult to sell even though unmet demand existed for higher quality grains and nongrain produce. The State is now shifting to a system of contracting with the peasants for purchase of a set amount of grain at fixed prices. The price of produce not purchased by the State on contract will be allowed to float in accordance with market demand. As Premier Zhao Ziyang has made clear, this changes the way the State regu-

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lates agriculture from an administrative to an economic approach. But it does not mean that the State is relinquishing its leading role.

The third, broadest set of changes now in progress involves a shift in Chinese agriculture from subsistence to commercial commodity production. To this end, the leadership aims at nothing less than unleashing the entrepreneurial talents of China's peasants. The government encourages peasants to seize opportunities to engage in commerce, take up service trades, and enter manufacturing. Prohibitions on business activity have been progressively lifted. Peasants can now acquire machinery and vehicles to transport goods locally and even nationally, and can set up businesses in towns or in the rural areas.

Peasants are also encouraged to pool their efforts. Land contracts can now be transferred from one household to another, facilitating the concentration of land in the hands of skilled farmers. Chinese policy makers promote new "economic combinations," such as partnerships, companies, and joint ventures between peasants and State or cooperative units (e.g., supply and marketing co-ops). A major goal is promotion of vertical integration. A "specialized household"—the term for rural entrepreneurs—might join with other households and expand the scope of its operations to include crop processing and distribution. Policy makers stress that such new forms of cooperation should emerge from the bottom up and will not be imposed from the top down, as collectivization was in the 1950s. But peasants may also attempt to expand their operations by hiring labor, sometimes explicitly, sometimes only if properly disguised by terms such as "labor exchange," "assistants," "apprentices," or "helpers."

As of early this year, 25 million families, about 14 percent of all rural families, had become specialized households, according to Chinese statistics. These families are viewed as the new role models for other peasants, especially those among them who earn more than ¥10,000 per year (average national per capita income in 1983 was ¥308). Policy makers view them as a "new productive force" and the key to rural modernization.

The new watchwords are specialization, commodity production, and enterprise. The reformers see a specialized labor force as the solution to China's immense problem of rural unemployment. Mao's communes provided jobs for all, but at the price of massive disguised underemployment. As labor productivity increases, surplus manpower must leave agriculture, yet not flood the already overcrowded large cities. Reformers hope such workers will find jobs in rural industry, commerce, and service trades.

### *Four unanticipated outcomes*

What kinds of unanticipated consequences have arisen as these reforms progressed? First, the revival of family farming contributed to a sharp rise in the rural birth rate, from 18.4 per 1,000 inhabitants in 1979 to 21.9 per 1,000 in 1982. Family prosperity now hinges on the availability of labor; hence, household contracting reinforced the traditional desire for sons. New opportunities to work in the nonagricultural sector may increase the desire for sons, since peasant families may now wish to emulate their Taiwan brethren by retaining one son on the farm and sending one to town. The decline in collective welfare support for elderly peasants without children has also contributed to the increased interest in larger families. Despite the urgency attached to reducing China's birth rate, policy makers evidently did not anticipate this response to the reforms. Only when planners became alarmed by the birth rate increase did enforcement of birth control intensify. This led to a reported reduction in the birth rate by 1983, but also to numerous reports of female infanticide.

Second, as peasant incomes rose, the enormous pent-up demand for houses exploded in a rural construction boom. New housing confirms the beneficial impact of the reforms, but policy makers became alarmed when houses began to encroach on the country's extremely scarce arable land—already shrinking because of industrial expansion and erosion—as well as on precious forestry resources. As in the case of increased birth rates, the authorities stepped in with tough new regulations and punishment aimed particularly at rural cadres deemed guilty of illegal appropriation of farmland.

Third, as the economic role of the family unit re-emerged, so too did popular religious customs, which had legitimated and fortified peasant social life prior to 1949. From the government's point of view, the unanticipated revival of "feudal" customs and superstitions was a highly undesirable side effect. The press expressed outrage when rural cadres and Party members participated in traditional rituals, such as when the "monstrous absurdity occurred of a commune Party secretary leading the 'armed expulsion of ghosts.' " The response was to "strengthen leadership and political education."

A fourth side effect of household contracting was strip farming, the division of fields into very narrow strips to ensure that each family gets the same amount of land of varying qualities. One of the arguments in favor of collectivization in the 1950s had been that it would end this wasteful practice. The State's response, announced early in 1984, has been to encourage transfer of contracts so as to promote concentration of land. Last November, *People's Daily* reported on the suburbs of Zhongshan, Guangdong Province, where 12.5 percent of the households now hold 40 percent of arable land, including fish ponds. The commentary praised this change, noting that in some places, households were farming almost half a hectare of land scattered in 10 different places.

Why were these problems not anticipated? Politics was probably a major cause. Focusing attention on potential adverse side effects would have given ammunition to Maoist factions resisting the reforms. For instance, anyone who suggested in 1979 or 1980 that household contracting would require long-term land contracts to motivate peasants to invest in their holdings would have been attacked as an opponent of socialism. Only in 1984, when the political climate had changed and reports of peasants "ripping off" the land for short-term gain began to circulate, did policy makers extend the duration of land contracts to 15 years or more.

Another reason is that China's bureaucracy has tended to emphasize vertical rather than horizontal communication, despite the coordinating role that Party committees are supposed to play. Thus agricultural reformers evidently didn't talk to birth

control planners when household contracting was launched. Staff work and research were also inadequate, in part due to the cessation of scholarly activity during the Cultural Revolution era.

In the last few years, steps have been taken to rationalize the bureaucracy and to improve analytical capabilities. Moreover, the reformers are more firmly in control of policy making than they were five years ago. All of this would suggest that fewer unanticipated consequences should now arise. New problems keep popping up, however, evidently to the surprise of the authorities. A recent example is the inadequacy of storage facilities resulting from spectacular increases in grain output. Another is difficulty in selling low-grade foodstuffs to consumers whose incomes now permit them to be more choosy. As Premier Zhao put it recently in discussing the abolition of procurement, "We never anticipated such a situation."

### *The problem of declining rural services*

The increase in individual responsibility has also lent urgency to the broader question of just what role local government and collectives should play in relation to household contractors and emerging rural entrepreneurs. The government has so far dealt with this touchy issue in an incremental, ad hoc fashion.

For instance, as household contracting took hold, the collectives' role in providing welfare services was weakened. Formerly, the communes provided such services as cooperative health care, welfare for households lacking in manpower, and support for the childless aged. Under the collective system, schools were also supported and assets accumulated, including small factories, irrigation equipment, and machinery. But when household contracting was introduced, collective assets were sometimes divided in irrational ways that adversely affected public welfare; in one case, peasants reportedly chopped up irrigation pipes to get their share. The dispersal of collective property was criticized by Hu Yaobang at the 12th Party Congress in 1982, an indication of its seriousness. As for services, they sometimes simply collapsed; in one instance reported from an Inner Mongolian district by American farmer-writer William Hinton, veterinary services disintegrated, leading to decimation of livestock.

Meanwhile, households continue to pay fees for the maintenance of services at the same time that these services are declining. In fact, if one effect of the reforms was to weaken collectives, a second one, paradoxically, enabled local officials—governmental and collective—to expand their power to exact funds from peasants. This development came to public attention in 1983, when the Chinese press began to criticize the imposition of "unreasonable burdens" on the peasants. Peasants were reportedly made to pay a wide range of fees and assessments that amounted to more than the official State agricultural tax.

The new system has begun to look like a striking replay of traditional practice. An extreme example came from Mianyang County, Hubei Province, where exactions climbed to ¥300 per household by 1982. For each mu of contracted land, ¥40–¥50 in miscellaneous charges were collected, while the agricultural tax amounted to only ¥7 per mu. (One mu equals .067 ha). As a result, almost 2,700 ha of arable land remained fallow, since it was not profitable for peasants to farm. In a Jiangsu county, the per capita burden of fees and assessments rose from ¥11 in 1978 to ¥49 in 1983. Local governments and collective units had a menu of 10 to 20 items for which fees were exacted, ranging from subsidies for cadres, whose

## AGRICULTURAL OUTPUT AND THE BIRTH RATE


*Rural reforms helped boost the value of agricultural output...*


*... but also created conditions for the unanticipated rise in the birth rate. Stricter birth control measures reversed the trend after 1982.*

SOURCE: State Statistical Bureau

Artwork by John M. Yanson

numbers increased rather than decreased, to local investment, education, birth control awards, Party meetings, movie rentals, and road maintenance. Local authorities felt free to impose higher charges since peasants were now able to pay.

Peasants have expressed bitter resentment of these practices. According to one commune survey, peasants were willing to pay to support the aged, army dependents, and households in difficulty, but felt charges for cadres and other purposes should either be reduced or eliminated. And indeed, the official solution has been curtailment of some local fees. In one Sichuan township, locally assessed burdens were reduced from ¥57 per mu to ¥19, largely by slashing the cadre force from 536 to 101, but also by using profits from locally run enterprises to pay for welfare.

The decline in rural services may just be a transitional problem. Some services formerly performed by teams and brigades have been turned over to specialized households that, for example, contract with their fellow peasants to spray fields with insecticide or maintain irrigation installations, all for a fee.

But other services and local personnel must be paid for through more conventional means. As long as the State agricultural tax remains low, some kind of local assessment must be made. Late last year the State Council empowered the new township governments—which administer the same area formerly under commune control—to levy an educational surtax to improve rural schools. But the State did this even as it condemned other local fees as burdensome.

A fundamental overhaul of the tax system may be the only viable solution. The State agricultural tax has declined as a percentage of output. Incomes are rising, sometimes spectacularly so. An equitable way must be found to tap this new wealth for public purposes, but the State is dragging its feet. In an interview last October, Hu Qili, then director of the Central Committee's General Office and a rising leader, acknowledged that farmers want a proper tax system to protect themselves from unreasonable exactions, but added that "we will consider this question sometime later." The government is reportedly reluctant to increase taxes, for fear that peasants will see it as a reversal of the reforms. But it must weigh this against opposition to a system that reminds many of traditional burdens on the peasantry. For the time being, this ramshackle system of ad hoc assessments and fees is likely to be maintained, together with the low official tax system.

### *Harassment of entrepreneurs*

Farmers are not the only victims of the traditional "tax" system's rebirth. In the absence of adequate legal and political protection, newly rich specialized households have also become targets for fees that essentially amount to extortion. Because of lingering "leftist" beliefs, the legitimacy of the newly rich is still in doubt. One way of establishing their credentials is to make contributions, both to the community and to individuals. Cadres in Hubei Province, for instance, have asked specialized households to donate money in honor of impending great occasions: "The 12th Party Congress is to be held, what are you ready to do to show your feelings?" Specialized households make these contributions as a form of insurance, just in case the Party line should change. Cadres occasionally feast in the homes of newly rich peasants, or squeeze what is in effect protection money from them.

Harassment by local officials also includes the tearing up of contracts, especially if cadres believe that peasants are making "too much" money from a deal. Entrepreneurial peasants may have to run a costly bureaucratic obstacle course, paying for a wide range of licenses and permits. Late last year *People's Daily* publicized the case of Liu Zuolun of Sichuan Province, a peasant who went into the transport business but found that to truck two loads of lumber 60 km he had to have 11 permits and pay a total of ¥5,500 in fees. These included administrative fees, an afforestation fee, a transport permit fee, a market management fee, a road construction and service fee, and other suspect fees. As a result he lost ¥1,800.

These cases of local power abuse have received wide publicity in the Chinese press, which generally takes the side of the peasants and rails against the obstacles facing entrepreneurs. Even so, stronger action seems to be needed. In numerous provinces regulations have been issued protecting the rights of specialized households. Regulations have been drawn up in Shaanxi and Guangxi provinces, which prohibit various forms of harassment, extortion, and persecution. Contractual security is also being enhanced, although it is difficult to see how county governments can cope with the immense number of contracts being signed in the villages. Local government, Party, and collective organizations are being reorganized and younger officials recruited. It is hoped that they will be more attuned to the new needs of the peasantry.

A major step to increase the security of specialized households was taken in April 1984 with a decision to recruit the best of them into the Communist Party. This will assure peasants that entrepreneurial activities are fully legitimate, and not just a fringe phenomenon tolerated for the moment. But recruitment of the newly rich is proceeding slowly, partly because of resistance from more orthodox Party members. Applicants from specialized households must demonstrate that they are not just engaged in the pursuit of wealth. They must display community spirit by assisting still-poor peasants or by making a contribution, such as building a school. Joining the Party is thus not a cost-free matter, although presumably it is a worthwhile investment.

If many members of richer households are recruited, questions about their effect on the Party's social base are bound to arise. "Newly rich peasants" may well be rich not simply in the monetary sense, but in the Marxist sense of owning means of production (other than land) and even hiring labor. When Shaanxi's first Party Secretary visited an enterprising hog farmer who had joined the Party, he told him, "You can hire an assistant if you want." Not long ago, such people would have been relegated to the ranks of the class enemy; now they are praised and encouraged. This makes good sense from the point of view of rural policy, but what will the long-term effect on the Party's character be? After all, despite the loosening of ideological restrictions, the Party still defines itself as the vanguard of the proletariat. Recruitment of members with wholly unproletarian social interest may at some point impair the Party's unity and capacity to lead.

*Rural reforms have expanded the power of local officials to exact funds from peasants, even as the provision of collective services has declined. The new system has begun to look like a striking replay of traditional practice.*

### *Local officials and entrepreneurs: a new combination?*

The relationship between local officials and peasant entrepreneurs may be evolving into something far more complex than simple harassment. Indeed, forms of collaboration between the two groups are developing in the Chinese countryside even as the antagonism between them continues.

Some of these forms of cooperation serve a positive function for commerce. For instance, the assistance of those with power and connections is often essential to unclog channels of commercial circulation. Rural producers have long complained about shortages of inputs, such as chemical fertilizer, small machinery, and pesticides. Peasants must also deal with inadequate market outlets due to transportation bottlenecks and organizational blockages. Many stories have appeared detailing difficulties peasants have had in marketing their products.

The answer to these problems is to further liberate the market from governmental restrictions and monopolies, and this is indeed the direction of policy. One telling example is the recent decision to abolish compulsory procurement. But although markets will play an increasingly important role in the rural economy, the State retains substantial influence. Hence peasants will continue to cope by developing informal ties with local government officials and cooperative cadres. "Friends with connections" can secure needed supplies. A group of Jiangsu peasants complained that, "without backdoor contacts, buying a gallon of fuel seems to be harder than shinnying up the sky." Moreover, if official patronage proves essential to running an enterprise, then cadres themselves might find it profitable to engage in business, using their contacts. In one Shanxi county, nearly half of the 21,000 specialized households were headed by either brigade or team cadres, or men who had once served in these positions. In Jiangsu, an investigation of four rural towns showed that leading Party members and State cadres used relatives to buy up "urgently needed commodities," which they then sold for a profit. Informal and illicit deals involving officials and specialized households as well as ordinary peasants thus appear to be proliferating in the countryside.

Direct involvement of officials in business is not, however, allowed. Tough new regulations have been issued. For instance, in Anhui Province, "no Party or government organizations are permitted to run enterprises or enter into partnership with the people with public funds, bank loans, or funds raised by the cadres." In Guangxi, "it is forbidden to force specialized households to become shareholders or to organize sham joint ventures in which people get rich without working." Such rules, and the government's admission that they are not always obeyed, give some hint of what must be happening. Indeed, it may not be too farfetched to speak of a convergence of the newly emerging economic elite with the local political elite. It remains to be seen whether prohibitions and further expansion of markets can prevent this convergence from becoming entrenched.

### *Two ways to muddle through*

In the future, as the impact of the reforms deepens, new questions and unforeseen consequences such as those already described are bound to arise. Take migration, for instance. As more and more peasants go to town to do business, what impact will this have on peasant families and on peasant interest in permanently moving to urban locations? Or take investment. As policy makers see it, peasants themselves must provide the massive sums needed to sustain the current high rates of agricultural growth. How will the State respond if peasant investment takes forms it considers undesirable?

These examples suggest that making rural policy will become more rather than less complex. It may well be that the complexity of rural change provides the best explanation for the failure to anticipate problems. Despite the fact that planning and research tools are being refined, the task of anticipating the side effects of rural policy will become more difficult, especially if one takes China's immense diversity into account. Thus, planners will continue to impose certain priorities, but will otherwise muddle through as they have in the past. They will continue reacting to the unanticipated consequences of the changes they initiate, rather than preparing for anticipated ones.

When unanticipated consequences arise, Chinese leaders can either adopt a strategy of suppression or a strategy of adaptation. In other words, they can seek to deal with undesirable consequences by reimposing control, or by further loosening restrictions to accelerate the reform process. These two choices are not mutually exclusive, but they do reflect conflicting assumptions about how people should behave. The first requires people to subordinate their personal interests to those of the collective, as in the case of birth control. The second permits people to pursue their self-interest on the assumption that their actions will also contribute to the public good. The first represents the Maoist approach; the second is a basic premise of the current reform program.

Even the reformers know that they must continue to promote a binding concept of the public good. Not only is China still a Marxist system, but major problems that require collective solutions continue to arise. How reformers balance these conflicting assumptions as they make rural policy will help determine the shape of the rural changes to come. 完

# 会员动态

## NEW JOINT VENTURES STRESS KELLOGG'S COMMITMENT

The M. W. Kellogg Company, a member of the Signal group of companies, closed out 1984 and began 1985 with a flurry of promising new deals with China. The Houston-based engineering and construction firm has signed no fewer than five joint ventures with various Chinese entities in a variety of business lines.

One of the new joint venture companies will develop an extensive expatriate residential community near Beijing, complete with housing, an international school, recreational facilities, and the necessary municipal infrastructure. Kellogg will be involved with the Chinese in planning the community, arranging financing, architectural design, and actual construction. The second agreement creates a consulting company to provide services for other foreign firms seeking to enter joint ventures with Chinese organizations. The firm will search for potential business partners, perform feasibility studies, and provide advice on investment and contract negotiations.

Kellogg's partner in these two ventures is the China National Technical Import Corporation. A third, signed with the Ministry of Machine-Building Industry, will install a coal gasification facility in Heilongjiang Province. The plant will produce reducing gas for steel production at the Fula'erji Heavy Machinery Works. The fourth is a joint equity venture with the international subsidiary of China National Petrochemical Corporation (SINOPEC) to provide engineering, construction, and technology transfer services for new petrochemical and energy processing plants inside and outside China. Kellogg and SINOPEC International are each contributing $1.5 million in equity and will share equally in the new firm's profits and management. Kellogg's fifth new venture calls for equity participation in an engineering and construction company that will perform projects in the chemicals and pharmaceuticals sectors. Its partner in this deal is the China Chengdu Chemical Engineering Corporation.

Kellogg executives say satisfaction with the 10 ammonia fertilizer plants the firm sold in the 1970s gave China the confidence to strike these deals with Kellogg. The depth of the American company's commitment to China shows that the confidence is mutual.

## FIRST INTERSTATE BANK ENTERS METALS JOINT VENTURE

First Interstate Bank has become one of five partners in the new Beijing-based China International Nonferrous Metals Leasing Co., Ltd., and thus one of the first US banks to form a joint venture in China.

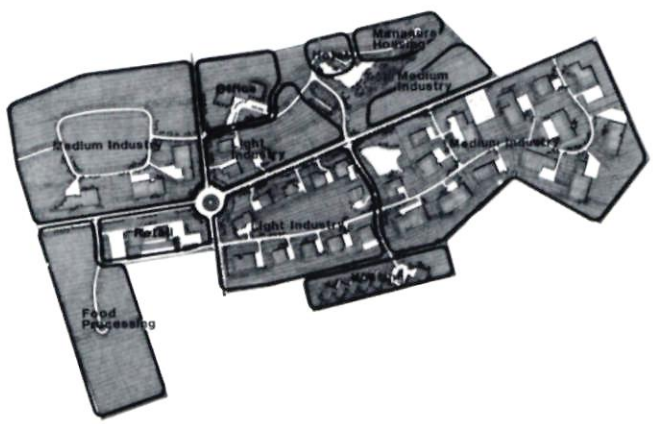
The new venture will import capital equipment from the United States, France, Japan, and other countries and lease it to Chinese and joint venture enterprises that mine, refine, and fabricate nonferrous metals. Under the agreement signed last December, the equipment imports will be financed by foreign government export credit programs. Leases will be denominated in foreign currency. The new company has received its business license and officially opens later this year, but First Interstate Vice-President Edith Lim says the partners are already talking with equipment manufacturers. The bank utilizes its First Interstate Trading Co. to connect with equipment exporters.

First Interstate Bank holds a 20 percent stake in the new venture. Its partners include China National Nonferrous Metals Industry Corp., Bank of China Trust and Consultancy Co., Industrial and Commercial Bank of China, and Banque Nationale de Paris. The venture can look forward to brisk business: the Chinese government plans on doubling the nation's nonferrous metals production capacity by 1990.

First Interstate joined the National Council in 1974 under the name United California Bank. First Interstate is now the seventh largest banking company in the United States; it is headquartered in Los Angeles and has maintained a representative office in Beijing since 1983.

## MORRISON-KNUDSEN HELPS PLAN GUANGDONG INDUSTRIAL PARK

Morrison-Knudsen International Company, Inc. of Boise, Idaho, is helping the Zhuhai special economic zone plan an industrial estate designed to attract foreign investors. The company's H. K. Ferguson International unit of Cleveland, Ohio, completed an engineering study for the SEZ's Beiling industrial estate early this year. According to company representatives, the study marks the first involvement of its kind by a US company in any of China's




*Architect's depiction of H. K. Ferguson's plan for Phase 1 of the Beiling industrial estate in Zhuhai special economic zone.*

# 舊朋友
# OLD FRIENDS

## Our Foundation For Future Business in China

*"Old Friends", an appelation won by Kellogg in China through 12 years of work and activities performed in mutual cooperation and understanding.*

During this period, Kellogg has provided 20 petrochemical plants to the People's Republic of China valued well in excess of $1 billion and recently signed for the provision of two more, and the modification of others.

Kellogg has maintained a permanent office in Beijing since 1975. It is staffed at the Vice Presidential level.

In 1985 Kellogg entered into agreements to form 4 joint venture companies within China, extending and strengthening a solid relationship and proving our commitment as partners in China's growth. These include:

- A planned expatriate community calling for the initial installation of 250 housing units and the capability of extensive expansion.
- A consulting organization to encourage and expedite foreign investment in China and the export of Chinese products and services.
- An engineering and construction company to operate within and outside of China.
- The installation of a coal gasification industry and the provision of such clean fuel technology throughout China.

This commitment includes the investment of money, manpower and technology. The resources and capabilities of Kellogg are backed by a publicly stated commitment at the highest levels of Kellogg Rust management and its parent, The Signal Companies, Inc.

The Kellogg joint ventures present opportunities for other companies to participate in the industrial development of China.

*Interested managements are invited to write Mr. Douglas D'Albertson at either our Houston or Beijing offices.*

## The M.W. Kellogg Company

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Beijing, People's Republic of China

**Kellogg Far East, Inc.**
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09-04 Liat Towers
Singapore 0923

four SEZs or 14 open port cities.

Zhuhai is immediately north of Macao and less than 40 miles from Hong Kong. The zone's 1,000-acre Beiling industrial estate is being developed by Everbright Holdings Co. Ltd., the Hong Kong-based Chinese company that hired Morrison-Knudsen to prepare the study. The estate is to include a retail and office complex, business and training facilities, residences, and an Everbright office in addition to industrial facilities. H. K. Ferguson's plan provides technical and financial data on land use, infrastructure, and transport services to support these activities.

Zhuhai developers hope Beiling will attract foreign investors in industries such as food processing, electronics, plastics, construction vehicles, and light metal fabrication. Morrison-Knudsen is also advising Everbright on marketing strategies to bring the zone's natural advantages and business incentives to the attention of potential investors.

## GENERAL ROBOTICS SELLS COMPUTERS

General Robotics Corporation has dealt with China for less than three of the firm's 11 years in existence. But China already accounts for 40 percent of the Wisconsin-based computer manufacturer's burgeoning worldwide sales.

GRC's first China deal was for the sale of 30 minicomputer systems to the Zhejiang Import and Export Corp. in Hangzhou. It has since sold a wide range of computer products to various Chinese enterprises. Last December, GRC shipped a computer-aided design system to the Huanan Computer Corp. in Guangzhou. It is implementing technology transfer agreements with both Huanan and a factory in Tianjin, and hopes to initial joint venture agreements for more ambitious projects with these plants in a few months. In a recent contract, GRC will supply 200 personal computers for use throughout China under a $2.5 million World Bank loan to the Ministry of Agriculture. And the company is taking advantage of Wisconsin's sister-state relationship with Heilongjiang Province to pursue business opportunities there.

Carl and Barbara Pick founded General Robotics after finishing graduate school in 1974. It began as a computer engineering and design consulting firm, but has developed into a global manufacturer of high-performance computer products. Barbara Pick, who first visited China in 1982, has had long enough to develop a balanced view: "Doing business with China is difficult, time-consuming, and expensive at both ends—the US and China. But when you're successful, that business is large-volume and profitable." Pick's main complaint concerns slow processing of export applications on the US side: "Changes in regulations in China are making doing business easier; changes in the US regulations are making it harder."

—Tom Engle

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The China Business Review *welcomes suggestions for member company profiles to appear in this column. If interested, please send a draft of 200–400 words detailing an aspect of your company's China activities to: Associate Editor,* The China Business Review, *1050 17th Street, N.W., Washington, D.C. 20036.*

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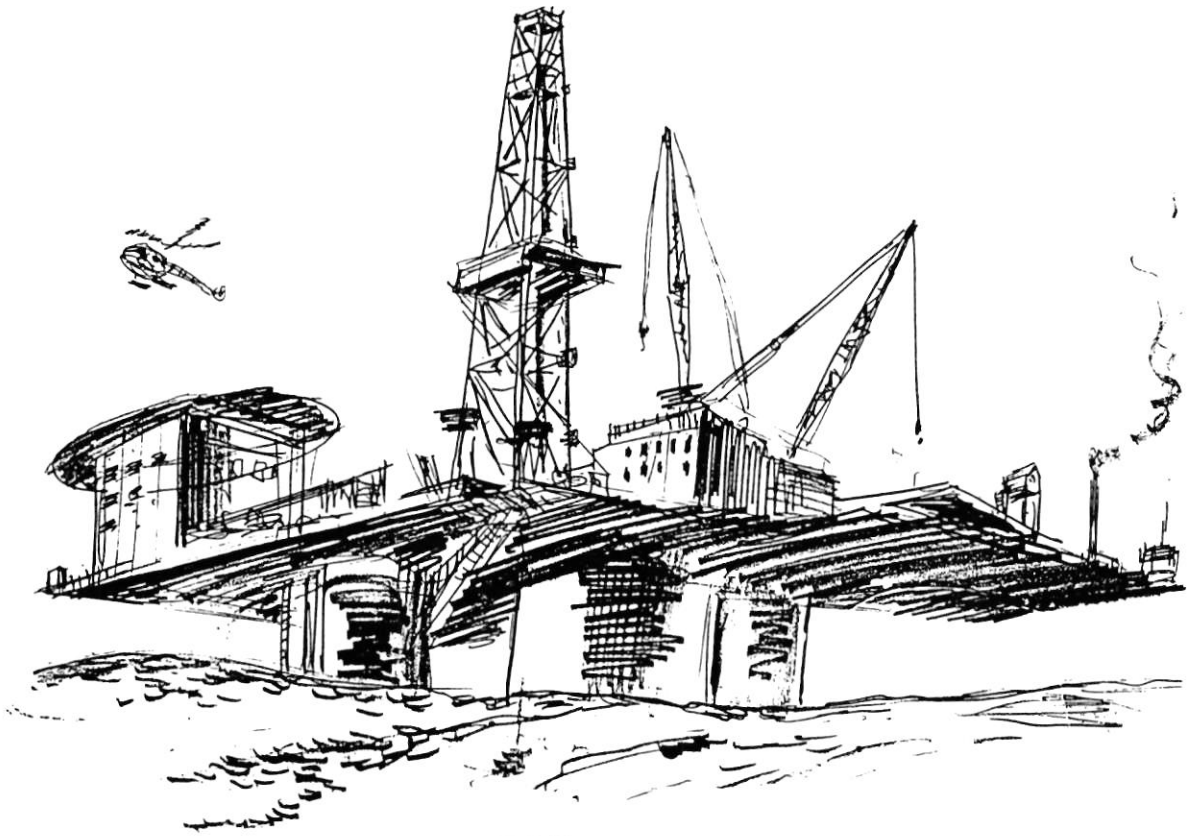
# What's China Consultants International doing about energy business in China?



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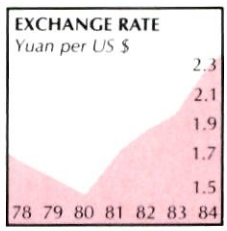
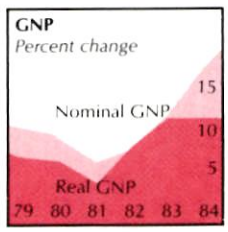
# 中國數據

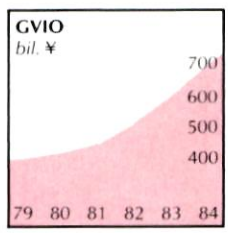
## KEY INDICATORS

| | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | % change 1984/83 |
|---|---|---|---|---|---|---|---|---|
| Exchange rate (yuan per US $) | 1.6836 | 1.5550 | 1.4984 | 1.7050 | 1.8887 | 1.9772 | 2.3200 | −17.3 |
| GNP* (bil. ¥, current prices) | 337.4 | 374.7 | 413.3 | 441.2 | 477.2 | 537.3 | 630.8 | 17.4 |
| (bil. $, current prices) | 200.4 | 241.0 | 275.8 | 258.8 | 252.7 | 271.7 | 271.9 | 0.1 |
| GNP deflator* (1980=100.0) | 92.9 | 96.6 | 100.0 | 101.8 | 101.7 | 102.2 | 107.1 | 4.8 |
| Population (year-end, million) | 969.6 | 982.2 | 994.9 | 1,007.8 | 1,012.0 | 1,025.0 | 1036.0 | 1.2 |
| GNP per capita (current $) | 206.7 | 245.4 | 277.2 | 256.8 | 249.7 | 265.1 | 262.5 | −(1.0) |
| Gross value of industrial output (bil. ¥, current prices) | 406.7 | 448.3 | 489.7 | 512.0 | 550.6 | 608.8 | 697.6** | 14.6 |
| *Of which:* | | | | | | | | |
| Heavy industry | 231.4 | 252.5 | 258.8 | 248.3 | 274.0 | 313.4 | 362.1** | 15.5 |
| Light industry | 175.3 | 195.8 | 230.9 | 263.7 | 276.6 | 295.4 | 335.5** | 13.6 |
| Gross value of agricultural output (bil. ¥, current prices) | 156.7 | 189.6 | 218.0 | 246.0 | 278.5 | 312.1 | 356.7** | 14.3 |
| Grain output (million metric tons) | 304.75 | 332.12 | 320.52 | 325.02 | 353.43 | 387.28 | 407.20 | 5.1 |
| Cotton output (million metric tons) | 2.167 | 2.207 | 2.207 | 2.968 | 3.598 | 4.637 | 6.077 | 31.1 |
| Consumer price index (annual % change) | 0.7 | 2.0 | 6.0 | 2.4 | 2.0 | 1.9 | 2.7 | — |
| State budget revenues (bil. ¥) | 112.1 | 110.3 | 108.5 | 106.4 | 112.4 | 124.9 | — | — |
| State budget expenditures (bil. ¥) | 111.1 | 127.4 | 121.13 | 109.0 | 115.3 | 129.3 | — | — |
| Currency in circulation (billion ¥) | 21.2 | 26.8 | 34.6 | 39.6 | 43.9 | 53.0 | — | — |

* From Projections Report, Spring 1984, Albert Keidel, Rock Creek Research Inc., Washington, DC.
** Preliminary Statistics, Albert Keidel, Rock Creek Research Inc.



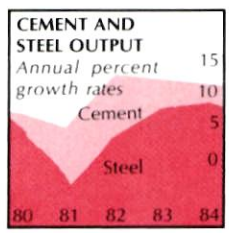



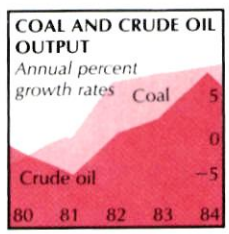



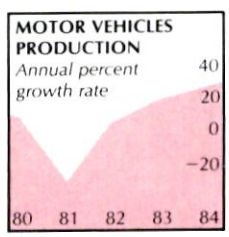

## INDUSTRIAL PRODUCTION

(Million metric tons unless otherwise indicated)

| | 1979 | 1980 | 1981 | 1982 | 1983 | % change 1983/82 | 1984 | % change 1984/83 |
|---|---|---|---|---|---|---|---|---|
| Cement | 73.9 | 79.9 | 82.9 | 95.2 | 108.3 | 13.7 | 121.1 | 11.8 |
| Chemical fertilizer | 10.65 | 12.32 | 12.39 | 12.78 | 13.79 | 7.9 | 14.82 | 7.5 |
| Chemical insecticides (thousand metric tons) | 537.0 | 537.0 | 484.0 | 457.0 | 331.0 | −27.6 | 310.0 | −6.8 |
| Coal | 635.0 | 620.0 | 622.0 | 666.0 | 715.0 | 7.4 | 771.6 | 7.9 |
| Crude oil | 106.15 | 105.95 | 101.22 | 102.12 | 106.07 | 3.9 | 114.53 | 8.0 |
| Electricity (billion kilowatt hours) | 282.0 | 300.6 | 309.3 | 327.7 | 351.4 | 7.2 | 374.6 | 6.6 |
| Ethylene (thou. tons) | 434.9 | 489.9 | 504.8 | 564.9 | 653.7 | 16.1 | 647.5 | −1.0 |
| Locomotives (units) | 573 | 512 | 398 | 486 | 589 | 21.2 | 658.0 | 11.7 |
| Machine-made paper and paperboard | 4.93 | 5.35 | 5.40 | 5.89 | 6.61 | 12.2 | 7.14 | 8.0 |
| Medium and large tractors (thou. units) | 125.6 | 97.7 | 52.8 | 40.3 | 37.0 | −7.5 | 39.7 | 7.3 |
| Motor vehicles (thou. units) | 185.7 | 222.3 | 175.6 | 196.3 | 239.8 | 22.4 | 314.5 | 31.2 |
| Natural gas (billion cubic meters) | 14.51 | 14.27 | 12.74 | 11.93 | 12.21 | 2.3 | 12.41 | 1.6 |
| Pig iron | 36.7 | 38.0 | 34.2 | 35.5 | 37.4 | 5.3 | 40.0 | 7.0 |
| Plate glass (million standard boxes) | 23.3 | 27.7 | 30.6 | 35.5 | 41.7 | 17.5 | 47.4 | 13.7 |
| Power generating equipment (thou. kw) | 6,212.0 | 4,193.0 | 1,395.0 | 1,645.0 | 2,740.0 | 66.6 | 4,650 | 69.8 |
| Rolled steel | 24.97 | 27.16 | 26.70 | 29.02 | 30.72 | 5.9 | 33.71 | 9.7 |
| Rubber tires | 11.7 | 11.5 | 7.3 | 8.6 | 12.7 | 47.1 | 15.3 | 20.5 |
| Steel | 34.48 | 37.12 | 35.60 | 37.16 | 40.02 | 7.7 | 43.37 | 8.4 |
| Walking tractors (thou. units) | 317.5 | 217.9 | 198.9 | 298.3 | 497.7 | 67.1 | 670.5 | 34.7 |



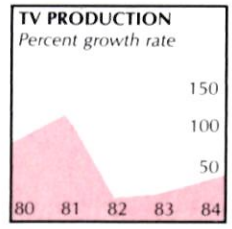



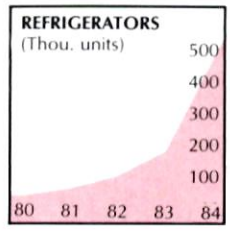



## CONSUMER GOODS PRODUCTION

(Million units unless otherwise indicated)

| | 1979 | 1980 | 1981 | 1982 | 1983 | % change 1983/82 | 1984 | % change 1984/83 |
|---|---|---|---|---|---|---|---|---|
| Bicycles | 10.09 | 13.02 | 17.54 | 24.20 | 27.58 | 14.0 | 28.6 | 3.6 |
| Sewing machines | 5.87 | 7.68 | 10.39 | 12.86 | 10.88 | −15.5 | 9.32 | −14.3 |
| Wristwatches | 17.07 | 22.16 | 28.72 | 33.01 | 34.69 | 5.1 | 36.44 | 5.1 |
| TV sets | 1.33 | 2.49 | 5.39 | 5.92 | 6.84 | 15.5 | 9.96 | 45.6 |
| Radio sets | 13.81 | 30.04 | 40.57 | 17.24 | 19.99 | 16.0 | 21.86 | 9.4 |
| Cameras (thou. units) | 238.0 | 373.0 | 623.0 | 742.0 | 926.0 | 24.8 | 1,267.8 | 36.9 |
| Light bulbs | 850.0 | 946.0 | 966.0 | 1,073.0 | 1,249.0 | 16.8 | 1,392.0 | 11.8 |
| Cloth (billion meters) | 12.15 | 13.47 | 14.27 | 15.35 | 14.88 | −3.1 | 13.40 | −10.0 |
| Silk textiles (million meters) | 663.5 | 759.0 | 835.0 | 914.0 | 999.0 | 9.3 | 1,137.0 | 13.8 |
| Beer (thou. tons) | — | 688.0 | 910.0 | 1,170.0 | 1,630.0 | 39.3 | 2,191.1 | 34.4 |
| Cassette recorders (thou. units) | — | 743.0 | 1,546.0 | 3,471.0 | 4,977.0 | 43.4 | 7,480.0 | 50.4 |
| Household washing machines (thou. units) | — | 245.0 | 1,281.0 | 2,533.0 | 3,659.0 | 44.5 | 5,783.7 | 58.1 |
| Household refrigerators (thou. units) | — | 49.0 | 55.6 | 99.9 | 188.5 | 88.7 | 537.3 | 185.0 |



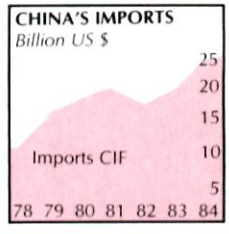




## CHINA'S FOREIGN TRADE

| | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | % change 1984/83 |
|---|---|---|---|---|---|---|---|---|
| Exports (bil. ¥, fob) | 16.79 | 21.17 | 27.12 | 36.76 | 41.43 | 43.85 | 58.06 | 32.5 |
| (bil. $, fob) | 9.97 | 13.61 | 18.10 | 21.56 | 21.94 | 22.16 | 25.03 | 13.0 |
| Imports (bil. ¥, cif) | 18.75 | 24.39 | 29.88 | 36.77 | 35.77 | 42.17 | 62.06 | 47.1 |
| (bil. $, cif) | 11.74 | 15.69 | 19.94 | 21.57 | 18.94 | 21.32 | 26.75 | 25.5 |
| Total trade (fob/cif) | 35.54 | 45.56 | 57.00 | 73.53 | 77.20 | 86.02 | 120.12 | 39.7 |
| | 21.11 | 29.30 | 38.04 | 43.13 | 40.88 | 43.48 | 51.78 | 19.1 |
| Total reserves (period end, bil. $) | 4.03 | 6.08 | 10.04 | 10.61 | 15.93 | 19.14 | 20.10* | 5.0 |
| *Of Which:* | | | | | | | | |
| Foreign exchange | 1.56 | 2.15 | 2.26 | 4.77 | 11.13 | 14.34 | 16.00* | 11.6 |
| Gold** (bil. $) | 2.47 | 3.93 | 7.78 | 5.84 | 4.80 | 4.80 | 4.10* | −17.1 |
| Gold reserves (million fine troy ounces) | 12.8 | 12.8 | 12.8 | 12.7 | 12.7 | 12.7 | 12.7* | 0.0 |

* Year-end projection based on January-November data.

** Gold valued at current market prices based on IMF period average commodity price indices.


## FOREIGN TRADE WITH SELECTED COUNTRIES

(Million US dollars)

| | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | % change 1984/83 |
|---|---|---|---|---|---|---|---|---|
| **United States** | | | | | | | | |
| Exports (fas) | 823.6 | 1,716.5 | 3,749.0 | 3,598.6 | 2,904.5 | 2,173.1 | 3,004.0 | 38.2 |
| Agricultural) | (565.0) | (492.1) | (2,279.4) | (2,112.4) | (1,707.8) | 544.4 | 611.5 | 12.3 |
| Nonagricultural | (258.6) | (724.4) | (1,469.6) | (1,486.2) | (1,196.7) | 1,639.7 | 2,392.5 | 45.9 |
| Imports (customs value) | 324.1 | 592.3 | 1,058.3 | 1,895.3 | 2,283.7 | 2,244.1 | 3,064.8 | 36.6 |
| Total | 1,147.7 | 2,308.8 | 4,807.3 | 5,493.9 | 5,188.2 | 4,417.2 | 6,068.8 | 37.4 |
| Share of China's total two-way trade | 5.4 | 7.9 | 12.8 | 12.7 | 12.7 | 10.2 | 11.7 | — |
| **Japan** | | | | | | | | |
| Exports (fob) | 3,074 | 3,674 | 5,109 | 5,075 | 3,500 | 4,918 | 7,210 | 46.6 |
| Imports (cif) | 2,045 | 2,933 | 4,346 | 5,283 | 5,338 | 5,089 | 5,950 | 16.9 |
| Total | 5,119 | 6,607 | 9,455 | 10,358 | 8,838 | 10,009 | 13,160 | 31.5 |
| Share of China's total two-way trade | 24.2 | 22.6 | 25.1 | 24.0 | 21.6 | 23.0 | 25.4 | — |
| **Hong Kong** | | | | | | | | |
| Exports (fob) | 63 | 382 | 1,249 | 1,957 | 1,954 | 2,495 | 5,000 | 100.4 |
| Imports (cif) | 2,249 | 3,021 | 4,401 | 5,264 | 5,431 | 5,847 | 7,200 | 23.1 |
| Total | 2,312 | 3,403 | 5,650 | 7,236 | 7,336 | 8,342 | 12,200 | 46.2 |
| Share of China's total two-way trade | 10.9 | 11.6 | 15.1 | 16.8 | 17.9 | 19.2 | 23.6 | — |
| **W. Germany** | | | | | | | | |
| Exports (fob) | 995 | 1,493 | 1,145 | 1,017 | 853 | 1,075 | 1,001* | −7.4 |
| Imports (cif) | 367 | 534 | 808 | 769 | 702 | 768 | 853* | 11.1 |
| Total | 1,362 | 2,027 | 1,953 | 1,786 | 1,555 | 1,843 | 1,854* | 0.6 |
| Share of China's total two-way trade | | | | | | | | |
| **Canada** | | | | | | | | |
| Exports (fob) | 442 | 507 | 742 | 776 | 1,005 | 1,189 | 913* | −30.2 |
| Imports (fob) | 83 | 143 | 132 | 183 | 165 | 199 | 267* | 34.2 |
| Total | 525 | 650 | 874 | 959 | 1,170 | 1,388 | 1,180* | −17.6 |
| Share of China's total two-way trade | | | | | | | | |

* Year-end projection based on January-November data.




SOURCES: State Statistical Bureau, Beijing; IMF, *International Financial Statistics*; IMF, *Direction of Trade Statistics*; National Council for US-China Trade, and Rock Creek Research Inc.

# 中外贸易

**Jennifer Little**
*Research Assistant*

The following tables contain recent press reports of business contracts and negotiations exclusive of those listed in previous issues. Joint ventures, licensing arrangements, and other forms of business arrangements are included if classified as such in Chinese and foreign media reports. For the most part, the accuracy of these reports is not independently confirmed by *The CBR*.

National Council members can contact the library to obtain a copy of news sources and other available background information concerning the business arrangements appearing below. Moreover, member firms whose sales and other business arrangements with China do not normally appear in press reports may have them published in *The CBR* by sending the information to the attention of Jennifer Little.

中外贸易

## CHINA'S IMPORTS THROUGH JANUARY 31

| Foreign Party/ Chinese Party | Product/Value/ Date Reported |
|---|---|
| **Agricultural Commodities** | |
| Rayonier Co., subsidiary of ITT (US)/CITIC | Signed a deal to purchase 1.7 million cubic meters of US standing timber. |
| (Indonesia) | Cashew nuts. $700,000. 12/10/84. |
| (Argentina) | 400,000 tons of wheat. 1/12/85. |
| International Fund for Agricultural Development/Hubei | Lent Hubei $15 millon to develop fresh water fisheries and $10 million for cattle and chicken raising and citrus cultivation industries. 1/16/85. |
| Sarawak Timber Industry Development Corp. (Malaysia) | Signed an agreement to sell logs. $562,000 (M$1.4 million). 1/17/85. |
| **Agricultural Technology** | |
| (Canada) | Signed an agreement to provide a grant to improve grain seed production in Heilongjiang. $828,000 (C$1.09 million). 11/23/84. |
| (Canada) | Signed two memoranda to upgrade two agricultural institutes of higher learning in Heilongjiang. 12/28/84. |
| **Chemicals and Chemical and Petrochemical Plants and Equipment** | |
| Dyno Industries (Norway) | Won a contract for equipment and know-how for an industrial adhesives factory to be built in Nei Monggol; two additional orders forthcoming. 10/1/84. |
| Klockner Industrie-Anlagen GmbH and Hartung, Kuhn & Co. (W. Germany)/Beijing Economic Development Corp. | Received an order to engineer, supply, erect and commission a complete pressure quenching facility for a gas plant. 11/84. |
| Tecnicas Reunidas SA and Centunion SA (Spain) | Have agreed to study the feasibility of building an oil refinery in the Meizhou Bay area, Fujian. 11/2/84. |
| Kansai Chemical Industry Co. (Japan) and Florida International Trading Co. (US) | Will sell super-grade lubricant oil. 11/15/84. |
| Babcock Woodall-Duckham (UK) | Will assist in the construction of a gas production factory in Dalian. 11/16/84. |
| Mitsubishi Heavy Industries and Nissho Iwai (Japan)/TECHIMPORT | Signed a contract to construct a linear low density polyethylene plant at the Daqing Petrochemical Works. $32.9 million (J¥8 billion). 11/27/84. |
| Niigata and Marubeni (Japan) | Will supply equipment for an acrylonitrile monomer plant at Daqing. 12/3/84. |
| Chemtex (US), Kawasaki Heavy Industries and Nichimen (Japan)/ TECHIMPORT | Won a contract to supply an acrylic fiber complex at Daqing. $70 million. 12/3/84. |
| Marubeni Corp. (Japan) | Equipment for an acetic acid plant at Daqing. $5 million. 12/3/84. |
| Drynamels (UK)/Anyang Bicycle Corp., Henan | Scratch-resistant powder coatings. 12/5/84. |
| Hoechst AG (W. Germany)/SINOPEC | Signed an agreement to study cooperative projects. 12/6/84. |
| Rochester Midland Corp. (US) | Signed a memorandum of understanding to manufacture water treatment chemicals and a letter of intent to produce specialty chemicals. 12/17/84. |
| M. W. Kellogg, subsidiary of Signal Cos. Inc. (US) | Signed contracts to: 1) modernize an ethylene chemical plant in Gansu, $50 million; and 2) construct a coal gasification plant, $30 million. 12/20/84. |
| Japan Steel Works Ltd. | Has been contracted to provide equipment and engineering services for a coal gasification plant located in Changchun, Jilin. $1.6 million. 12/20/84. |
| China America International Engineering Ltd. (US—PRC joint venture)/ Shanghai Gas Corp. | Signed a deal to construct the Shidongkou Gas Works to be located in northern Shanghai. 1/22/85. |
| **Construction and Construction Materials and Equipment** | |
| Burlington Quarries (UK)/ Zhumshen Museum | Received an order for 30,000 sq. ft. of Cumbrian slate. 11/10/84. |
| SOS-Kinderdorf International/Ministry of Civil Affairs, Urban Social Welfare Dept. | Signed an agreement to build two 20-home orphanages in Tianjin and Yantai. $800,000 donation. 11/14/84. |
| P. T. Katingan Timber Co. (Indonesia), subsidiary of Mitsui Overseas Forestry Development Co. | 7,000 cubic meters of plywood. $1.8 million (J¥430 million). 11/20/84. |
| Sumitomo Group (Japan)/ Everbright Industrial Co. | Signed an agreement to cooperate on large-scale investment projects. 11/22/84. |
| Duncan Halliburton (US)/ TECHIMPORT | Two cement trucks and spare parts for the central China oil fields project. $1.6 million. 12/84. |

NA = Not available.
NOTES: Contracts denominated in foreign currencies are converted into US dollars at the most recent monthly average rate quoted in *International Financial Statistics (IMF)*. Contracts concluded over two months ago are also included if they were not reported in the last issue of *The CBR*.

| | |
|---|---|
| Nikken Sekkei Ltd. (Japan) and Sobel-Rothe Ltd. (US)/Beijing Institute of Nuclear Engineering | Will jointly design the China World Trade Center to be located in Beijing. 12/11/84. |
| Ampex and M. W. Kellogg, subsidiaries of Signal Cos. (US)/ TECHIMPORT | Signed an agreement to set up an expatriate residential community near Beijing. 12/13/84. |
| Mitsui Construction Co. Ltd. (Japan)/Shanghai Donghu Joint Co. | Will construct the 28-story Ruijin Mansion to serve as an office/apartment building for foreign firms and businessmen. 12/24/84. |
| Domes America Inc. (US)/China New Development Co., Wenzhou Branch | Signed a contract to build a movie theater and provide related equipment. $400,000. 1/5/85. |
| United Trading Corp. (Jordan) | Will build an international information center in Fujian, which will include a hotel, office space, and computer center. 1/11/85. |
| Hitachi Construction Machinery Co. (Japan)/ MACHIMPEX | Will provide know-how for the manufacture of hydraulic crawler cranes and pile drivers. 1/15/85. |
| F & T Associates (US)/ Shanghai Committee of Science and Technology | Will construct an international conference center in Shanghai. $26.7 million. 1/24/85. |

**Consumer Goods**

| | |
|---|---|
| NA (Spain)/China North Industries Co. | Signed contracts for refrigerator, electric motor, and condensor production lines for a plant in Hunan. $3 million (600 million pesetas). 11/18/84. |
| Blauknecht (France)/ TECHIMPORT | A used refrigerator-manufacturing facility to be relocated to a site near Beijing. $3.3 million (30 million francs). 11/23/84. |
| Industrie Zanussi SpA (Italy)/TECHIMPORT and Tianjin International Trust & Investment Corp. | Received a contract to supply a refrigerator compressor production plant. $25 million. 12/4/84. |
| General Corp. (Japan)/ Chongqing Electric Refrigerator Plant, Sichuan | Received an order for refrigerator production equipment. $10.3 million (J¥2.5 billion). 1/1/85. |
| Toshiba Corp. (Japan)/ TECHIMPORT | Heat exchanger-making facilities for use in household air conditioners. $1.23 million (J¥300 million). 1/22/85. |

**Electronics and Electrical Equipment**

| | |
|---|---|
| Sinclair Research (UK)/ China Northeast Technical College | 600 48kb Spectrum computers. 9/84. |
| Cincom Systems (Singapore) | Twelve data base management systems. 10/26/84. |
| Thyssen (W. Germany) | Will supply computer equipment to the Baoshan Steel Mill. $30 million (DM90 million). 10/26/84. |
| Cegelec Industrie (Canada) | Circuit breaker apparatus. $4 million. 11/84. |
| IBM Corp. (US)/ Chongqing Iron and Steel Works, Sichuan | Microcomputer sale. 11/19/84. |
| Computer Resources Inc. (US)/EQUIMPEX | Will provide technology, equipment, and raw materials to make floppy disks in Zhengzhou. $1 million+. 11/19/84. |
| Eagle Computer Inc. (US) | Will ship PC Plus and PC Plus XL desktop computers. $4 million. 11/21/84. |
| Sanko Project Co., Ltd. (Japan)/China Market Publishing Corp. | Signed an agreement to train computer technicians. 11/22/84. |
| Action Computer Enterprises Inc. (US)/China National Electronics Import and Export Corp. | Signed a pact to sell 50 Discovery multiuser computer systems. $500,000. 11/26/84. |
| Fujitsu Ltd. (Japan) | 24 large- and medium-scale computers for universities and research institutes. $20.5 million (J¥5 billion). 11/27/84. |
| General Electric Co. (US/ Wuxi Electrical Apparatus Co., Shanghai Electrical Apparatus Research Institute, and Tianjin Electrical Drive Design and Research Institute | Signed an agreement to set up a distributor network to offer GE programmable controllers. $8–10 million. 11/27/84. |
| Telebyte Technology Inc. (US) | Received an order for 10 high performance TDX-75 magnetic tape systems. 11/30/84. |
| Wang Laboratories (US)/ Everbright Industrial Co., Ltd. | Purchased a Wang office system. 11/30/84. |
| Sino On-Line Computer (a HK-PRC joint venture)/ Beijing No. 3 Computer Factory | Will act as agent to purchase computer production line equipment. $2 million. 12/84. |
| Digital Equipment (US)/ Ministry of Water Conservancy and Power for East China Power Design Institute, Power Planning and Design Institute, Chengdu Hydroelectric Survey and Design Institute, and Yangzi River Planning Office | Four VAX-11/780 minicomputers. 12/84. |
| Seismograph Service Corp. (US) | Application for the above listed Digital Equipment microcomputers plus two array processors. 12/84. |
| Fuji Electric Machinery Plant Ltd. (Japan)/Tianjin No. 3 Semiconductor Equipment Factory | A high-pressure silicon pile production line. 12/84. |
| Burroughs Corp. (US)/ Bank of China | Contract for microcomputer systems. $1.4 million. 12/84. |
| GTE Lighting Products (US) | Received an order for a minimum of 1 million fluorescent lamps to be used in commercial buildings. 12/6/84. |
| OCE (Netherlands) | Will supply copying equipment, components and know-how. $7.5 million (24 million guilders). 12/10/84. |
| Philips (Netherlands) | Received an order for video disks and disk players. $14.9 million (£12 million). 12/8/84. |
| Thermo Electron Corp. (US) | Awarded a contract to furnish a computer system and instruments for an air-monitoring network in Lanzhou, Gansu. $1 million. 12/11/84. |
| Sord Computer Corp. (Japan)/Academy of Social Sciences | Has delivered 30–40 personal computer systems and will build a personal computer training center in Beijing. 12/11/84. |
| Printronics Ltd. (Australia)/Great Wall Industrial Corp. | Will construct a plant to manufacture multilayered circuit boards. $6.7 million. 12/11/84. |
| Eclatec (France) | Will provide public lighting technical help to Shanghai. 12/12/84. |
| TeleVideo Systems Inc. (US)/Beijing No. 3 Computer Factory, a division of China Electronics Import-Export Corp. | Will sell microcomputers. The factory will later build subassemblies for TeleVideo computers. $10 million+. 12/17/84. |
| Ricoh Co. (Japan)/China Electric Appliance & Instrument Industrial Corp., Guangdong and Guangzhou Film Machinery Factory | Concluded a contract to provide parts and training to assemble plain paper copiers. Later the Chinese factory will produce its own parts. $82 million (J¥20 billion). 12/25/84. |
| RCP Consulting (HK)/The Garden Hotel, Guangzhou | Received an order for four hotel management software packages. 1/85. |
| Burroughs Corp. (US)/ Yunnan Import-Export Commission; Yunnan Electronic Equipment Factory; and Everbright Industrial Corp., Beijing | Signed a contract to distribute and assemble Burroughs microcomputers. $20 million+. 1/10/85. |

| | |
|---|---|
| Sharp Corp. (Japan) | Has shipped 5,000 plain paper copier units. 1/15/85. |
| Matsushita Electric Industrial Co. and Matsushita Communication Industrial Co. (Japan)/China Electronic Technology Import Corp. | Ultra compact microphone production equipment and technology. $637,000 (J¥155 million). 1/22/85. |
| Winkelmann International (UK)/Shanghai Foreign Trade Adm. | Telephone taps and radio bugs detection equipment. $22,400 (£20,000). 1/24/85. |
| **Electronics (Consumer)** | |
| Toshiba Corp. (Japan)/ Liaoning Foreign Trade Bureau | Received an order for an integrated TV picture tube production plant. $10.3 million (J¥2.5 billion). 10/31/84. |
| Victor Co. of Japan/ Guangxi Import Corp. and Wuhan TV Factory, Hubei | Signed agreements to supply color TV assembly plans and technical assistance. $18.8 million (J¥4.5 billion). 12/26/84. |
| **Food Processing** | |
| Alfa-Laval AB (Sweden) | Equipment for a margarine plant. $2.4 million. 11/19/84. |
| Suntory Ltd. (Japan) | Signed a contract to help increase wine production in Xinjiang. 12/11/84. |
| Jard, Inc. (Japan) | Will set up a company in Dalian to develop health food technology. 1/22/85. |
| Life Stores Co. (Japan) | Reached a basic agreement to set up supermarkets in Beijing, Tianjin, and Shanghai. 1/22/85. |
| **Foreign Aid** | |
| Marubeni Corp. (Japan)/ China Welfare Fund for the Handicapped | Presented a grant of $37,570 (¥100,000). 11/27/84. |
| EEC | Grant for three agricultural development projects. $1.94 million (2.7 million ecus). 12/9/84. |
| (Japan) | Aid to boost grain production in Liaoning. $2 million (J¥500 million). 1/16/85. |
| **Machinery** | |
| Cerberus Guinard (France) | Fire protection equipment for a new library in Beijing. 11/23/84. |
| **Medical Devices** | |
| Philips (Netherlands) | Radiotherapy equipment for six hospitals. 11/6/84. |
| United Medical Enterprises (UK) | Negotiating to set up a hospital near the planned Daya Bay nuclear plant in Shenzhen. $115 million (HK$900 million). 11/15/84. |
| International Center for Diarrheal Disease Research (Bangladesh)/Ministry of Public Health | Bangladesh will assist in setting up a diarrheal disease research center in Henan. 1/10/85. |
| **Metals, Minerals & Processing Technology** | |
| (India) | 30,000 tons of iron ore. 8/14/84. |
| Hidro Nitro Espanola (Spain) | 4,000 tons of low carbon ferro-manganese. 9/7/84. |
| Marubeni Corp. (Japan) | 1,000 tons of copper wire rod. 9/18/84. |
| Thyssen (W. Germany) | 20,000 tons of rails. 9/28/84. |
| Danieli (Italy)/Qingdao Steel Works | A 4-strand continuous billet caster. 10/9/84. |
| Danieli (Italy)/Shougang Steel Works, Beijing | A 500,000 tpy bar mill. 10/9/84. |
| Danieli (Italy)/Anyang Steel Works | A 250,000 tpy bar mill. 10/9/84. |
| Voest-Alpine AG (W. Germany)/Shanghai No. 3 Steel Plant and Shanghai International Trust & Investment Corp. | Will supply a continuous caster. 11/84. |
| RCA Ltd. (UK) | Is to supply instrumentation equipment for a steel mill in Wuhan. 11/2/84. |
| Western Mining Corp. Holdings Ltd. (Australia)/ China Nonferrous Metals Import & Export Corp. | Will assist in construction of a nickel smelter at Jinchuan, Gansu. 11/15/84. |
| Cockerill Sambre (Belgium) | Is negotiating the sale of a used steel plant. 11/16/84. |
| George Wimpey (UK) and Pechiney (France)/China National Nonferrous Metals Corp. | Will participate in a feasibility study for a proposed aluminum smelter in Guangxi. 12/21/84. |
| Nissho Iwai Corp. and Nippon Light Metal Co. (Japan) | Will construct an integrated aluminum smelting plant in Pingguo, Guangxi. $1.2–1.6 billion (J¥300–400 billion). 1/15/85. |
| Japan–China Agriculture Farmer Exchange Assoc. (Japan)/Sichuan Scientific & Technological Commission | Reached an agreement to jointly survey and develop underground resources in Sichuan. 1/22/85. |
| **Mining Equipment** | |
| American Nuclear Corp. (US) | Used uranium mining equipment for a Chinese iron mine. $600,000. 11/84. |
| Mount Sopris, div. of EG&G Geometrics (US)/ TECHIMPORT and Weinan Coal Mine Special Equipment Factory, Xi'an | Advanced vehicle-mounted borehole logging systems and expertise to assemble the systems by the end of 1985. $5.3 million. 1/10/85. |
| **Packaging** | |
| Hanrez S.A. (Belgium) and BH-F (US) | Green bottle making equipment for wine and beer. 11/84. |
| Tetra Pak International (Sweden)/Beijing Pulp and Experimental Mill | Signed a contract for a production line for packaging liquid materials. 12/21/84. |
| **Petroleum** | |
| Oilfield Inspection Services (US)/China Ocean Engineering Services | Two underwater inspection systems. 9/84. |
| Union Pump Co. (US) | 24 centrifugal process pumps. $700,000–$1 million. 11/84. |
| Bas-Tex/Brown Fintube (US) | Is discussing an agreement to design and fabricate longitudinal fintubes. 11/19/84. |
| Esso Singapore Ltd. and Shell Eastern Petroleum (Singapore)/SINOCHEM | Signed contract to refine Chinese oil. 11/29/84. |
| Institut Francais du Petrole and Cie. General de Geophysique (France) | Four seismic data acquisition units for use in amphibious areas. $10 million. 12/3/84. |
| NDT Systems Inc. (US)/ TECHIMPORT | A tubular inspection unit, technical services and spare parts. $580,000. 12/84. |
| Gemco Equipment Co. (US)/TECHIMPORT | Will supply 47 top-drive shot-hole drill rigs. $2.5 million. 12/10/84. |
| Mobil Oil Corp. (US)/ SINOCHEM | Signed an agreement to process Chinese crude oil at a refinery in Singapore. 1/25/85. |
| **Ports** | |
| Ishikawajima-Harima Heavy Industries (Japan)/ TECHIMPORT and Tianjin Waterway Bureau | Won an order for a nonpropulsion 8,000 hp cutter suction dredger. 11/9/84. |
| C. Itoh & Co. and Hitachi Ltd. (Japan)/TECHIMPORT | Won an order to construct a coal center at Huangpu port under a World Bank loan. 12/4/84. |
| **Power** | |
| Lewis and Duvivier (UK) | Providing design assistance on the construction of a coal-fired power station on the Pearl River estuary. 11/2/84. |
| Hydro-Quebec International (Canada) | Won a contract to provide a feasibility study of the construction of a hydroelectric dam on a tributary of the Yangzi. $760,000 (C$1 million). 11/5/84. |
| Electronic Space Systems Co. (US)/Xiangtan Electrical Machinery Plant, Hunan | Cooperated to produce a solar energy power generator. 11/16/84. |

| | |
|---|---|
| Spire Corp. (US) | Signed a 20-year cooperative agreement to establish a production line for large-scale manufacture of photovoltaic cells and modules in Nantong. $3.3 million. 11/29/84. |
| ASEA, Inc. (Canada) | Will sell power transmission equipment. $5.5 million. 12/3/84. |
| Solenergy Corp. (UK)/ Tianjin No. 2 Semiconductor Mfg. Plant | Signed a letter of intent to manufacture solar cells. 12/12/84. |
| United Trading Co. (Jordan)/Fuzhou Electric Power Bureau and Xiamen Electric Power Bureau | Signed contracts to build two power generation projects. $89.5 million. 1/3/85. |
| Kuwaiti Fund for Arab Economic Development | Will provide a loan for construction of the Shaxikou power station in Fujian. $30 million. 1/5/85. |
| Southern Cross Corp. (Australia)/Qinghai Provincial Science and Technology Commission | Will build a solar energy experiment and demonstration center. 1/14/85. |
| **Scientific Instruments** | |
| John Fluke Mfg. Co. Inc. (US)/Beijing Radio Research Institute | Received an order for calibration equipment. $1.2 million. 11/14/84. |
| Phoenix Geophysics Ltd. (Canada)/Ministry of Geology | A 16-channel 5-station system for geophysical prospecting. 11/23/84. |
| **Shipping** | |
| (Norway) | A gift of a fishery resources research vessel. 11/21/84. |
| AG Weser (W. Germany) | A used trestle crane for a shipyard in Dalian. 12/4/84. |
| Nitto Transportation (Japan)/China National Chartering Corp. | Reached an agency agreement to provide shipping between Jiangsu ports and Japan. 12/4/84. |
| Kawasaki Heavy Industries Ltd. (Japan)/China Ocean Shipping Co. | Obtained a contract to convert three 15,000 dwt petroleum product carriers to 20,000 dwt carriers. 12/11/84. |
| Hitachi Shipbuilding Co. (Japan)/Dalian Shipyard | Signed a contract to modernize the shipyard's equipment. 12/12/84. |
| Mitsui Engineering & Shipbuilding Co., C. Itoh & Co., Hitachi Zosen Corp., Nissho-Iwai Corp. (Japan) and Sasebo Heavy Industries Co. (HK)/ MACHIMPEX | Won an order for two 27,000 dwt coal carriers. 1/22/85. |
| **Telecommunications** | |
| International Business Consulting Co. Ltd. (Japan)/Acheng Relay Plant, Heilongjiang | Will offer technical guidance. 9/84. |
| Plessey Co. PLC (UK)/ Huaying Nanhai Oil Telecommunication Service Co. Ltd. (a UK–PRC joint venture) | Won a contract to provide radio equipment for Zhanjiang. $186,330 (£150,000). 10/11/84. |
| Marconi Communications Systems (UK) | Won a contract to supply an advanced radio communications system to China's navy. $8 million (£6.5 million). 10/12/84. |
| BICC Telecommunications Cables (UK)/ MACHIMPEX and Beijing Telephone Adm. | Was awarded a contract to supply plastic insulated telephone cables. $650,000. 10/22/84. |
| Philips (Netherlands)/ MACHIMPEX and Shanghai Telecommunication Equipment Factory | Signed preliminary contract to produce teleprinters. $8.3 million. 10/26/84. |
| Edward Kern & Associates (US) | Will provide the equipment and technology necessary to modernize Hunan's telephone system. 11/5/84. |
| Electronics, Missiles & Communications (US) | Signed an agreement to supply television transmitting equipment and other TV hardware for a satellite network. $15–20 million. 11/5/84. |
| (Canada) | Signed a memorandum of understanding to provide training in the operation and maintenance of satellite ground stations in China. 12/28/84. |
| Pacific Telesis International (US)/Yunnan Post and Telecommunications Bureau | Signed a contract to provide telecommunications network planning and engineering. 1/4/85. |
| CIT-Alcatel (France) | Signed a contract for a telephone exchange in Beijing. $52 million. 1/24/85. |
| **Tourism** | |
| Groupe des Arcs (France) | Plan to carry out a feasibility study of a ski resort in Jilin. $436,000 (Fr4 million). 10/26/84. |
| Falcon Group (US)/ Donghu Holding Co. | Signed an agreement to build a combined hotel/apartment block in Beijing. $50 million. 12/17/84. |
| United Industrial Corp. Ltd. (Singapore)/CITIC | Signed a letter of intent to build a hotel complex. 12/19/84. |
| Mitsui Real Estate Development Co. (Japan) | Will cooperate on a tourism development project planned for Xi'an. $14.8 million (J¥3.6 billion). 12/25/84. |
| United Trading Corp. (Jordan) | Signed contract to construct two hotel complexes. $60 million. 1/11/85. |
| **Transportation** | |
| Citroen (France)/China National Automobile Industrial Import and Export Corp. | Signed a contract for 500 cars and to provide the technology to manufacture parts. 12/3/84. |
| Nissan Motor Co. (Japan)/Hainan | 20,000 light commercial vehicles. 12/4/84. |
| Mazda Motor Corp. and Toyo Menka Kaisha (Japan) | 6,400 pickup trucks and 1,600 passenger vehicles for Fujian, Guangdong, and Hainan. 12/4/84. |
| Isuzu Motors Ltd. (Japan)/MACHIMPEX and Ministry of Petroleum Industry | 3,000 trucks. $49 million (J¥12 billion). 12/4/84. |
| British Airways and Vickers (UK) | Discussing construction of an aircraft maintenance center in Guangzhou. $62 million (£50 million). 12/12/84. |
| Zundapp (W. Germany) | A used motorcycle production plant for Tianjin. $5.4 million. 12/12/84. |
| Pirelli Tires and Cables Group (Italy)/China National Chemical Construction Corp. and Hualin Rubber Plant, Heilongjiang | Signed a contract to sell equipment and technology for a tire plant. $10 million. 12/17/84. |
| German Aircraft Refuelling Assoc. (W. Germany)/Polytechnologies Inc. | Signed a contract to sell a refueling system. 12/17/84. |
| United Transport International, subsidiary of British Electric Traction Co. | Has acquired a share in Hong Kong's Citybus Ltd. which provides bus service to Shenzhen. 12/18/84. |
| Toyota Motor Corp. and Toyo Menka Kaisha (Japan) | 240 motor vehicles for Yantai. 12/25/84. |
| Beijing Seibu Co. (A PRC–Japan joint venture)/MACHIMPEX | 1,000 used passenger cars. 1/1/85. |
| Boeing Corp. (US)/Yunnan Provincial Aviation Co. | Two 737-300 airliners. 1/14/85. |
| Fiat (Italy) | 1,500 trucks. 1/14/85. |
| Airbus Industrie | Will sell three A310 jetliners. 1/28/85. |

**Miscellaneous**

| | |
|---|---|
| Hofstra University (US)/ China Association of Science and Technologies | Hofstra will seek companies to market products or enter joint ventures. 12/5/84. |
| CGM (Italy)/China Resources Machinery Co. | Signed a cooperative accord to promote sales between Italy and China. 12/12/84. |

## 中外贸易 CHINA'S EXPORTS THROUGH JANUARY 31

| Foreign Party/ Chinese Party | Product/Value/ Date Reported |
|---|---|
| **Agriculture** | |
| (Japan) | 1 million tons of maize by March 1985. 12/13/84. |
| **Construction** | |
| (Spain)/Shantou City Labor Service Co. | Contracted Chinese labor for a construction project in Libya. 11/29/84. |
| **Food Processing** | |
| Chong Ho (Netherlands)/ Shanghai Corp. for Foreign Economic and Technological Cooperation | Signed a contract to open a restaurant in Rotterdam. $575,000 (1.9 million guilders). 11/22/84. |
| **Foreign Aid** | |
| Henry M. Jackson Foundation (US)/Sichuan | $20,000 to continue foundation's tradition of strengthening US–PRC relations. 11/20/84. |
| (Somali) | 1,000 tons of maize. 11/27/84. |
| United Nations | $50,000 for Kampuchean refugees within Thailand. 11/29/84. |
| (Tanzania)/MOFERT | Donation for construction of an irrigation project. $22,600 (400,000 Tanzanian shillings). 11/30/84. |
| (Mali) | 2,000 tons of maize and assistance to build a hospital. 12/11/84. |
| (Angola) | 2,000 tons of wheat. 12/11/84. |
| (Zambia) | 3,000 tons of either wheat or maize. 12/20/84. |
| PLO | Food and blankets. 1/16/85. |
| (Kenya) | 2,000 tons of maize. 1/22/85. |
| **Metals & Minerals** | |
| Mitsui Mining & Smelting Co. (Japan)/China Nonferrous Metals Import–Export Corp. | Signed a contract to import rare earths from Jiangsu. 11/15/84. |
| **Packaging** | |
| Air Freight Containers (US) | Air freight containers from a factory in Guangzhou. 12/27/84. |
| **Petroleum** | |
| Empresa Nacional Del Petroleo S.A. (Spain) | 584,000 barrels of Daqing crude. 12/17/84. |
| **Power** | |
| Ministry of Hydraulic Industry (Congo)/Ministry of Water Resources and Electric Power | Discussing joint construction of a hydroelectric power station on the Lefini River. 1/14/85. |
| **Shipping** | |
| Middle Trade Shipowners' Assoc. (Japan)/China Ocean Shipping Agency | Signed a one-year contract to hire Chinese crews. 12/3/84. |
| Knutsen OAS Shipping (Norway)/Dalian Shipyard | Won a contract for building a 115,000-ton tanker. 1/3/85. |
| **Textiles & Textile Plants & Equipment** | |
| Keeco (US)/China National Arts and Crafts Import and Export Corp. | Keeco has hired four artisans to design and embroider tablecloth and bedding samples. 10/29/84. |
| **Trade Agreements** | |
| (Spain) and (Iraq) | Signed economic cooperation agreements in November and December 1984. |
| (Ivory Coast) | Signed its first trade agreement with China. 12/14/84. |
| (USSR), (Bulgaria), (E. Germany), and (N. Korea) | Signed goods exchange and payments agreements in December and January. |
| **Transportation** | |
| China Trade Associates (US) | Has bought four Beijing "Tiger 212" 4-wheel drive utility vehicles for US governmental certification testing. 10/29/84. |
| (Philippines)/China No. 2 Automobile Factory | 53 "Dongfang" dump trucks. 12/10/84. |

## 中外贸易 DIRECT INVESTMENT/PROCESSING/ COUNTERTRADE THROUGH JANUARY 31

| Foreign Party/ Chinese Party | Arrangement/Value/ Date Reported |
|---|---|
| **JOINT VENTURES** | |
| **Agriculture** | |
| Japan Institute of Food Distribution | Has agreed to form China Commodities Corp. which will deal in grain and improve facilities at two Chinese ports. Capital: $411,000 (J¥100 million). (PRC:51%–Japan:49%). 10/20/84. |
| Zhengda Holdings Co. (HK)/Zhengzhou City Fodder Co. and Henan Fodder Co. | Will jointly establish the Yuda Stock-breeding Fodder Co. in Zhengzhou to produce high-quality fodder. 11/12/84. |
| (Uganda) | Will launch a joint fishing and processing company with Liaoning. 12/10/84. |
| **Chemicals and Chemical and Petrochemical Plants & Equipment** | |
| NA (UK)/Everbright Industrial Corp. | Are planning to set up a firm to cooperate with Guangdong in developing the use of natural gas. 12/13/84. |
| CDF-Chimie International (France)/Bank of China and Hangzhou Chemicals Industry Corp. | Will form the Hangzhou Sino–French Chemicals Co. to produce paint powders and polyester resins. (PRC:75%–France:25%). 12/20/84. |
| Best Technology & Trading Co. (HK)/Guangdong Commodity Inspection Bureau and Huangpi Orchard Farm | Formed the China Flick (Guangzhou) Fumigation & Pest Control Ltd. to provide pest control service. Investment: $29,000 (HK$228,000). 1/3/85. |
| Petrochemical Industries Co. (Kuwait) and Phosphoric Acid and Fertilizer Corp. (Tunisia)/China National Chemical Construction Corp. | Initialed an agreement to establish a chemical fertilizer factory in Qinhuangdao. 1/5/85. |
| **Construction** | |
| Hong Kong–Macao (Zhongyin) Group/ Shanghai Minhang–Hongqiao Development Co. and Bank of China, Shanghai Branch | Signed contracts and articles of association to form the Shanghai Minhang Joint Development Co., Ltd. and the Shanghai Hongqiao Joint Development Co., Ltd. to promote closer economic cooperation between Shanghai, Hong Kong, and Macao. 10/19/84. |
| Kerry Industrial Co. ltd. (HK)/China Economic and Trade Consultants Corp. | Signed a 20-year contract to set up the China International Trade Center to be located in eastern Beijing. Investment: $280 million. 11/17/84. |

| | |
|---|---|
| Dunyi Co. (HK)/Hualian Textile Co., Shenzhen | Signed a contract to build the Hualian Center Mansion in Shenzhen. Signed 11/21/84. |
| Donga International Ltd. (HK)/Baoding No. 1 Construction Engineering Corp. | Set up the China Art Decoration Co. Ltd. to undertake interior decoration or construction projects for large or medium-sized Chinese hotels. 12/10/84. |
| Brown & Root International, Inc. (US)/China Nonferrous Metals Industry Foreign Engineering and Construction Corp. | Signed an agreement to cooperate on mining projects, roads, bridges, industrial and civil construction projects. 12/10/84. |
| Marubeni Corp. and Daiwa House Industry Co. (Japan)/Shanghai Foreign Trade Corp. | Signed a contract to construct homes for foreign residents in the Hongqiao district of Shanghai. Investment: $20.5 million (J¥5 billion). (PRC:40%–Japan:60%). 12/18/84. |
| Hong Kong China Empire Investment Co. Ltd. (HK)/Shanghai Foreign Trade Corp. | Cooperated to build a 25-story building to house foreign businessmen. 12/24/84. |
| Louis Berger International Inc. (US)/China Highway Engineering Consultants, Inc. | Signed an agreement to form the CHEC-LBI Joint Engineering Consultants, Inc. to provide technical consulting, feasibility studies, and design services for highways, bridges and other large-scale projects. 1/14/85. |
| Industrial Bank of Japan and Kowa Real Estate Investments Co./Shanghai Foreign Trade Corp., Shanghai Minhang Hongqiao Development Corp., Shanghai Foreign Service Co., and CCPIT | Signed a memorandum of agreement to set up a venture, Shanghai International Trade Center Ltd., to construct two 40-story buildings for an international trade center located in Shanghai. (50–50). 1/22/85. |
| **Consumer Goods** | |
| Seribo (France)/Heilongjiang Bureau of Forestry Adm. | Signed a contract to form the Heilongjiang Integrated Furniture Corp. Capital: $6.5 million (Fr60 million). (PRC:75%–France:25%). 11/19/84. |
| Yamaha Co. Ltd. (Japan)/Shanxi Radio Factory | Will jointly produce electronic organs for a period of three years. 11/26/84. |
| Sanchiku Optical Research Institute (Japan)/Shenyang Optical and Electronic Instrument Factory | Established the Shenyang Meidekang Optical and Electronic Co., Ltd. to produce zoom and wide-angle camera lenses. 12/84. |
| Oy International Business Service, Ltd. (Finland)/Jiangxi Forestry Dept. | Signed a letter of intent to conduct a feasibility study for jointly operating the Jiangxi Paper Mill in Nanchang. 12/4/84. |
| Shakespeare (HK) Ltd., subsidiary of Shakespeare Co. (US)/NA | Set up the Shanghai Hugang Industrial Co. Ltd. to produce fishing tackle. 1/85. |
| Sansei Koki Co. (Japan)/Huayi Photographic Materials Corp. | Agreed to set up the Shenzhen Huaxing Camera Co. to produce cameras. Capital: $164,000 (J¥40 million). (50–50). 1/10/85. |
| NA (HK)/NA, Tianjin and Tangshan | Set up the Jiatai Ceramics Industry Co. Ltd. in Tanggu to produce glazed tiles, quarried stone, and cutlery. 1/17/85. |
| Tambrands Inc. (US)/Liaoning Pharmaceutical Corp. and Bank of China | Announced a preliminary agreement to form a company to manufacture and sell tampons and sanitary pads. (PRC:40–US:60). 1/23/85. |
| **Electronics** | |
| NA (HK)/Hangzhou Automation Research Institute and Zhejiang International Trust & Investment Corp. | Established Hangzhou Computers Ltd. to produce microcomputers, develop software and provide computer maintenance service. 9/84. |
| Tokyo Sanyo Electric Co. (Japan)/NA | Plans to produce 16-bit personal computers. 11/27/84. |
| General Electric Co. (US)/Wuxi Electrical Apparatus Co. | Will establish a venture to make and service programmable controllers. 11/27/84. |
| Northgate Computer Services (UK)/Tianjin Computing Center and Tianjin Advanced Technology Development Corp. | Has formed the Northgate China Computer Services firm to specialize in the development of fourth generation application techniques. 11/29/84. |
| Wang Computer (US)/Xiamen Special Economic Zone Construction Development Co. | Signed a 15-year agreement to form the Xiamen Wang Computer Co. Ltd. to produce Wang personal computers and auxiliary equipment. Capital: $5 million. Signed 11/29/84. |
| Sanyo Electric Co., Ltd. (Japan)/Dalian Electronics General Corp. | Signed an agreement to set up a factory to produce radios, recorders, calculators, and microprocessors. 11/30/84. |
| China Development Co., Ltd. (US)/Bangbu No. 6 Radio Factory and Bank of China, Bangbu Branch, Anhui | Established the Bedis Electronics Co. Ltd. to produce metal film resistors. 12/10/84. |
| Ampex Corp., subsidiary of Signal Cos. (US) | Plans to set up two ventures to produce video tape recording products. 12/13/84. |
| Hardy Development Co. (HK) Ltd./Hainan District Development Construction Corp.; Haikou City Development Construction Corp.; China National Electronics Technology Import and Export Corp., Guangzhou Branch; and China Huanyu Joint Electronics Corp. | Founded the China Nanda Electronics Industry Corp. (CEC Group) to set up electronics enterprises in Haikou. 12/17/84. |
| Corporate Data Sciences Inc. (US)/Amalgamated Computer Co., Guangdong | Signed a 30-year agreement to produce CDS computer technology. Investment: $45 million. 12/20/84. |
| Nanguang Trade Corp. (Macao)/Weifang Electronics Corp., Shandong | Formed an enterprise in Macao to produce and market electronic products, including computers and communications equipment. 12/25/84. |
| Renful Computer Ltd. (HK)/Beijing Science and Technology Exchange Center | Established the Renful Chinese–English Computer Technological Service Center in Beijing to sell, install, maintain, and repair Renful computers. 1/9/85. |
| **Finance & Leasing** | |
| First Interstate Bank (US) and Banque National de Paris (France)/China National Nonferrous Metals Industry Corp., Industrial and Commercial Bank of China, and BOC, Trust & Consultancy Co. | Signed a contract to form the China International Nonferrous Metals Leasing Co. Ltd. to lease equipment to nonferrous metals enterprises and institutions. Signed 12/7/84. |
| **Food Processing** | |
| Mission Hill Vineyards (Canada) | Signed letters of intent to operate joint wineries in Dalian and Dandong. 11/84. |
| Kirin Brewery Co. (Japan) and Van U. Trading Co. (HK)/First Light Industrial Products Corp. | Reached an agreement to jointly brew beer. 11/15/84. |
| Kobe Fugetsudo Confectionery Inc. (Japan)/Beijing Pastry & Food Industrial Co. | Will set up a cookie production company at the Beijing plant. 11/20/84. |
| General Foods Corp. (US)/NA, Dongguan County | Hold equal shares in the Dongmei Food Co. Ltd. which raises cassava to produce starch for sale in China and the US. 1/23/85. |
| **Machine Tools** | |
| Waldrich Coburk Machine Tools Co. Ltd. (W. Germany)/Beijing No. 1 Machine Tools Plant | Signed a 10-year agreement to coproduce heavy-duty digital control milling-boring machines. 11/5/84. |
| Susanto Group (HK)/Beijing No. 1 Machine Tool Plant | Signed a 10-year contract to purchase and operate Autonumerics, a US machine tool plant. (50-50). 11/22/84. |
| Hitachi Koki Co. and Toko Shoko Co. (Japan)/Mindong Motor Corp. and Fujian Investment & Enterprise Corp. | Signed a contract to set up the Mindong Hitachi Electric Tools Co. in Fuzhou to produce drilling and grinding machines as well as other power tools. Capital: $3.5 million (J¥850 million). 1/1/85. |

**Medical Devices**

| | |
|---|---|
| Japan Medical Supply Co./Tianjin Medical Instrument Corp. | Reached a basic agreement to produce infusion solutions and blood transfusion systems. Capital: $4 million (J¥1 billion). 11/20/84. |

**Metals, Minerals & Processing Technology**

| | |
|---|---|
| Japanese Mining Co. Ltd./NA, Hainan | Signed a letter of intent to set up a titanium white powder factory. Investment: $30 million. 11/15/84. |

**Packaging**

| | |
|---|---|
| Wuthelam Holdings Ltd. (Singapore)/Beijing Paint Factory | Signed an agreement to form the Beijing Huade Metal Packaging Container Co. Ltd. to produce paint and aerosol cans. $5 million. 1/18/85. |

**Petroleum**

| | |
|---|---|
| Vetco Inc., subsidiary of Combustion Engineering (US)/Dalong Machinery Works, Shanghai | Have set up the Vetco-Dalong Offshore Equipment Co. to produce sub-sea equipment for offshore oil drilling. $5 million. 11/21/84. |
| Taylor Diving Co. (US)/China Ocean Engineering Services Ltd., Guangzhou Branch | Formed the China COESK-Taylor Diving Co. to provide salvage, towing, and diving services. 1/11/85. |
| Nippon Kokan and Marubeni (Japan)/Tianjin Shipbuilding Industry Corp. | Reached a tentative agreement to establish a joint venture to produce machinery for offshore oil and gas drilling. (PRC:60%–Japan:40%). 1/22/85. |

**Power**

| | |
|---|---|
| Hong Kong Nuclear Power Investment Co./Guangdong Nuclear Power Investment Co. | Signed a contract to form the Guangdong Nuclear Power Joint Venture Co. to construct China's first commercial nuclear power plant 70 km east of Shenzhen. Capital: $400 million. (PRC:75%–HK:25%). 1/19/85. |

**Scientific Instruments**

| | |
|---|---|
| Philips (Netherlands)/Beijing Institute of Medical Equipment | Have formed a venture to produce linear accelerators. 11/6/84. |
| Skipper Electronics AS (Norway)/CITIC, Huijiang Development Co. and Nanjing Navigation Mark Factory | Signed a 20-year contract to establish the Skipper–Nanjing Marine Electronic Co. Ltd. to produce navigation instruments. (PRC:65%–Norway:35%). 12/19/84. |

**Shipping**

| | |
|---|---|
| Jardine Shipping Ltd. (HK)/Tianjin Marine Shipping Co., China Resources Transportation Co. Ltd., and China National Foreign Trade Transportation Corp. | Formed the Tian-Yee-Hwa International Co. Ltd. to handle shipping between Hong Kong and Tianjin. 11/23/84. |
| Ministry of Fisheries (Somalia)/Zhejiang International Economic and Technical Cooperation Corp. | Signed an accord to set up a fishing-boat engine repair factory and a fishing net-weaving factory in Mogadishu, Somalia. 11/26/84. |
| Nippon Hoso Unyu Co. (Japan)/Tianjin Shipping Co., Beijing Shipping Co., Tianjin International Trust and Investment Co., Tianjin Harbor Container Co. | Will jointly run the Tianjin International Shipping Co., which will handle shipping between Tianjin and Japan. 12/17/84. |
| Maryland Sterling Engine Research and Development Ltd. and Mechanical Technology (US)/Shanghai Marine Diesel Engine Research Institute and BOC, Shanghai Branch | Will jointly research and develop the Sterling engine. 1/24/85. |

**Textiles and Textile Plants & Equipment**

| | |
|---|---|
| Grand Majestic Co. Ltd. (HK)/Northwest China No. 5 State Cotton Mill, Shaanxi | Established the Qinlian Textiles Industry Co. to produce cotton cloth. (PRC:60%–HK:40%). Investment: $2.9 million. 12/7/84. |
| Tokodussan Co. Ltd., Tokyo Juki Co. Ltd., and Morikiseisakusho (Japan)/Shijiazhuang Dress, Hat and Shoes Industrial Corp.; BOC, Shijiazhuang Branch; Shijiazhuang Trust and Investment Consultancy Corp. | Set up the Industrial Sewing Machine Repair Service Center to service machines in Hebei, Shanxi, Henan, and Shaanxi. 12/10/84. |
| Novel Enterprises (HK)/Linyi Rabbit Hair Mill and China National Native Produce and Animal By-products Import–Export Corp., Shandong Branch | Signed a contract to form the Linyi United Wool Co. Ltd. to produce rabbit hair yarn. Investment: $2.78 million. 12/25/84. |
| Talon Zipper Co. and China Enterprises Corp. (US)/Jiangsu International Trust and Investment Corp. and the Zhenjiang Zipper Factory | Signed a contract to set up a venture in Zhenjiang to manufacture zippers. $5 million. 1/8/85. |
| Wacoal Corp. (Japan) | Is discussing setting up a venture near Beijing to produce women's underwear. 1/10/85. |

**Tourism**

| | |
|---|---|
| Yun Ke Co. and Chin Pai Co. of the Kincheng Banking Corp., Hong Kong Branch/Minhang Hongqiao Development Co.; BOC Trust & Consultancy Corp., Shanghai and the Shanghai Catering Services Co. | Signed a contract to build the Tangqiao Hotel in the Hongqiao district of Shanghai. Investment: $40 million. 11/28/84. |
| Kumagai Gumi Co. Ltd. (Japan)/Shen Yih Corp., Shenzhen | Formed Quinnolex Ltd. which has purchased a site in Hong Kong to build a hotel. $24.35 million (HK$190 million). 11/30/84. |
| Cindic (Holdings) Ltd. and Hip Hing Construction Co. Ltd. (HK)/Shanghai Municipal Institute of Civil Architecture Design, Shanghai No. 7 Building Construction Co., Shanghai Industrial Facilities Installation Co., and Shanghai Union Trading Co. Ltd. | Formed the Sheng'gang (Shanghai–Hong Kong) Construction and Engineering Co. to construct a Hilton Hotel. Investment: $85 million. 12/11/84. |
| Haibin International Ltd. (HK)/Beijing Exhibition Center | Entered into a 10-year contract to jointly build and operate a hotel at the exhibition center. Capital: $3 million. (PRC:75%–HK:25%). 12/11/84. |
| China Empire Investment Co. Ltd. (HK)/Shanghai Foreign Trade Corp. | Signed a contract to build the Shanghai Mao Hai Hotel. 12/11/84. |
| Marubeni Corp. and Daiba House Industry Co. (Japan)/Shanghai Foreign Trade Corp. | Signed an agreement to form the Shanghai Sino–Japanese Friendship Estate Corp. Ltd. to build villas. 12/11/84. |
| Lishi Co. Ltd. (HK)/Tianjin No. 1 Hotel | Signed a contract to upgrade the hotel. $30 million. 12/25/84. |

**Transportation**

| | |
|---|---|
| De Havilland (Canada)/Shenzhen Helicopter Co. | Negotiating to set up a factory to assemble aircraft from imported parts. 11/19/84. |
| Toyota Motor Co. (Japan)/Beijing Municipal Automobile Repair Corp. | Have set up a repair shop. 12/13/84. |
| Orlando Helicopter Airways (US) and Bates Associates Ltd. (HK)/Guangzhou Machinery Tool Factory and Guangzhou International Trust and Investment Corp. | Signed a 15-year agreement to form Guangzhou Orlando Helicopters Ltd. to produce 10-seat helicopters that operate on gasoline. 1/24/85. |

**Miscellaneous**

| | |
|---|---|
| Ko Holdings (Singapore)/Huajian Corp. | Established the Kai Hin Enterprises, Ltd. in Hong Kong to promote investment, leasing, trading, and stock participation. Capital: $5 million. 11/19/84. |

| | |
|---|---|
| Senglei Iukei Investment and Development Co. Ltd. (Macao)/China Photo Service and Hainan Photo Publishing House | Signed an agreement to set up the China Globe Photographic Development Co. Ltd. to open color photo developing and printing centers in major Chinese cities. 11/19/84. |
| Senglei Iukei Investment and Development Co. Ltd. (Macao)/Guizhou Resources Development Corp. | Have agreed to participate in a variety of service, agricultural, and industrial ventures and establish an office in Macao to sell Guizhou products. 11/26/84. |
| Thai Hong Construction Co. (Thailand)/South China Book Co. | Signed a joint venture in book publishing. 12/1/84. |
| Daily Nara (Japan)/ Shaanxi Ribao | Will open a joint news center in Xi'an. 12/5/84. |
| Richard Clay Group (UK)/ CITIC and China Printing Corp. | Signed a 15-year contract to establish the Sino-British Printing Co. Ltd. in Beijing to print books. Registered capital: $3 million. 12/20/84. |
| Public Broadcasting System and Yue-sai Kan (US)/China Central Television | Will jointly produce a new television show "One World." 1/2/85. |
| Institute of Orientology (USSR)/Ministry of Culture | Will jointly publish an early edition of *A Dream of Red Mansions*. 1/22/84. |

**LICENSING**

| | |
|---|---|
| Rochester Instrument Systems Inc. (US)/Shanghai Instrumentation Corp. | Will provide technology to manufacture a monitoring instrument for use in new electric generating stations and petrochemical plants. $1 million. 9/29/84. |
| Outokumpu Oy (Finland)/China National Nonferrous Metals Import-Export Corp. | Flash smelter design for the Jinchuan Nickel Smelter in Gansu. 11/9/84. |
| Standard Oil (Ohio) Co. (US)/SINOPEC | Process for manufacturing acrylonitrile. 11/19/84. |
| Inmont Corp., subsidiary of United Technologies (US)/Beijing Paint Factory | Technology for the manufacture and application of flexographic and gravure inks for paper, film, and foil packaging. 11/26/84. |
| York International (UK) | Technology to manufacture truck parts. 11/26/84. |
| Nippon Electric Corp. (Japan) | Will license technology to produce 16-bit computers. 12/4/84. |
| Matsushita Reiki Co. (Japan)/TECHIMPORT | Technology to produce refrigerator compressors in Guangzhou. 12/4/84. |
| Honda Motor Co. Ltd. (Japan)/Shanghai-Ek Chor Motorcycle Co. Ltd. (PRC-Thai joint venture) | Technology for building motorcycles. 12/8/84. |
| Philips (Netherlands)/ Shenzhen Advanced Science and Technology Development Co. | Laser TV technology. 12/10/84. |
| Marantz Japan, Inc. | Small telecommunications equipment and audio equipment technology. 12/18/84. |
| Sharp Corp. (Japan) | Stereo equipment manufacturing technology. 1/1/85. |
| Toshiba Corp. (Japan) | High-speed facsimile machine production technology. 1/1/85. |
| Dover Japan Inc./China State Shipbuilding Corp. | Will produce stern tube seals. $205,500 (J¥50 million). 1/15/85. |
| Westinghouse Electric Corp. (US) | Reached preliminary agreement to license the manufacture of its flow measurement systems. 1/22/85. |

**LEASING**

| | |
|---|---|
| Ransburg Co. Ltd. (Japan)/Beijing General Bicycle Factory | An electrostatic paint-spraying assembly line. 11/12/84. |
| Nittoboseki Co. Ltd. (Japan) | A thermal insulation tube production line for a plant in Shanxi. 1/22/85. |

**ASSEMBLY**

| | |
|---|---|
| NEC Corp. (Japan)/Hainan Administrative Region Trade Co. | Received an order for color-TV kit parts and components. $53 million (J¥13 billion). 10/9/84. |
| Grundig (W. Germany) | Video recorders kit form sets. 10/18/84. |
| Volkswagenwerk AG (W. Germany) | Negotiating assembly of a few high-performance Audi 100 automobiles. 10/19/84. |
| General Datacom (US)/ Tianjin No. 5 Radio Factory | Will assemble computer modems. 10/23/84. |
| Oki Electric Industry Co. (Japan) | Will assemble high-speed facsimile machines. 11/13/84. |
| John Fluke Mfg. Co. (US)/ Beijing Radio Research Institute | 1,000 kits to produce multimeters. $1.8 million. 11/19/84. |
| Sodick Co. (Japan)/Hanchuan Machine Tool Factory, Shaanxi | Parts to assemble NC dischargers. 11/27/84. |
| Intel (US)/China Aero-Technology Import Export Corp. | Four thousand 86/310 and 286/310 systems for microcomputers. $12-$14 million. 12/84. |
| Sanyo Semiconductor (Shekou) Co. (Japan) | Will assemble small-signal silicon transistors to be used in radios and tape recorders. 12/4/84. |
| Grove International (US)/ China Construction Machinery Corp. and Harbin Engineering Machinery Plant | Will provide parts for assembling all-terrain wheeled cranes. 12/84. |
| Konishiroku Photo Industry Co. (Japan)/China Electronics Import-Export Corp. and Beijing Camera General Factory | Parts and components to produce Konica cameras. 12/12/84. |
| Monitor Labs (US)/Beijing Analytical Instrument Factory | Will assemble air pollution measuring instruments. 12/20/84. |
| Matsushita Electric (Japan) | Will produce videotape recorders. 1/10/85. |
| Tokyo Keiki Co. (Japan)/ SINOCHEM, Hunan Branch | Parts and components to manufacture real time ultrasound diagnostic scanners. 1/10/85. |
| Sanyo Electric Co. (Japan)/TECHIMPORT | Color TV kits plus assembling equipment for two factories in Chongqing. $30.7 million. 1/11/85. |
| A&D Co. (Japan)/ EQUIMPEX | Kits for electronic balances and related technology. 1/15/85. |
| Keihin Densokki Co. (Japan)/China National Electronic Technology Import and Export Corp. | Assembly kits for making magnetic linear scale digital position indicating systems used in the positioning of machine tools. 1/15/85. |
| Mitsubishi Heavy Industries Ltd. (Japan)/ EQUIMPEX and Jiangmen Diesel Engine Works | Signed five-year contract to assemble diesel engines. 1/15/85. |
| Kett Electric Laboratory (Japan) | Will provide kits for agricultural measuring instruments. 1/22/85. |

**COMPENSATION TRADE**

| | |
|---|---|
| Marubeni Corp. and Marubeni Foods Corp. (Japan)/CEROILS, Liaoning Branch | Technology to cultivate strawberries in exchange for shipments of frozen strawberries. 11/27/84. |
| (Canada) | Red clover seed in exchange for Chinese beer. 12/5/84. |
| Shin Daikyowa Petrochemical Co. and Toyo Soda Mfg. Co. (Japan) | Will crack Chinese naphtha into ethylene and propylene and process it into low-density polyethlene for exchange to the Chinese. 1/22/85. |

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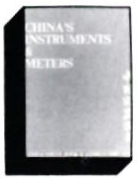
# 书刊介绍



***China's Instruments & Meters.*** Hong Kong: The China Phone Book Company, 1984. 398 pp. including advertising. $80 plus $10 postage and handling.

*China's Instruments and Meters* is the second volume in The China Phone Book Co.'s China Industrial Directory series. The bilingual directory is composed of five sections. First is a directory of products and manufacturers arranged in 29 product categories, such as astronomical instruments; dental equipment and supplies; film projectors and film cameras; and instruments and apparatus for measuring and controlling industrial processes. Entries give the plant name, address, telephone, cable, and telex numbers along with a list of the plant's major products. Award-winning products are indicated, and brand names underlined.

The second section is a list of domestic and foreign trade corporations involved in the manufacture, distribution, import, or export of instruments and meters, and a list of related research institutes. Other sections focus on trademarks, brand names, logos, and award-winning products. The final section contains three English-language indexes—a geographical index, an alphabetical plant name index, and an alphabetical product index—and the equivalent Chinese-language indexes.

***Statistical Yearbook of China 1984 (English Edition)***, compiled by the State Statistical Bureau, PRC. Hong Kong: Economic Information & Agency (342 Hennessey Road), 1984. 571 pp. $31 airmail.

This third edition of China's official statistical yearbook has a new look. The book opens with several pages of color graphs and charts displaying statistics for the years 1952, 1957, 1965, 1978, and 1983. Tables throughout the volume have been reset in a smaller, but more attractive, typeface.

The basic information that makes this book an essential China resource remains much the same, however. The tables have been updated through 1983; some new tables have been added, and others are presented in a new format.

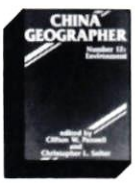
The general survey that begins the volume includes new geographical tables, main economic indicators, and economic data on key cities. The city statistics have been rearranged so that it is now easier to compare cities, but more difficult to collect statistics on a single city. Subsequent sections of the book cover population and labor force (which includes the results of the 10 percent sample tabulation of the 1982 census data); agriculture; industry; transport, posts and telecommunications; investment in fixed assets; domestic trade; foreign trade and tourism; public finance; prices; people's livelihood; education, science, and culture; and sports and public health.

Appendices include economic indicators for Taiwan, international comparative statistics, and explanatory notes. As with previous editions, there is no index; the researcher must rely on the detailed table of contents.

***The People's Republic of China: A Basic Handbook, 4th edition***, by Steven M. Goldstein, Kathrin Sears, and Richard C. Bush. Published by the Council on International and Public Affairs in cooperation with the China Council of the Asia Society, 1984. Distributed by Learning Resources in International Studies, 777 United Nations Plaza, New York, NY 10017. 164 pp. $7.50 paperback; $11.95 hardcover.

This little handbook is a treasure. Authoritative and current, it belongs in every school and public library as well as on the bookshelf of anyone interested in China. The handbook compilers have pared information down to the essentials, then suggested additional sources.

The opening chapter, "Learning More About China," lists the most important sources of China information. Each of the volume's subsequent sections—the land and the people; history of the Chinese revolution; China after Mao; foreign relations and national defense; economic development and foreign trade; material welfare, education, and public health; and daily life—is supplemented by maps, tables, biographies, and/or chronologies.




***China Geographer, Number 12: Environment***, edited by Clifton W. Pannell and Christopher L. Salter. Boulder, CO: Westview Press, 1985. 171 pp. $31.50.

This volume of *China Geographer* presents eight papers on a variety of environmental topics, along with five book reviews and a fold-out map of nature preserves and protected wildlife in China. The contributed papers are "Management of Earthquake Hazard: The Program of Earthquake Forecasting in China, 1966–1976," by Shiu-hang Luk; "The Effects of Forest on Water and Soil Conservation in the Loess Plateau of China," by Liu Changming and Wu Kai; "Assessment of Potential Agricultural Land in Western China with a Geographic Information System (GIS)," by R. Welch, Yi-rong Hsu, and C. W. Pannell; "The Changing Rural Landscape of China: A Study of Gaohe Xian, Guangdong," by T. N. Chiu and C. K. Leung; "Urban Environmental Quality in China: A Luxury or a Necessity?" by Sen-dou Chang; "Water Resources Development and Its Environmental Impact on Beijing," by Laurence J. C. Ma and Liu Changming; "Nature Preserves and Protected Wildlife in the People's Republic of China," by Catherine S. Enderton; and "Environmental Problems and the Development of Chinese Fisheries," by Jaydee R. Hanson.

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*China Exchange News*, focusing on scientific and education exchanges, available free of charge through the Committee on Scholarly Communication with the People's Republic of China, National Academy of Sciences, 2101 Constitution Avenue, Washington, DC 20418.

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# 面子

# miàn·zi

"Mianzi" means "face" in Chinese, both literally and figuratively. It is as much a representation of your dignity and prestige as it is a part of your anatomy. But the Chinese concept of "face" is better defined than ours. While Americans normally think of it as something that is lost or preserved, the Chinese remind us that "face" can also be given. In fact, "giving face" is one of the most important factors to remember when negotiating with the Chinese.

If you want to get the best deal in China, you need to understand how the Chinese negotiate. Who is the real decision maker on the Chinese side? Who is looking over your counterpart's shoulder as the pieces fall into place? What hidden criteria are being used to evaluate your offer? And—here's the key—how can you help your Chinese counterpart strike a deal that highlights his efforts—maximizes his "face"—and at the same time achieve your own goal?

Negotiating with the Chinese is a delicate art. It's not quite like dealing with other foreign nationals, and lots of the traditional rules don't apply. Even the canniest business representative needs help grasping the differences. That's where we come in. We can help you analyze what's going on.

For more than 11 years the National Council has been actively monitoring US-China business affairs. We have kept track of major agreements reached between Chinese and American partners, and we understand how deals are struck in China, how decisions are made, and who makes them. We know from experience how deals get sidetracked and how negotiations get stalled. We can help you avoid problems and achieve the best possible results in the shortest amount of time.

Call us at (202) 429-0340 when you're ready to talk turkey with the Chinese. We'll make sure you're well prepared.

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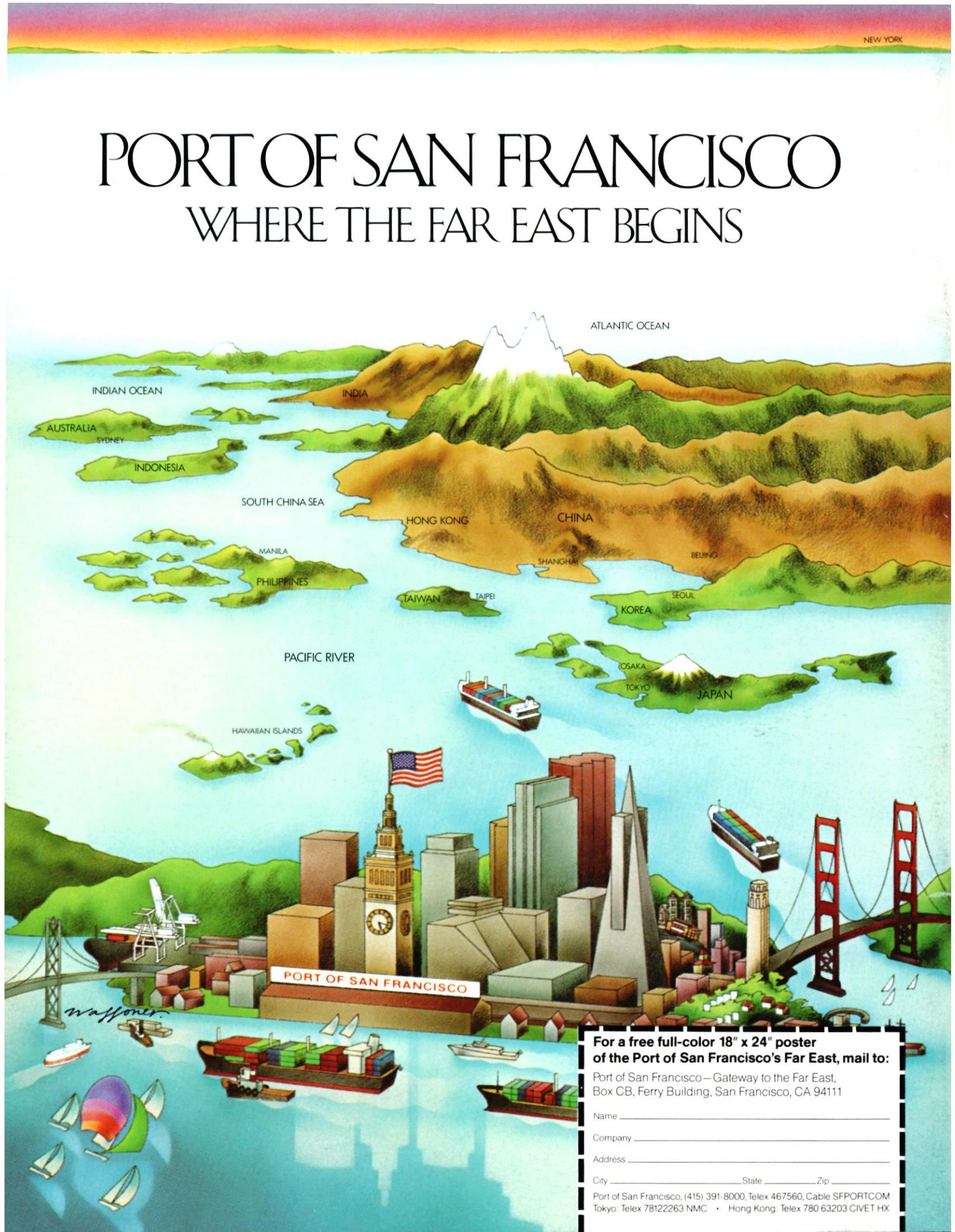


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