The China Business Review

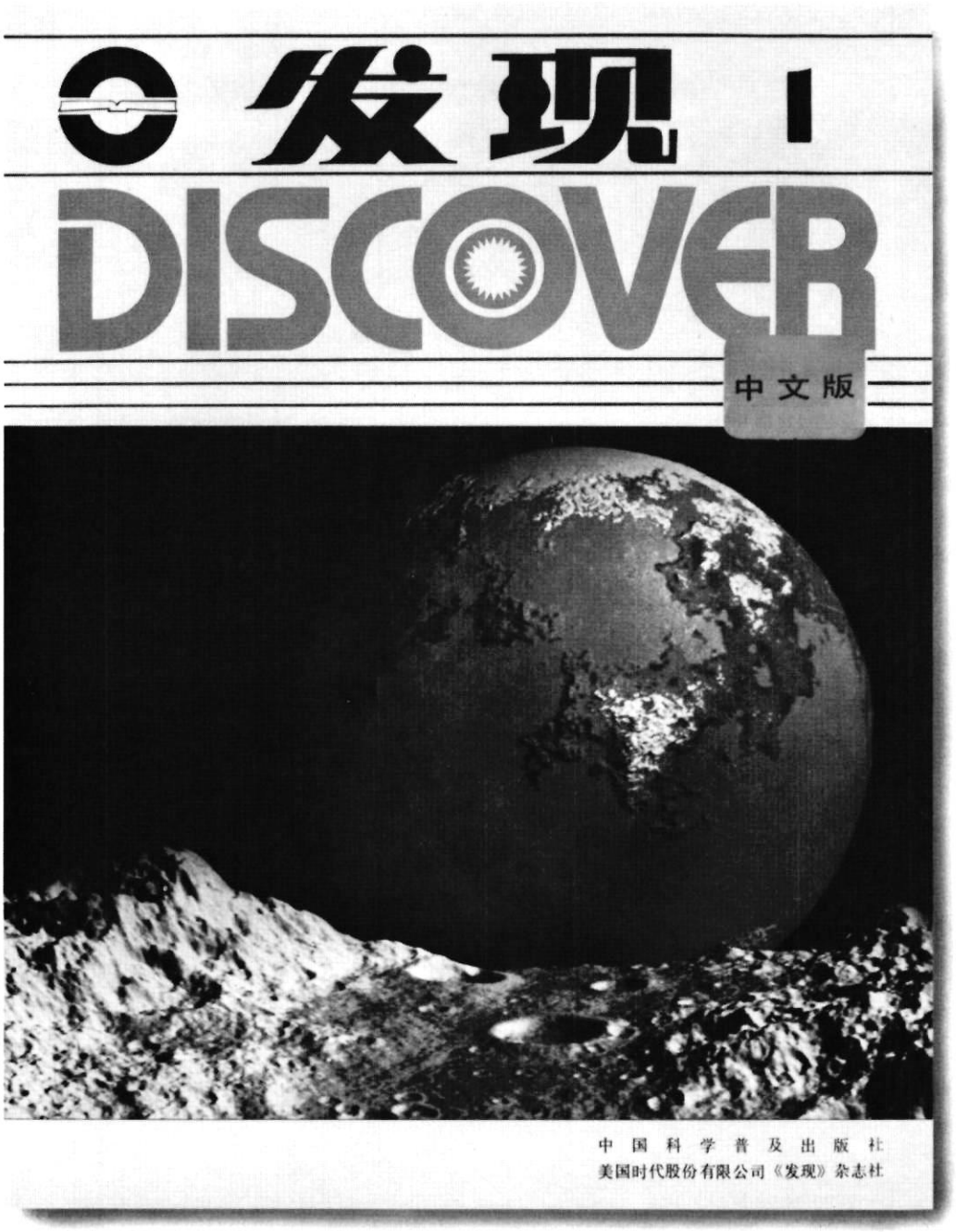
November–December 1983 $15

China Rethinks Its Economic System

Politics *Kenneth Lieberthal*
Agriculture *Albert Keidel*
Industry *Barry Naughton*
Labor *Andrew G. Walder*
Incomes *Nicholas R. Lardy*
Administration *Susan L. Shirk*
Budget *Audrey Donnithorne*

DISCOVER IN CHINESE.

Now America's largest science magazine speaks the language of Chinese decision-makers.



The Chinese DISCOVER is the first of its kind—the first foreign consumer magazine to be translated into Chinese and sold at nationwide retail outlets.

It's printed in four-color, on better paper than other Chinese magazines, with a bigger page. The price—twice that of other Chinese magazines. The initial circulation—20,000 guaranteed.

Here's a unique opportunity to advertise to an elite Chinese audience. A black-and-white page costs $2,625; four-color is $4,200.

To find out more about the Chinese DISCOVER, contact Jack Lynch in New York at (212) 841-2502; Ron Keown in Chicago at (312) 329-6392; Bob Bagno in Detroit at (313) 875-1212; or Cliff Allman in Los Angeles at (213) 385-8151.

Start talking the language of Chinese decision-makers—in DISCOVER.

DISCOVER
America's science magazine

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

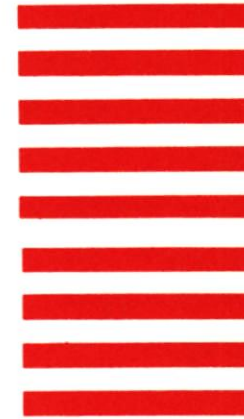
BUSINESS REPLY MAIL

First Class Permit No. 45394 Washington, D.C.

POSTAGE WILL BE PAID BY ADDRESSEE

The China
Business Review

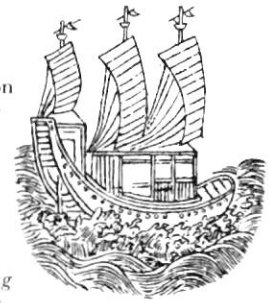
1050 SEVENTEENTH STREET, N.W.
SUITE 350
WASHINGTON, D.C. 20036



The China Business Review

The magazine of the National Council for US–China Trade

November–December 1983 Volume 10, Number 6



Cover: The nation that invented the compass is now embarking on a historic voyage of reform. **Page 8.** *Cover by Qian Songyan, and Ming dynasty woodcut by Mao Yuanyi.*

Licensing: The Chinese are slowly agreeing to more liberal terms in their licensing contracts, but still deserve their reputation as tough negotiators. **Page 36.**

Joint Ventures: The long-awaited joint venture implementation rules promulgated on September 20, 1983 clarify many old issues but raise some new questions of interpretation. **Page 44.**

摘要

ONE BIG EXPORT PROCESSING ZONE

When formation of the first Special Economic Zone was announced on September 6, 1979, the Chinese explained that one of its purposes was to try out new policies that could later be introduced nationwide.

In fact, policies implemented in the SEZs have spread to the rest of China with amazing speed.

Among the first was the right of export processing enterprises to import raw materials, parts, and packaging materials duty free. This right was officially granted SEZ enterprises in Guangdong Province on August 26, 1980. Then on April 8, 1983, China announced a "preliminary plan" to extend this policy to all export processing enterprises in the country.

The creation of 100 percent foreign-owned enterprises in China has spread just as rapidly. The first wholly owned foreign enterprise in China was established in the Shenzhen SEZ in May 1980. The policy soon spread to other SEZs, and on October 11, 1983, Vice-Minister Wei Yuming of the Ministry of Foreign Economic Relations and Trade announced that China would encourage 100 percent foreign-owned enterprises "in China's coastal areas where conditions permit." Soon thereafter, on November 15, the 3M Company of St. Paul, Minnesota announced an "agreement in principle" to establish a wholly owned plant in Shanghai to make tapes, resins, and connectors mainly for the telecommunications industry.

The proliferation of SEZ-type practices and regulations to the rest of China could mean that foreign banks will have limited branch banks in China one day—as they currently do in the Shenzhen SEZ. —JBS

UNACCEPTABLE LOSSES

In China the quest for profits has become a national preoccupation. Zhang Jingfu, the head of the powerful State Economic Commission, recently announced that all subsidies to state enterprises failing to achieve a profit will soon be cut off. The measure is part of a comprehensive campaign launched jointly by the SEC and Finance Ministry on September 29. A few of the campaign's "stopgap" and longer-term "radical" measures:

▶ State enterprises must cut their losses by at least one-half this year. Petroleum and petrochemical enterprises must eliminate their losses by year's end.

▶ Every money-losing state enterprise in China will be issued a deadline by the end of November 1983, after which time its subsidies will be cut off.

▶ Enterprise managers will be held personally responsible for the campaign's success. "Incompetent enterprise leaders will be sacked," one Chinese official claims. Warns another: "Both the Party secretary and factory manager will be asked to resign."

▶ Enterprises that fail to turn a profit will be "shut down, amalgamated with other enterprises, or switched to the manufacture of other products." In extreme cases the state may even turn the problem over to the workers and staff of profitless enterprises, by signing a contract with them granting a one-year tax holiday, and thereafter letting them sink or swim on their own.

▶ The number of money-losing state enterprises must fall by 32 percent this year, from 8,436 enterprises last year to about 5,730 by the end of 1983. This will reduce the percentage of state enterprises operating at a loss from about 30 percent in 1982 to 20 percent this year.

▶ Any enterprise currently losing money must stop paying worker bonuses at once.

▶ In the long run the government recognizes that prices must become more rational if factories are to become efficient.

Coming from Zhang, the man who helped implement China's agricultural reforms in 1979–80, these measures do not appear to be just another round of lamentations over the unprofitability of Chinese factories.

Moreover, the obvious concern over enterprise profitability calls to mind the comment of a China trader a few years back, who predicted that the Chinese would never let foreign firms make reasonable rates of profits until such behavior by Chinese enterprises was accepted, even required, by the Chinese authorities. That day seems fast approaching. Indeed, it may have arrived. —JBS

NUCLEAR POWER

China is edging into the nuclear power era in fits and starts. Recently the Hong Kong government approved in principle a joint venture between the territory's China Light and Power utility and Guangdong Province for the 1,800 mw Guangdong project near Hong Kong. As currently structured, Guangdong would have a 75 percent share in the plant, with the rest held mainly by China Light, which would buy about 70 percent of the power. The concrete commercial details—financing and the price of power sold to Hong Kong—remain to be negotiated.

The French company FRAMATOME reportedly has signed a memorandum of understanding with China to supply four nuclear reactors, including two for Guangdong, accompanied by the transfer of reactor manufacturing know-how. But many suspect that the Chinese will wait at least until the spring to pick a reactor supplier, in the hope that the US will have reached a nuclear agreement with China by then, making US suppliers eligible to compete.

Progress toward the agreement was made in two recent rounds of negotiations, but there are still some

outstanding questions. These include the strength of China's pledges to avoid assisting other countries in nuclear weapons development, and the modality of US inspections of China's facilities. The next round of negotiations is scheduled for early December, in the outside chance an agreement can be signed when Premier Zhao Ziyang visits the US in January.

In the meantime, China has begun signing some small contracts in the nuclear power field. The French national utility EDF reportedly will do a site and environmental survey in Guangdong. A German firm will supply a major pump for the 300 mw commercial reactor near Shanghai, and the US firm Sargent and Lundy has a consulting contract for a non-reactor portion of the Shanghai plant. —MW

WESTERN POLLUTION

A group of Chinese engineers training at a major US company left work on Friday, exhibiting the same cordial behavior toward their hosts that had characterized their stay. On Monday morning one American instructor was surprised and disturbed to sense a distinct chill in the atmosphere. The reason: A high-ranking cadre had arrived from China to brief the trainees over the weekend about the dangers of "spiritual pollution"—the corrupting effect of Western lifestyles and thinking.

This experience, thousands of miles from home, mirrors a major effort now going on in China to clean the ranks of the Communist Party and to eliminate what the leaders see as a general decline in morality and "socialist ethics."

The process began in October when the Chinese Communist Party announced a three-year rectification and re-registration of its 40 million members. This is the latest, and presumably final, stage in the leadership's effort to groom successors and set up an organizational structure capable of implementing the Four Modernizations.

There are two basic targets of this new drive. One is the category of individuals called the "three types of persons"—those who committed serious crimes during the Cultural Revolution, rose to prominence with the Gang of Four, or persist in perpetuating Cultural Revolution factionalism.

The second target consists of those who have lost their revolutionary spirit, or who exploit their position for personal gain. This includes incompetent, senile, disenchanted, and inactive Party members, those who flagrantly use the "back door" for personal benefit, and those engaging in bribery, smuggling, or profiteering.

The first stage of this consolidation will take place through the winter, and will involve central-level and provincial-level Party, government, and military organs. Beginning in early 1984, the bulk of China's 2.5 million Party cells will reassess their members.

At the same time, the Chinese leadership is moving to combat what it sees as the corrupting influence of bourgeois ideology, culture, and lifestyle. One senior cultural and propaganda official has publicly criticized himself for suggesting that personal alienation from society could occur under socialism. At the same time, the director and a deputy editor of the Party's official newspaper, *People's Daily*, were replaced for excessive liberalism.

Paradoxically, it appears that the relatively liberal Deng Xiaoping is leading the campaign aginst "spiritual pollution." This attack on "rightists" might be a tactic to protect his flank while he eliminates "leftists" in the Party. But it also reflects a real concern at the highest government levels about the spread of crime, corruption, influence peddling, and the unbridled drive to get rich by any means.

The impact of these two campaigns for foreigners will undoubtedly include some temporary confusion similar to that experienced during the spring 1982 government reorganization. Some Chinese officials will be uncertain about their Party status and will become cautious and standoffish in their dealings with foreigners. Company executives should understand the reasons behind the sudden change in attitude by their Chinese counterparts, and give them breathing room to work out their problems. Meanwhile, foreign traders will have to keep their fingers crossed that Deng and other top leaders mean what they say about keeping the "open door" truly open. Genuine technology transfer and meaningful commercial discussions are simply not possible if people are too afraid to talk. —CMC

MAGAZINE STAFF

James B. Stepanek
editor

Carol S. Goldsmith
managing editor

Martin Weil
Madelyn C. Ross
associate editors

Elizabeth Mueller Gross
copyeditor/production coordinator

Christopher M. Clarke
political analyst

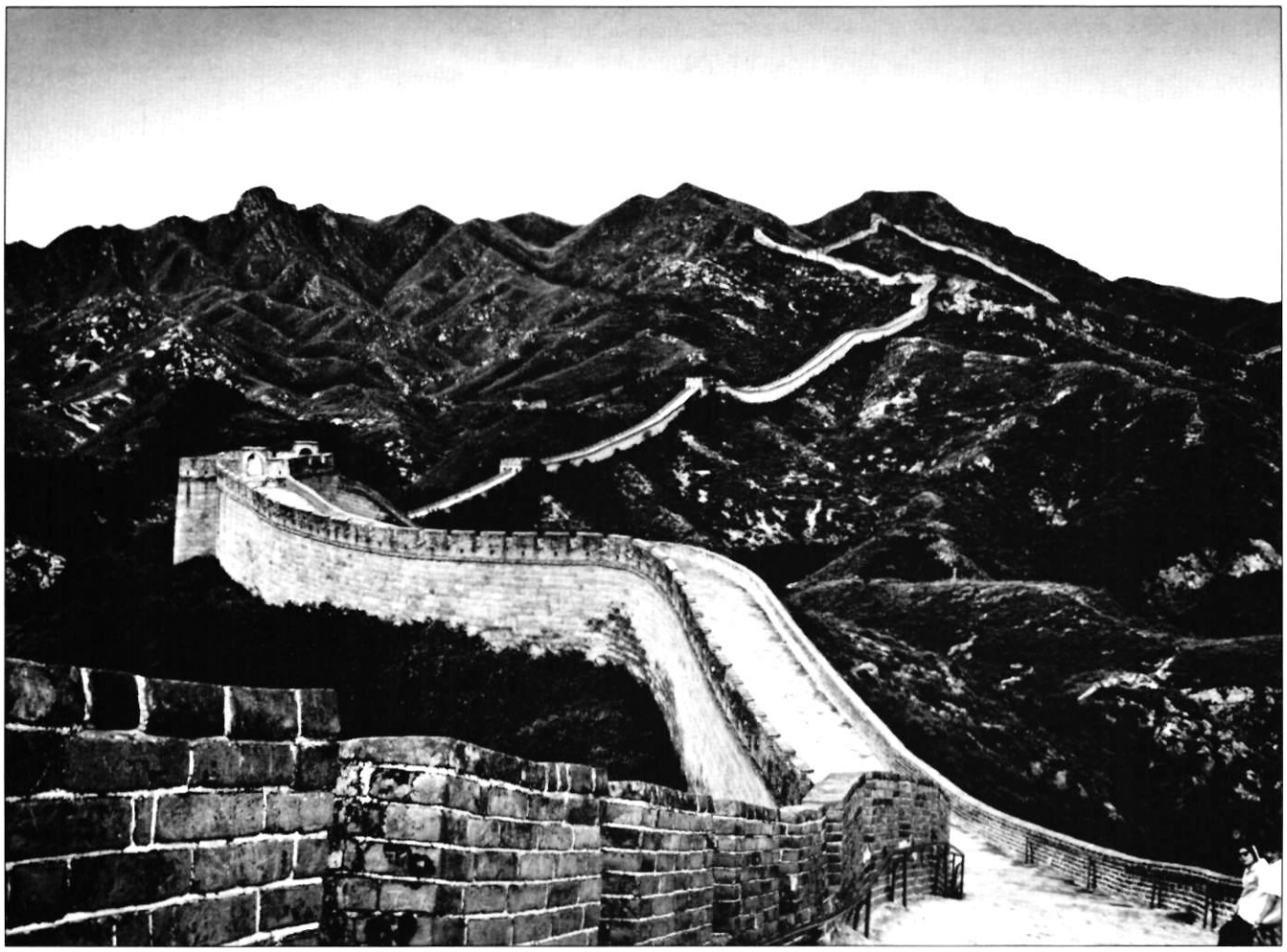
Jennifer Little
research assistant

The China Business Review welcomes articles from outside contributors. Manuscripts submitted for consideration should be typed, double-spaced, and normally may not exceed 5,000 words. They should be sent to the editor, *The China Business Review*, Suite 350, 1050 17th St., NW, Washington, DC 20036-5559, USA (telephone 202–429–0340). The National Council for US–China Trade retains all rights to articles and artwork published in *The China Business Review*.

Articles or artwork published in *The China Business Review* may be reprinted in non-National Council publications or reproduced only with the written permission of the National Council for US–China Trade.

The China Business Review is published bimonthly by the National Council for US–China Trade, a non-profit organization incorporated under the laws of the District of Columbia. Controlled circulation postage is paid in Washington, DC. Articles in *The CBR* do not reflect Council policy, unless indicated. The Council is grateful to His Excellency Huang Zhen, former minister of culture, for the calligraphy on the front cover, and to I-Chuan Chen of the National Council for the calligraphy used for the magazine's departments.

ISSN No. 0163-7169; USPS No. 320-050



Continental Bank opens a world of unlimited business opportunities.

Continental Bank is helping customers do business in the developing Chinese market.

Through our correspondent relationship with the Bank of China, Continental offers letters of credit, foreign currency, and trade financing.

We also have the technical expertise to arrange financing in the key areas of mining, oil, and gas.

If you see a business opportunity anywhere in China, talk to Continental. Odds are, we're doing business there now.

CONTINENTAL BANK

Continental Illinois National Bank and
Trust Company of Chicago

Anson Wang, Vice-President
16-18 Queens Road Central G-F, Hong Kong
Telephone: 5-238011 — Telex: 74072

Argentina • Australia • Bahamas • Bahrain • Belgium • Brazil • Canada • Chile • Colombia • France • Greece • Hong Kong • Indonesia • Italy
Japan • Kenya • Korea • Mexico • The Netherlands • Nigeria • The Philippines • Puerto Rico • Singapore • Spain • Switzerland • Taiwan • Thailand • United Kingdom • Venezuela • West Germany
United States: Atlanta • Boston • Chicago • Cleveland • Dallas • Denver • Houston • Los Angeles • Minneapolis • New York • Oklahoma City • St. Louis • San Francisco • Seattle • White Plains

评论

Sino-American Relations: Trends and Prospects

While relying mainly on their own efforts to modernize China, my people are fully aware of the importance of economic cooperation with foreign countries.

China's prospects for cooperation with the United States are being enhanced as Chinese laws become more specific and our country's infrastructure receives major attention. Two-way trade between China and the US totalled $18.2 billion over the last four years, registering rapid annual increases. Our economic and technical cooperation encompasses a variety of activities. Cultural interflow has expanded, as the presence of 10,000 Chinese students on American campuses demonstrates.

The road to improving our bilateral ties has, of course, been rocky. The goal of a stable and durable relationship has yet to be reached. Some people say that, given the wide differences in our two countries' social systems, the goal will always be beyond reach. In my view our differences should not be a major impediment. China strictly adheres to the Five Principles of Peaceful Coexistence in conducting its relations with foreign countries. China maintains good relations with Japan and many other developed countries despite differences in their social systems.

Some argue that any improvement in Sino–Soviet relations will darken the prospects for stable and durable Sino–US relations. Such a notion does not tally with reality. China has consistently pursued an independent foreign policy. It does not attach itself to any big power or group of powers, and never yields to pressure from any big power.

In my view, the Taiwan question is the main obstacle to the further development of our relations. Taiwan has always been an integral part of China. So important is this question that the establishment of diplomatic relations between the PRC and the United States came about only after the US government recognized in the Sino–US joint communique of January 1, 1979 that the government of the PRC is the sole legal government of China, and acknowledged China's position that there is but one China and Taiwan is part of China. Yet shortly after the issuance of the communique, the US Congress passed the Taiwan Relations Act. The US government continues to treat Taiwan as an independent political entity and keeps selling large amounts of arms to Taiwan, thus infringing on China's sovereignty and territorial integrity. To settle this difficult problem, the Chinese and Americans issued another joint communique last year. We sincerely hope that the US government will strictly abide by the relevant principles and provisions set forth in the joint communiques, and will not stand in the way of China's efforts to bring about the return of Taiwan to the motherland by peaceful means. Only thus can our relations gradually become stable and durable.

Some American friends ask: Can't we just push ahead with our relations while leaving aside the touchy Taiwan problem? We have all visited the Washington Monument and Lincoln Memorial which symbolize the importance a people attach to their national independence and unity. Thus, there should be little difficulty in understanding the Chinese people's strong sentiments on these questions. "One nation . . . indivisible"—when I hear this US pledge of allegiance to the flag, I cannot help thinking about the indivisibility of my own country, whose territorial integrity and sovereignty have so often been encroached upon.

Trade is another area in which certain difficulties need to be ironed out. However, thanks to the efforts of both our governments and peoples, recent events indicate an upturn in this area. A case in point is our new textile agreement. Moreover, the US recently decided to liberalize technology exports to China. I hope that the new guidelines will prove that the US government regards China as a friendly, non-allied country, thus stimulating our mutually beneficial business transactions.

As for our overall relations, a number of high-level exchanges have taken place, each adding to mutual understanding and trust. The climax will be the exchange of visits between Chinese Premier Zhao Ziyang and US President Ronald Reagan early next year.

We in China attach great importance to Sino–US relations. Bearing in mind the difficulties we both have gone through to reach the present level of our bilateral relations, we must not let any undercurrent pass unnoticed when we witness good trends, nor forget the obstacles ahead when we observe bright prospects.

Together our two peoples can contribute more to a better and safer world. Let us be watchful guards of the fruits of our friendship and exchanges. Let us be diligent workers in building a solid edifice of Sino–US relations.

–Zhang Wenjin
Chinese ambassador to the US
November 16, 1983

Readers are encouraged to send their commentaries, not exceeding 800 words, to: The CBR *editor, The National Council for US-China Trade, Suite 350, 1050 17th Street, NW, Washington, DC 20036. Deadlines are one month prior to the issue date that appears on the cover. Opinions do not reflect Council policy, unless indicated.*

Major reforms begun exactly five years ago, in December 1978, are changing the face of the Chinese economy. But can Beijing overcome the problems they have caused?

The Problem of Partial Reform

Susan L. Shirk and James B. Stepanek

In late 1978 Deng Xiaoping initiated a set of policies that have thoroughly shaken, and in many ways improved, the performance of the Chinese economy. These reforms were far-reaching, extending to industry, agriculture, foreign trade, and every facet of government administration. The reform proposals were also radical, involving fundamental changes in economic policies and institutions. Such drastic measures reflected the sense of economic and political crisis that pervaded the Chinese leadership after Mao's death on September 9, 1976 and the arrest of the "gang of four" one month later, which ended the turbulent decade of the Cultural Revolution.

The new leadership confronted an economy in serious trouble. Industrial activity was stagnant and efficiency had declined. Agricultural output had just barely kept up with population growth, so that per capita food consumption had not improved since the 1950s. The Cultural Revolution had slowed industrial production and left the society embittered. Respect for the Communist Party and the socialist system was extremely low and people were in no mood to respond to calls to continue to sacrifice for the revolution. Like the 1956 Hungarian revolution, the Cultural Revolution and its aftermath forced even the more conservative leaders to agree that political survival required economic reform. These were implemented in the months following the now-historic third plenum of the eleventh Chinese Communist Party Central Committee, convened in Beijing during December 18–22. The main reforms:

Restoring a balance. The government's first action was to reduce China's high rate of investment in heavy industry, particularly in steel. This lowered China's accumulation–consumption ratio, so that less money was spent on capital construction and more on raising people's living standards. In hindsight the change in emphasis may have signalled a historic shift in strategy from investment-led economic growth to one of demand-led growth.

On March 10, 1979, former Vice-Premier Li Xiannian revealed to a visiting American delegation that a complete reordering of economic priorities was in progress. The weak links to be strengthened, he said, were agriculture, coal, oil, hydroelectric power, communications, transportation, foreign trade, and the construction industry. At the second session of the Fifth National People's Congress on June 18, 1979, former premier Hua Guofeng publicly terminated the grandiose Ten-Year Plan for 1976–85 and its planned expenditures on 120 giant projects announced the previous March, and said that for the first time a lower target would be set for heavy industry than for light industry. These changes, the Chinese press noted, were to be accompanied by increased decentralization.

In the five years since 1978, heavy industry's share of industrial output value has, in fact, fallen from 57 percent to 50 percent. Agricultural output has experienced a five-year period of unbroken, spectacular recovery. Consumer goods production has also expanded rapidly, and foreign trade increased from just 10 percent of GNP in 1978 to 16 percent in 1982.

The new priorities also aggravated the rivalry among industrial ministries, causing such confusion in some sectors that the reform drive, while not halted entirely, has been punctuated by efforts to recentralize the economy (*see* page 24). Moreover, the attempt to affect a healthier economic balance between sectors exposed China's administrative and statistical shortcomings. Economic data had not been systematically collected during the Cultural Revolution, and the planners allowed to remain at their posts during those chaotic years had little time to pinpoint where the economy was, let alone steer it. But at the second session of the Fifth National People's Congress in June 1979, the government released its first comprehensive economic statistics in 20 years and shortly thereafter stepped up efforts to reform the Party and government bureaucracy (*see* page 10).

De-collectivizing agriculture. About 90 percent of China's rural households today work under one of several "household responsibility" systems introduced since 1979. These have transferred decision-making power from collective production units, such as teams, brigades, or communes, to households and individuals. Peasants typically sign contracts with the collective to provide certain services or amounts of crops, and are permitted to retain

or sell the excess. These contracts may even be inherited, and are more like long-term leases than rental agreements. The most widely used form of the system is similar to share-cropping, and involves assigning a plot of land to each household for cultivation in exchange for a share of its output or rent paid to the collective. Peasants are also allowed to invest their earnings in farm machinery and even vehicles to engage in private marketing. In short, farmers have acquired the right to use the land as though it were their own, indicating a clear trend toward *de facto* private ownership (*see* page 12).

Management reforms. Beginning in 1979, enterprises were permitted to retain a certain percentage of their profits to use for their own capital investment, collective welfare, and worker bonuses. As a spur to economize on capital, enterprises were allowed to retain more of their depreciation funds, and for the first time some investment funds were provided in the form of bank loans instead of outright grants. Enterprises were also given limited authority to make their own arrangements with suppliers and customers.

Prompting these reforms was the knowledge that the Chinese economy was rife with waste, a realization that did not seem to hit home u… the statistical system recove… the numbers show… na could vas… ly by …

i… of in … to a expe… makin…

Thes… ment re… external manageme… plenum … broaden the least for ho… products of c… enterprises we… directly with through state-co… industrial goods.

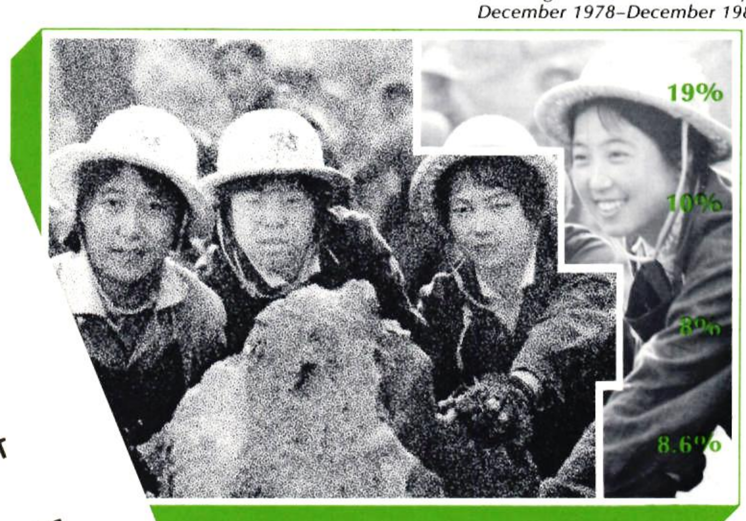
Labor reform. To stimulate greater labor productivity, piecework-type bonuses and other types of bonuses have been introduced since 1978 and wages have been increased several times. Although basic wages are still based on seniority and national wage scales, bonuses have come to constitute at least 20 percent of total pay. The goal of these and other similar reforms has been to reduce job security while rewarding individual performance—to break the "iron rice bowl," as the Chinese say.

But Beijing has learned that it may be easier to motivate managers than workers. Though there have been two major and one minor wage hikes in recent years that affected most industrial laborers, per-worker output has yet to show strong gains. One possible explanation is that workers still look upon higher wages not as incentives, but merely as compensation for past privations. They still prefer to distribute bonuses equally in order to avoid conflict. Moreover, actual dismissals are still so rare that workers are under little pressure to achieve (*see* page 18).

Financial decentralization. In order to combat the over-centralization of planning and budgeting, governments at the provincial, municipal, and county levels have been allowed to retain a certain proportion of the industrial profits and tax revenues generated by the foreign business dealings of enterprises under their control. They are free to spend these retained tax revenues and foreign exchange earnings on local projects. In short, the fiscal reform measures enacted since 1978 have generally increased the financial resources of localities relative to the central government. This has aggravated Beijing's budget crisis, and made it more difficult to prevent unauthorized investment spending by local governments (*see* page 21). Meanwhile, state subsidies have skyrocketed since the reform movement began. Nearly one-fifth of China's national income is now used to subsidize the living standard of urban workers and their dependents, who constitute only about 15 percent of the country's total population (*see* page 25).

THE 5-YEAR REFORM RECORD

Annual growth rate in current yuan, December 1978–December 1983.



Sources: Chinese State Statistical Bureau and Bank of China.

Those who have lost power and prestige due to the reforms will surely seek to regain prominence one day.

Political Reform

Kenneth Lieberthal

Beijing has taken a number of dramatic political steps since 1978 to pave the way for rapid economic growth. Initially, these included removing such key opponents to economic reform as Hua Guofeng from the Politburo and other top decision-making bodies, and replacing them with strong reform advocates like Premier Zhao Ziyang and Vice-Premier Wan Li. Numerous other organizational and political measures followed in train. Many older and relatively uneducated cadres have been moved into advisory positions, with their places taken by better-qualified middle-aged officials. A major series of reorganizations has slimmed down the number of units in the State Council, among other organs, in an attempt to delineate more clearly the lines of authority and responsibility. Institutional authority has also been shifted around. For example, the State Planning Commission has lost some of its former power to the banking and tax authorities, as part of the effort to increase the use of financial versus administrative levers in guiding the economy. And in general the Communist Party has been told not to interfere in microeconomic decision-making.

These organizational changes began on the national level in Beijing in March 1982, then moved to the provincial level in mid-1982, and now are centering more on the subprovincial cities and counties. They are to be complemented with a planned purge of the Party membership itself starting this winter and continuing for three years.

Politics, of course, consists of more than personnel and organizational arrangements. Chinese culture places a high value on the articulation of a set of moral precepts as guides to action. Because the striking changes in priorities and methods that had been implemented since Mao's death often ran contrary to the values that Mao had preached in his later years, the post-Mao leaders recognized early on that they would have to find ways of adjusting the ideology to fit a changing reality. Initially, this took the form of Deng Xiaoping's insistence in 1978 that Mao Zedong thought was itself a living body of doctrine that placed high value on pragmatism ("seeking truth from facts"), even if Mao did not always recognize this during his last years. Then the Chinese put out an official history in 1981 that treated the Cultural Revolution period as an aberration. All of this helped to create room for the new leaders by knocking down the ideological constraints of the Maoist legacy. It did not, however, provide a satisfying substitute for the ideological underpinnings of Chinese society that had been weakened. That is being attempted via the publication in July 1983 of the *Selected Works of Deng Xiaoping*, which is said to provide a moral and political rationale for the policies pursued since 1978.

Thus, China's current reform leaders headed by Deng Xiaoping have not hesitated to confront the difficult issues facing any serious reform attempt. They have taken initiatives on everything from the sensitive question of ideological reform to the politically ticklish problem of moving out older cadres in favor of younger and better-educated people, and the changes in almost all of these areas amount to more than simply window dressing. All indications point, moreover, to a continuation of the reform effort (if not a coherent reform program) during the next few years.

Despite the leadership's pragmatic orientation, the question still remains whether the government makes decisions, particularly economic decisions, more efficiently than before. Most people who deal with China are still impressed by the amount of bureaucratic foot-dragging they encounter. Does this simply mean that the reforms have not yet fully "taken hold," or are there more fundamental problems lurking beneath the surface that will limit the effectiveness of the reform effort for many years to come?

The long search for consensus

There are in fact several more fundamental problems that will limit the results of the reform effort, regardless of the determination and perspicacity of the top political leaders. Before detailing these impediments to efficiency, however, two broad caveats are in order. First, none of these impediments is absolute, and indeed most are already the object of one reform initiative or another. Secondly, all are so much a part of the system that they will exert enormous influence during the coming years even in the face of attempts to mitigate their effects. What are these core obstacles to enhanced efficiency and effectiveness in Chinese administration and performance?

One of the most important is the deeply ingrained cultural trait of *seeking a consensus* among all affected units before acting, which has actually been exacerbated by contemporary Chinese politics. Foreign observers have naturally been struck by the seeming centralization of the political system and by Beijing's ability to focus the attention of the country on a few key priorities. In reality, however, most decisions involve a long search for consensus before any action is taken. This practice is in part an unintended consequence of the murderous politics of the Cultural Revolution, a period that stressed group consultation and that proved enormously hazardous for anyone who had a penchant for seizing individual initiative. The resulting tendency toward rule by committee has subsequently become so much a part of the system that rarely does one

person or even one unit have the right to make a decision. But each unit almost always has the right to veto a decision. This is, of course, a poor environment in which to reorder priorities.

Two other key impediments enhance the pernicious effects of the system of consensus building. First, career patterns in China tend to keep an individual in only one unit, or at most within a group of closely related units. Thus, excepting only a small number of key executives whose careers span several different functional systems, cadres from the ministry down to the enterprise level spend their entire careers in the unit (or at most a group of functionally related units) in which they currently are working. This personnel assignment system naturally breeds a mentality that essentially identifies what is good for China with what is good for one's own unit. This type of "departmentalism" makes it hard for the Chinese to reach consensus, as foreign negotiators can attest.

Moreover, jurisdictional confusion and conflict in China is perhaps inevitable, since three different bureaucratic interests have a say in virtually all major decisions. The state administration consists both of *functional* hierarchies, which are organized largely along industry lines under ministries and their subordinate departments, and of a *territorial* hierarchy of provinces and localities. Assurance that this huge state bureaucracy will stay on the right *political* track is sought through the activities of the Communist Party administrative hierarchy that parallels the government apparatus. While the Party hierarchy does not now contain all the functional departments that exist on the government side, Party committees with subordinate staffs do exist at each administrative level and supervise the work of their government counterparts. Such a formidable gauntlet of overlapping and competing bureaucracies might intimidate even the most determined decision-maker.

The unintended result of trying to build so many competing demands into the bureaucratic hierarchy is that on any given issue quite a few units can block a consensus. Given the different outlooks and career loyalties that are likely to characterize those in functional, territorial, and Party units, the impediments to reaching consensus are great indeed. In fact, this very difficulty goes some way toward explaining the system of political and economic campaigns that Mao Zedong utilized so often. Only by mobilizing the bureaucrats and forming special organs to run campaigns could Mao and his colleagues force lower-level bureaucrats to cooperate. This "campaign style" had its own enormous costs, however, and has now been jettisoned. The problem this style was designed to overcome, however, has not diminished.

Four basic building blocks

A detailed look within China's bureaucracy reveals internal tensions that also impede cooperation. This can be seen by examining the four basic building blocks of the system: economics, culture-propaganda, security, and personnel.

Most people who deal with China are still impressed by the amount of bureaucratic foot-dragging they encounter . . . The tendency toward rule by committee has become so much a part of the system that rarely does one person or even one unit have the right to make a decision. But each unit almost always has the right to veto a decision.

The economic bureaucracies are in charge of economic management and growth. A main task under the reforms is to enhance efficiency. The cultural bureaucracies, by contrast, have responsibility for maintaining a devotion to socialism, patriotism, and a political *esprit* even while political indoctrination is being de-emphasized.

The security bureaucracies cover everything from crime and fire fighting to political dissidence, counter-espionage, and national defense. Reform to them means increasing their adherence to law, lightening political repression, limiting foreign subversion, and modernizing the People's Liberation Army. Finally, the personnel bureaucracies control careers through the maintenance of personal dossiers and control over employment and promotion. While personnel units are embedded in economic enterprises and other organs, these units have their own sets of regulations independent of their host organs. Under the reform program, the personnel bureaucracies should cultivate and promote younger and better-educated individuals and weed out former leftists still in responsible positions.

The reform program has had a complex effect on each of these bureaucracies. Some generalizations are, nevertheless, possible. First, the economic bureaucracies have to date gained the most overall from the program. They have greatly enhanced their control over economic decision-making, allowing far less intrusion by the Communist Party than had previously been the case.

The power of the cultural-propaganda bureaucracies, by contrast, has been cut back. The reform program has played down the role of politics when previously the *raison d'être* of these bureaucracies was to enforce political orthodoxy. By all accounts, it is now harder to make workers and intellectuals take political study seriously, and nobody is quite sure anymore just what constitutes the boundaries of the politically permissible. Extensive contacts with overseas Chinese and with foreigners have simply made the task of these bureaucracies more complex and difficult.

The security bureaucracies are in some ways in even a worse position. The 2.9 million rehabilitations following the Cultural Revolution returned to power numerous cadres who were once detained and abused by the security organs. This could hardly have made their former tormentors comfortable. In addition, power within the security bureaucracies has now been divided somewhat. Whereas by the early 1970s the security organs could easily accuse, arrest, try, and incarcerate an individual "in house," now the reestablishment of a judiciary and procuratorial apparatus constrains the public security organs. With the great increase in China's contacts abroad, moreover,

the tasks of these bureaucracies has also become vastly more complex. Finally, in the late 1970s the security organs lost the right to penetrate and discipline the Chinese Communist Party itself. Overall, it is little wonder that indications of demoralization and dissatisfaction have repeatedly surfaced within the public security system.

The military side of the security system has also had a mixed time with the reforms. Reportedly, high-ranking officers have been disgruntled over the denigration of Mao, have bridled at the greater political and cultural freedom allowed, and have chafed under the tight defense budgets that have accompanied the relegation of defense to fourth priority among the four modernizations. At the same time, the greater stress now given to strict training and to upgrading the combat effectiveness of the armed forces very likely does hold considerable appeal for many members of the armed forces.

Finally, the personnel system has been put in charge of cultivating and bringing into power a younger generation of better-educated cadres. While this may sound like a relatively painless task to fulfill, in reality personnel work has long been closely tied up with the personal interests and connections of people within that apparatus, and a sharp change in mandate must be traumatic to many.

Of all the Chinese systems, however, this is the one about which the least is known in the West. Therefore, it is hard to judge the degree to which the personnel system has been discomfitted by the reform program. It is noteworthy, though, that the personnel system has been completely dominated by the Communist Party in the past, and the Party used this system to help ensure the political loyalty of people who rose to power. Now these same people are being asked to make decisions on promotions based more on age and on educational and technical qualification than on the traditional criteria that stressed political loyalties. Resistance to the new promotion policies may explain Beijing's decision to reestablish special personnel organs to handle the placement of relatively educated cadres.

The economic bureaucracies have clearly fared better than the cultural, security, and personnel system under the reforms. When Westerners deal with the Chinese, though, they in general meet only individuals from the economic bureaucracies—precisely those who have the most to gain from the foreign connection. The other bureaucracies—which remain hidden from view—are more involved in limiting the "damage" done by these contacts with the West. In the past, however, they were more powerful than the economic bureaucracies, and only by reversing the tide of reform can they recapture the power that has slipped from them since 1978.

Kenneth Lieberthal is professor of political science at the University of Michigan and research associate at the university's Center for Chinese Studies. He is also partner in The China Group, a San Francisco consulting firm that has advised clients in the minerals and metals, offshore petroleum, pharmaceutical, and transportation sectors. Lieberthal's most recent book, coedited with Nicholas Lardy and published by M. E. Sharpe in 1983, is Chen Yun's Strategy for China's Development: A Non-Maoist Alternative.

Recent reforms could mark the last stage in a 30-year process.

Incentive Farming

Albert Keidel

Rural revolution is raging in China. It is not going too far to say that the changes are epochal. The contract responsibility system in agriculture appears to be the last stage in a 30-year process of protracted land reform, and both the author's very recent work in rural brigades and the statistical record for 1982 confirm that the new system is firmly established and very successful.

A brief description of the "household contract responsibility system" places it in clear contrast to the collective management system of the previous 20 years. After 1949 lands were confiscated from landlords, distributed to cultivators, gradually combined under mutual-aid teams and other organizations, and finally, in the Great Leap Forward of the late 1950s, wholly collectivized under the central management of communes and brigades. This system remained through the Cultural Revolution until 1979, when experiments began in Anhui Province with individual household management. Variations of the system quickly spread, and now more than 90 percent of rural households have made the switch.

The main point, of course, is that there are now real work incentives. Though state "ownership" still prevails, the right to use the land and other assets has been effectively transferred to families, hence the trend is clearly toward de facto private ownership. The contracts signed by households and their brigades are even inheritable in some cases, and resemble long-term leases more than rental agreements.

Although they show almost infinite variety in content and style, the contracts usually involve fixed mutual obligations for delivery of outputs and inputs. Household sales and purchases outside those required are totally at the discretion of the households. In other words, after meeting its contractual obligations, which are not unreasonably burdensome, what a farmer gets depends on what he produces.

These new incentives are having a dramatic impact on costs, yields, output mix, and other indexes of operating efficiency. The collective system overemphasized expensive public works projects, Soviet-styled heavy

mechanization, subsistence production, and commune economic self-sufficiency, in general. Commercial relations between communes, not to mention counties and provinces, were not encouraged.

Today the individual households are cost-conscious, waste little, and match appropriate resources with production needs. As a result, crop yields are up, planting mixes are shifting to maximize value-yields, and a great deal of attention is paid to the intricacies of the timing and production details so important for good farming.

The popularity and success of this system has spread to more specialized sideline agricultural activities and state farms. In particular, animal husbandry, which involves the complex management of animal care, nutritional balance, and fodder production, has gone almost completely over to the new system, not only for pigs, but for cattle, sheep, and other animals as well.

This dramatic shift in China's land reform has been supported by price changes, credit reforms, subsidies, and other policy changes. The 1979–80 farm price increases have been matched by eased credit arrangements with the Agricultural Bank of China, reduced prices for selected farm inputs (such as concentrates for fodder), and new rural organizations for extension and marketing. There are even prizes and certificates given to farmers as rewards for making money. In sum, the reforms are undoing much of the radical rural policies of the 1960–70s. The abolition of communes and replacement with townships has already begun in Sichuan Province, and is expected to spread.

Many criticisms have been leveled against the new system, however, the main one being that small family farms may be less likely to use modern inputs and the economies of scale that only mechanization can bring. But in the areas visited by the author, and in reports from other widely scattered localities, farmers and herdsmen have recognized the problem and begun to cooperate in the use of equipment and grazing lands. Although it may take some time, voluntary cooperation could succeed where compulsory cooperation failed.

The threat of unemployment is perhaps a more serious problem, because the distribution of land and herds to qualified individual households will leave a large proportion of the rural population without sufficient productive assets. Officials insist that there is land for all, but there are no statistics and the degree of actual rural unemployment is difficult to estimate. It is certainly not serious near cities and large towns, where the growth in services and other industries provides more job opportunities.

In many of China's isolated but heavily populated areas, however, the incentive to migrate to cities could increase. Until recently, such migration had been stemmed by tight control on urban income sources and the distribution of urban food and lodging. Now, free markets and private service establishments are beginning to offer alternatives to state employment and rationed food. If this trend continues, and a sizable proportion of China's 800 million peasants is forced off the land and into cities, there could be urban staple food shortages and serious political repercussions.

Beijing is currently addressing the problem by forbidding the free sale of land, in an effort to prevent the concentration of land holdings by wealthy families. In addition, the government is trying to increase nonagricultural rural employment, in part by creating satellite towns and new urban zones in rural areas. The official statistical redefinition of urban areas has already begun.

At this stage it is important to emphasize that these wide-ranging reforms seem to be not just more radical change in a never-ending cycle. It makes more sense to interpret the new system as the last stage in a 30-year process.

Experience around the world has shown that land reform is more than the mere distribution of land. For success, it also requires simultaneous reforms in rural credit, marketing, inputs, water, and even the organization of local police units and their allegiance. Land reforms in south and southeast Asia, Latin America, and sub-Saharan Africa have often failed as a result of ignoring the many supporting reforms required. However, land reform in Japan, South Korea, and Taiwan was successful in large part because the authorities paid attention to them all. China's job of reforming these many components of rural power was perhaps more difficult. It was carried out through a radical program of comprehensive rural leveling, with all its well-known excesses. As a result,

AGRICULTURAL OUTPUT PER CAPITA

Gross value of agricultural output in constant 1980 yuan per capita of rural population.

Source: Wharton Econometric Forecasting Associates, Washington, DC. Dollar figures are based on 1980 yuan-dollar exchange rate of ¥1.4984 per US dollar.

however, a new generation of Chinese farmers is ready to till its own land.

It is also interesting to note that something like this happened at the very start of the Tang Dynasty in the early eighth century AD. After reunification of the country, land was to be distributed to farmers for their lifetimes, to be returned for redistribution at age 60. The program seems to have lasted at most a half-generation. Beijing's insistence that land is still state-owned may have a similarly short life.

It is also clear that the last 34 years of Communist rule in China has followed a pattern dating at least to the Chin and Han dynasties in the second and third centuries BC. Chaos is followed by brutal reunification, which in turn is followed by the death of principal leaders, and a relaxation into a stable bureaucratic system. This finally succumbs, centuries later, to degeneration, corruption, and eventual chaos. China is now in a period of initial and guarded relaxation after an extremely disciplined period of reunification, and the household responsibility system is an important part of that relaxation.

The fate of China's industrialization and population policies also rides on the new system. An impoverished hinterland would cripple the economy by cutting off the country's growing industry from its largest potential market. Moreover, the higher rural incomes created by the new reforms hold the best hope for improving the economic, educational, and employment status of rural women. The end result is lower long-run fertility and a declining population growth rate.

In conclusion, the rush of rural reforms represents a very promising component in China's overall economic development. The degree of ultimate success will depend on the pace of other reforms and stability in the current policy pattern, which has turned China away from Soviet strategies to those of its more successful East Asian neighbors. ₹

Albert Keidel has made seven extended missions, most recently in July–October 1983, to rural Heilongjiang, Hebei, and Inner Mongolia as a consultant to the UN on agricultural and livestock projects. He is senior economist for China at Wharton Econometric Forecasting Associates in Washington, DC.

A variety of profit schemes are at the heart of China's industrial reforms.

The Profit System

Barry Naughton

China's industrial system has experienced a nearly uninterrupted series of reorganizations, abrupt changes, and noteworthy setbacks since the reform movement began in 1978. But in spite of the uneven progress, factories today are managed differently than they were just five years ago. Decisions are now made by people closer to the factories, and more attention is paid to market conditions than before. Enterprises consequently are marketing more goods on their own and selling less to the state. Meanwhile, Beijing has decided to do something about the one problem few thought it would ever tackle: the country's irrational price structure.

From the beginning, China's industrial reformers have concentrated on drawing up an appropriate set of rules to govern the division of profits between the state budget and the individual enterprise. In the five years since 1978, Beijing has put forward three successive "reforms" of the industrial financial system. In each period of reform a different principle for dividing profits has been advocated, but the proportion of profits actually retained by enterprises has increased steadily throughout the three periods. This progressive decentralization has contributed to the increased flexibility of Chinese industry during a period of rapid change, but has also created serious new problems of coordination and control.

Initial experiments

The first wave of reforms began with the decision to let some factories keep a fixed percentage of their profits. The resumption of worker bonuses and enterprise bonus funds in 1978 had already restored a modest link between enterprise performance and employee rewards when, in July 1979, the regime drafted an experimental profit-sharing program to be implemented in a limited number of enterprises in each province. A group was also convened under Zhang Jingfu, then finance minister, to design a comprehensive reform of the industrial management system. This first step in reform was carefully planned. The goal was to decentralize financial resources down to the enterprise level, in order to avoid merely transferring control from the central government to provincial governments. Moreover, the profit retention scheme was carefully calculated so that an enterprise would have to exceed its past performance to earn extra profit.

The profit-sharing experiment spread much more rapidly than planners had intended. At the end of 1979, Beijing was trying to limit the number of participating enterprises to 1,400, but within a few months was forced to recognize a total of 6,600 participating enterprises. These were the largest and most profitable, accounting for 60 percent of the output and 70 percent of the profits under the state plan. Meanwhile, similar experiments were being instituted under the sponsorship of various provinces and municipalities. The National People's Congress meeting in August and September of 1980 announced that profit-sharing would be expanded to all state enterprises by the end of 1981. For a brief period, a constituency seemed to exist that favored a "quick and dirty" reform of the entire industrial system.

This period of experimentation ended when problems emerged. Profit deliveries to the state budget declined 17 percent in August 1980, and estimates of the government's

deficit were revised drastically upward. The rise in consumer prices and runaway investment spending were also blamed on the reforms. In December 1980 Beijing halted the enterprise reform experiments, enacted strengthened price controls on consumer goods, and drastically reduced spending. Planned budgetary investment was cut by 40 percent, enterprise bank deposits were frozen, and the new program of bank loans for fixed investment was suspended. The strong medicine slowed industrial output, and profitability fell even more. It quickly became obvious that the deflationary policies were enlarging the government deficit they were intended to reduce, and by March 1981 the most drastic measures had been rescinded. In September 1981 plans were readjusted upward and expansion of heavy industry resumed.

A loss of direction

As the regime labored through 1981 to undo the harmful effects of its deflationary policies, it again endorsed programs that would allow enterprises to retain profits. In the spring of 1981, a second period of change in enterprise financial regulations began, centering around the system of "profit contracts" (*yingkui baogan*). Under this system an enterprise and its supervisory body would negotiate a profit "base figure," which the enterprise had to deliver to the state. Enterprises typically were allowed to retain a high proportion, ranging from 50 to 100 percent of profits above the base figure. This program, too, was implemented rapidly. By August 1981, 65 percent of all state enterprises had adopted the profit contract system or some other profit retention program, and by early 1982 this figure had risen to more than 80 percent.

Because the base figure was negotiated, not based on the previous year's financial results, an enterprise with lower planned targets or falling sales might reasonably ask for a low base figure. The need for worker housing, more raw materials, or any other factor real or invented, could be used to justify the least profit remittance to the state. Not only did factories seek favorable base figures, but their supervisory agencies also tried to negotiate the lowest possible base figures with *their* superiors. Moreover, these base figures were negotiated in the early part of the year when plan targets were low. When production was stepped up in the final quarter, many enterprises easily surpassed their base figures and the amount of profit retained by enterprises expanded substantially.

The profit contract system clearly intensified a number of bad managerial practices. Since it was in the interest of local governments to maximize the amount of profits retained by their enterprises, the profit contract system increased local government meddling in the affairs of factories under their jurisdiction. Moreover, even the low levels at which the profit base figures were set did not ensure their fulfillment. Since the setting of the base figures was to some extent arbitrary in the first place, enterprises could argue that circumstances beyond their control prevented them from fulfilling their profit quotas. As enterprises began to dodge their responsibilities, it soon became clear that the vast majority were immune to the threat of serious penalties. In Chinese terms, the enterprises had become "responsible for profits, but not responsible for losses."

The "tax-for-profit" reforms

In spite of its defects, this system was retained through 1982, and as production expanded so did the amount of retained profits. But in 1983 the "tax-for-profit" system was introduced, and so began the third phase of the reform. Tried in some 200 Chinese enterprises since the period of experimentation in 1980, this system is scheduled for adoption by all profitable state enterprises in 1983. The tax-for-profit system involves a series of taxes, paid directly to the state, that were substituted for the delivery of profit to an enterprise's supervisory body. In their most developed form, the taxes include: ▶ charges on fixed and circulating capital, ▶ the existing sales tax or "industrial commercial tax", ▶ an income tax, usually set at 40–60 percent of profits, and, ▶ an adjustment tax to compensate poor enterprises for the unfair advantages—higher (state-fixed) prices, better location, superior raw materials, and so forth—enjoyed by richly endowed enterprises.

The system's implementation in 1983 falls quite a bit short of this ideal form. Today enterprises simply have to pay a 55 percent income tax, or progressive income tax in the case of small enterprises, directly to the central government. After this tax is collected, profit-sharing ratios and profit contract base figures will be recalculated in order to leave enterprises with approximately the same level of retained profits as before. In itself, this change will have little effect on enterprises, but will greatly

BONUSES AS PERCENT OF TOTAL WAGE BILL IN STATE ENTERPRISES

Source: Ministry of Finance, Beijing.

strengthen the financial position of the central government *vis-à-vis* provincial and municipal governments since it channels a large portion of enterprise revenues through the hands of the Ministry of Finance.

No more free capital

A parallel reform movement has begun to shake up another once-ossified practice: ignoring the true cost of capital by giving factories free use of money and equipment. Only in 1979 did the government require enterprises to begin paying fees for fixed capital. But the results are mixed, as implementation was left to local governments. Annual fees for fixed capital currently range from 2.4 percent in Sichuan, to 9.6 percent in Shanghai. Some regions have extended the changes to a substantial majority of their enterprises. Again Shanghai appears to be the leader.

Though modest, the imposition of these fees has tightened up enterprise finances. With a capital-use fee of 5 percent, income tax of 55 percent, an average profit for state enterprises of 15 percent (as a percentage of fixed and circulating capital), and assuming no adjustment tax is levied, then only about 30 percent of total profits remains for division between enterprises and localities. Since enterprises are already retaining about 30 percent of total profits, this will substantially reduce the scope for bargaining over profit deliveries between enterprises and their supervisory bodies.

This is precisely the objective of the new program. By introducing a range of taxes and fees that reflect to some degree the scarcity value of capital, the system is designed to introduce a much greater degree of automaticity—and fairness—to enterprise finances. This should reduce the scope for bargaining, force enterprises to rely more on their own efforts, and make them truly responsible for profits *and* losses. In its ideal form, the new system should reduce local government interference in enterprise management and simultaneously give the central government greater control over the division of revenues between center and locality. Of course, this ideal remains a long way off.

A runaway expansion drive

Another problem undermining Beijing's control over enterprises is runaway investment spending, the unavoidable result of letting factories retain more of their profits. As foreign visitors can attest, China is engaged in an immense house-raising drive, as factories throw up worker apartments and attempt to make up for years of austerity in other areas. This is drawing cement, steel, glass—and money—away from projects Beijing deems more important. No longer disposing of the investment resources it once controlled directly, the central government has not yet devised any indirect instruments to control the scale of investment. As a result, investment spending during the past five years has tended to expand beyond the scale intended by central planners.

This investment binge has had a number of harmful consequences. In the first place, the competition for construction materials has led to escalating construction costs. While the state has done an adequate job of keeping the lid on price increases for consumer goods, costs of construction have risen at an annual average rate of 9 percent since 1978. In 1982 the central government was able to complete only 47 of 80 large construction projects scheduled for completion in that year, largely because of construction material shortages.

An even more serious consequence of the continued expansion is the fact that the state is forced to make even more drastic investment cuts whenever the situation reaches crisis proportions. We have already seen how this occurred at the end of 1980. In 1983 the state is again making extraordinary efforts to control the scope of investment by confiscating a portion of "extrabudgetary" funds (local government funds beyond Beijing's reach), and by enforcing a stringent system of priorities to guarantee construction supplies for central government projects. The need for continued dramatic interventions in the economy creates a vicious cycle of administrative interference in which a climate of instability makes it increasingly difficult to hold Chinese (and foreign) enterprises responsible for their own decisions. Since importing is one of the few areas in which the central government retains a high degree of control, the temptation is strong for the government to restrict imports of capital goods in order to hold down the overall scale of investment. This is undoubtedly a factor behind the low level of Chinese imports in the past few years and giant accumulation of foreign exchange reserves abroad.

Prospects for an immediate change in this situation are not good. In fact, China's ability to control investment has always been quite limited and the recent financial reforms have only attenuated that control. While the regime so far has absorbed much of the fluctuation in investment demand by cutting back central government investment, it could just as well restrict access to financial resources that the industrial reforms originally bestowed on enterprises.

Seeking "basic" price stability

Further progress in industrial reforms depends crucially upon China's ability to overhaul its distorted price system. Some limited progress has been made in this direction in the past five years, both through the adjustment of planned prices and by allowing market forces a greater role in setting prices. But it must be said that the distance traveled so far is a small fraction of the distance that remains. Chinese industry suffers from the long-term undervaluation of most basic raw materials, including foodgrains. This gives processing industries artificially high levels of profit. Eventually, the government will have to raise the price of raw materials enough to provide some return on capital in those sectors (at least sufficient to provide for replacement investment), and raise wages and the sales prices of basic foodgrains to reduce the massive subsidies attached to grain consumption. But too-rapid steps in this direction could ignite serious inflation, and the regime is loathe to upset the "basic stability" of consumer prices.

During the past five years, planned prices of some of the most seriously undervalued commodities have been adjusted upward, including coal, iron, timber, and cotton cloth. At the same time, prices of machinery and some consumer durables either have been set lower, or allowed to float downward in response to excess supply. While these price adjustments have reduced the profit margins for downstream producers, they remain woefully inadequate to resolve the underlying undervaluation of raw materials. The Chinese fully recognize this problem, and are in the

midst of computing a full set of new prices on the basis of an 80-sector input–output table compiled during 1982. Current plans call for the implementation of a comprehensive wage and price reform in several stages, possibly beginning in 1985.

In some cases the government has used the power of taxation to compensate for its seeming powerlessness over prices. In the space of a few months, the government reduced sales taxes on several items in short supply, such as soap and milk powder, thus increasing profit margins and stimulating output. Similarly, taxes were raised on some items in excess supply, such as automobile tires. Also in mid-1983, a 50 percent tax surcharge was imposed on factories burning crude oil in industrial furnaces. A few months later, a value-added tax was substituted for the former sales tax in several industries, including agricultural implements, bicycles, and sewing machines, a shift designed to eliminate double taxation and encourage specialization and cooperation in the production of these items. These changes reflect a new sophistication, and a willingness by the government to use "economic levers" to control aspects of industrial production that are relatively decentralized and closely linked to consumer markets.

Letting markets do their job

Another promising development is China's greater willingness to let factories sell products on their own. This is beginning to force producers to take a serious look at what the market wants, as opposed to what planners want. The practice of "selective purchasing" is the mechanism bringing factories in closer touch with markets. Begun in 1979, and expanded nationwide in May 1980, selective purchasing releases the Ministry of Commerce from the obligation to buy the entire output of a given factory. Instead, commercial units only purchase the quantity of output that they judge to be saleable. The enterprise is then free to market on its own the output that commercial units have declined to purchase. Even for products in great demand that commercial organs used to buy up, factories have generally been left a small percentage (typically 3–5 percent) of their output to market on their own. All sales are supposed to be made at the official state prices, though factories that sell on their own can collect the wholesale and retail markups. By 1981 direct factory sales accounted for 9.2 percent of total retail sales. Considering that basic food products account for over half of retail sales, this is a large proportion of industrial consumer goods output.

The marketing of producer goods is more complicated. For a long time, local governments have disposed of a portion of producer goods output without going through central planning agencies. In the case of products like coal, cement, and iron, the proportion of output under local control is over 50 percent, and still rising. For many of these products, provinces have the authority to set within-province prices, and for scarce products, these prices have been higher in general than centrally set prices, though quality is usually lower. Following the introduction of the profit-retention systems, enterprises increasingly have been allowed to market their above-plan output, if they can arrange inputs themselves, and sometimes a fraction of in-plan output, as well. This has released a large quantity of producer goods from the control of central planners. Materials from both these sources flow into "quasi-markets" in which materials are sold, or more commonly bartered, at relative prices that come substantially closer to what a free market might dictate than the state-set prices.

How much has really changed since 1978? The country's industrial system certainly remains weakly planned, and overwhelmingly bureaucratic. Factories are still most likely to attain "economic results" by currying favor with their superiors. Yet it would be unrealistic to expect such behavior to disappear in only five years. What is most significant is that the reform movement has been sustained for five years despite succeeding waves of new problems.

One of the most prominent of the quasi-markets is the barter trade between provinces. The province of Shanxi, China's largest coal producer, contributes 60 million tons of coal annually to the state's allocation system, but also disposes of an additional 10 million tons above and beyond its own needs. This coal is swapped with coastal and southern agricultural provinces for grain, consumer goods, and sophisticated machinery and technical advice.

The central authorities regard this trade with ambivalence. It is legal, and in some respects encouraged, but the authorities try to ensure that transactions take place at state-set prices. Because these thousands of arrangements are largely voluntary, however, and central authorities have no way to monitor them, this intention is almost certainly frustrated. Since mid-1983, Beijing has redoubled its efforts to stop large centrally run enterprises from diverting materials to quasi-markets at prices higher than the officially set prices. This is one part of the campaign to keep high-priority construction materials from being diverted to low-priority projects.

The quasi-markets, Beijing believes, are also aggravating the state's budget crisis. This is because large-scale enterprises, which turn over the most profits to the central government, are forced to buy higher-priced goods on quasi-markets each time the state supply system breaks down. This is precisely what worries central planners: If supplies are not guaranteed, the country's largest enterprises will experience rising costs that will reduce the profits the state so desperately needs. Indeed, the total amount of losses in industrial enterprises has remained roughly constant since 1978, at around 4 billion per year. But whereas in 1978 over half of these losses accrued to inefficient rural steel and fertilizer plants that have now been shut down, today's losses are borne by formerly

profitable factories (and newly established factories) hit by rising costs.

This crisis is heating up a long-running debate over the role of large-scale enterprises in the industrial reform process. Chinese industry is marked by a pronounced dualistic structure. While 2,200 "key-point" factories account for a third of gross output and slightly more than half of all profits and taxes, a mere 97 enterprises account for 15 percent of the profits and taxes delivered to the state budget. Under these circumstances, some planners apparently are tempted to tighten their grip over the giant enterprises to assure budgetary solvency, while permitting reforms to go forward in the vastly more numerous small and medium-sized enterprises. As of late 1983, planners have at least temporarily succumbed to this temptation.

In the long run, however, it will be impossible to proceed with a reform program that splits the industrial system into two sectors, as there are simply too many links between the two sectors. But as a short-run strategy, tightening discipline over the large-scale state sector may indeed provide a "bridge" between China's former centrally planned economy, and a future market-oriented economy.

Returning to the original question: How much has really changed since 1978? The country's industry certainly remains weakly planned, and overwhelmingly bureaucratic. Individual factories are still most likely to attain "economic results" by currying favor with their superiors, who reportedly are as likely to thwart initiative as to reward it. And a factory that does not wish to participate in a potentially threatening competitive environment still has ample bureaucratic nooks and crannies in which to hide.

Yet it would be unrealistic to expect such fundamental behavioral characteristics to disappear during only five years. What is most significant is that the reform movement has been sustained for five years, and the response of the regime to succeeding waves of new problems has not been to abandon the reform process. Instead, important new roles for market forces have been found, a major financial decentralization has occurred, and steps toward a more appropriate price system have been taken. If the Chinese are able to build upon these achievements and accelerate the pace of reform, we may begin to see fundamental changes in the behavior of China's managers and workers. But if the pace slows, it will probably be followed by dramatic restrictions on investment, which will paralyze the reform process for a long time to come. ₹

Barry Naughton is assistant professor of economics at the University of Oregon. He has recently returned from a year of research on the industrial planning and management system in China, hosted by Wuhan University. This semester he is teaching a course on the economy of China at Yale University.

Linking pay and performance has created new problems for management.

Rice Bowl Reforms

Andrew G. Walder

By the mid-1970s China could no longer afford to ignore its mounting labor problems. A decade-long policy of extreme austerity had abolished all incentive pay and led to a substantial decline in wage levels, and consumer goods remained rationed and in very short supply. Quotas and other tools of labor discipline had fallen into disuse, or else had been abolished outright. Rules regarding labor discipline often went unenforced by managers fearful of the political consequences of punishing members of the working class. Slothful work, poor quality, and high rates of absenteeism became the normal state of affairs. The general malaise spilled over into a mini-wave of strikes in 1975. The strikes in Hangzhou were so large that the army was called out to restore order.

Several national leaders, notably Zhou Enlai and Deng Xiaoping, had urged basic changes in prevailing labor and wage policies from the early 1970s, but it was not until after the death of Mao that they could put their ideas into practice. Since that time, industrial wages have risen considerably, incentive pay has been restored, and labor discipline enforced more vigorously. These wage and incentive policies represent not so much an innovative reform of the Chinese system as a restoration of the practices of the early 1960s, widely deemed to have been relatively successful. Based on practical experience rather than ideological prescriptions, these new (or rather, old) policies are designed to meet the labor problems head-on. And as in the 1960s, these policies have created their own set of problems.

No wage increases for 11 years

China's current labor problems stem from a long and sustained fall in real wages after 1964, and the total abolition of incentive pay in the decade after 1966. As originally envisaged in the mid-1950s, China's industrial workers were to be paid according to an eight-grade scale, with raises for substantial numbers of deserving workers every two–three years during national "wage readjustments." By 1958, many Chinese leaders, and especially Mao, decided that urban workers should not receive increased pay as long as there was surplus labor in the economy. This policy was enforced during the decade of remarkable austerity that began with the Cultural Revolution in 1966. There were no performance-related wage readjustments from 1963 to 1977.

The effects of this austerity are just becoming clear. Recently released Chinese statistics show a decline in the average annual state industrial wage, from the peak of ¥741 in 1964 to ¥632 in 1977. This represents a

nominal decline of 15 percent, and a decline in real wages of 20 percent after adjusting for inflation. By 1977 the average state-sector industrial wage, in constant prices, had dropped so far that it was lower than it had been a quarter century earlier, in 1952. Workers coped by putting more family members to work, but such prolonged austerity took a terrible toll on motivation.

The abolition of monthly production bonuses from 1966 to 1977 compounded the problem. Instead of bonuses, workers were paid a monthly "supplementary wage" equal to the average monthly bonus of prior years. It was completely unrelated to work performance or attendance. Workers hired after 1966 did not get this supplement, and this effectively lowered the average wage of the younger generation by an amount equal to one pay grade.

Slack management practices worsened the situation. Virtually all labor management and supervision systems were abolished as "capitalist" during the Cultural Revolution, and their restoration was resisted through the mid-1970s. Setting quotas, inspecting work, and keeping production statistics—if such things were done at all—were token efforts. Rules specifying punishment and fines for absenteeism, leaving the work post, and failing to meet quotas went unenforced—not only because there were no inspection systems to detect this kind of behavior, but also because managers were afraid to be censured for "suppressing the working class."

Removing the Political Stigma

China's post-Mao leadership approached the problem with a clear sense of its causes, and with a straightforward prescription: Restore the practices that had once proved effective. Since 1977 two major wage adjustments, and one minor one, have given wage increases to 83 percent of China's industrial labor force. The average annual wage in state enterprises had risen from ¥632 in 1977 to ¥852 in 1981—a nominal increase of 35 percent and a real increase of 20 percent in only four years.

The link between pay and performance is being restored, as well. The most recent readjustment made an effort to tie raises to evaluations of worker performance. Monthly and yearly production bonuses also have been widely revived. By 1981, 17 percent of the national wage bill was paid out as production bonuses, up from zero only five years before. These changes reflect the growing political pressure on managers to reward good performance. Managers have begun restoring quotas, shop-floor inspections, and statistics. And the political stigma attached earlier to productivity is gone.

A more innovative reform—discussed in the early 1960s but never widely implemented—was first adopted in 1978, when large-scale enterprises began to be allowed to retain a percentage of their above-target profit for the bonus fund. This reform created larger bonuses and tied them to increased productivity. Managers were also allowed to retain percentages of above-target profit for renovating their machinery or expanding capacity. Both of these funds rise and fall with a factory's profit, and are designed to give both managers and workers enhanced incentives for productivity. Since 1981 most of China's large and medium-sized enterprises have used a form of this scheme. This system goes far beyond what was permitted in the 1960s when enterprises drew their bonus funds as a fixed percentage of the wage bill (generally 6–9 percent, depending on the industry). If the factory met its targets, bonuses were paid in fixed amounts, regardless of the degree of plan overfulfillment, or the actual profit attained. Whatever profit the factory did make was remitted to the state.

The productivity enigma

Despite the new measures, however, labor productivity has yet to show a marked improvement. Per-worker productivity in state industrial enterprises increased only 6.5 percent during 1978–81 in terms of constant dollars, and virtually all of this increase came in 1979. Labor productivity actually declined in 1981 and did so in 10 of 15 industries—most notably in machine building and petroleum, where the decline approached 10 percent. When one considers that workers' real wages increased 20 percent over the same period, it is clear that industry is getting less output per labor dollar than before the reforms. The decline in heavy industrial output, for example, pushed labor productivity figures down and may have masked some improved worker performance, but it is equally clear that any upward trend in productivity is not yet measurable.

Nonstatistical evidence reveals a similarly mixed picture. Emigre workers interviewed by this author in Hong Kong during 1980 generally confirm that absenteeism, theft, and indiscipline declined quickly after

CONSUMER GOODS OWNED BY URBAN WORKERS

Average number consumer durables per 100 households in 1982.

Source: State Statistical Bureau, Beijing.

China's managers are already rational—what is needed are incentives to make it rational for them to be efficient.

1978, while interest in new skills and after-hours training increased, but output per worker reportedly responded much more slowly. Press reports and academic "investigation reports" published in China carry the usual share of model success stories, but many other articles have decried continuing sloth and worker indiscipline. Beijing's constant criticism of the "iron rice bowl" (China's system of unbreakable job security) and the 1982 enactment of harsher punishments for recalcitrant workers underscore official frustration with the limited success of the incentive reforms.

More disturbing to the government has been the emergence of undesirable labor and management practices that are the unforeseen outgrowth of the new policies. One is the reported upsurge in disputes over wages. The second is related to the first—managers and workers enjoy greater incentive pay, but seem to prefer the old practice of distributing bonuses equally to all with only a loose connection to individual performance. As a result, bonus funds have been skyrocketing as managers successfully evade accounting regulations.

Complicating Side Effects

It seems paradoxical that the sharp wage increases in recent years should lead to rising tensions over wage matters. However, many workers apparently fear, with justification, that the recent pay raises are just an expedient to make up for the losses of the past 20 years, and do not represent a new era of constantly rising wages. This fear reportedly led to widespread and disruptive haggling over the evaluations that accompanied the pay raises in 1979–80. Other issues, such as the decision to abolish as redundant the "supplementary wages" that older workers have come to regard as part of their fixed salaries, have added to the atmosphere of contention.

Efforts to tie bonus pay more closely to worker output have been vigorously resisted, as well. China's workers have become accustomed over the years to a relaxed pace of work, and the long absence of clear work rules and norms for earning quotas have made it hard for people to agree on what constitutes a fair day's work. China now faces the enormous task of reestablishing work standards almost from scratch. Such a colossal effort has led to all the predictable problems: Workers reportedly slow down when new quotas offend them, haggle over the assignment of "hard" and "soft" jobs, neglect quality standards to overfulfill their quotas and intimidate quality inspectors, engage in "chiseling," and refuse jobs that have impossible quotas. Now that labor relations revolve around money once again, China's managers confront problems that they have little experience in handling.

Playing it Safe

Managers appear to have responded conservatively and rationally to the new tensions in labor relations. The surest way to anger workers, managers quickly learned, was to put them on a tight quota system and then neglect to measure their output accurately, or make them wait for tools and parts. Some managers have understandably taken the easy way out by distributing bonuses more or less equally regardless of individual output—which they are ill-equipped by training and experience to measure or supervise anyway.

One symptom of this management response is the huge increase in the payment of bonus funds from 1978 to 1981—an increase that has outstripped state limits and exceeded any improvement in enterprise performance. In late 1978 the State Council limited bonuses to 8–12 percent of a factory's wage bill. Yet according to the Shanghai journal *Social Science*, a 1980 survey of 90 factories in Chongqing showed that bonuses comprised 40 percent of the wage bill for that year, and bore no relation to improved enterprise profit performance. In Shanghai, where labor productivity dropped by 1 percent and profits increased by only 4 percent in 1980, bonuses increased by 22 percent. In Liaoning Province in the same year, labor productivity dropped by 1 percent, and industrial output value rose by 8 percent, yet bonuses rose 53 percent. Even factories that were losing money were reporting large increases in bonuses paid.

Nor were the increased bonuses being handed out according to individual performance. Factories in the Shanghai Textile Bureau, described as typical by one *Social Science* writer, paid out one-third to one-half of their bonus funds equally to workers at the end of 1980. Even the portion of bonuses handed out monthly after the evaluation of worker performance were often being distributed with scant regard to performance. Evaluations were often superficial or pro-forma, differences in the sizes of bonuses were set too small to matter to workers, and in many cases workers took turns receiving the higher bonuses anyway. These practices have been widely decried as "egalitarianism" and "eating from the same pot," but there is little evidence that the practices have been curtailed.

Managers have often turned to a number of bureaucratic, sometimes illegal, strategies to inflate these bonus increases. The old bureaucratic game of hiding slack capacity and past output still pays dividends in a system where profit targets—the chief measure of enterprise performance—are based on past years' performance. Managers who have been most successful at this game in the past are rewarded preferentially, since they can now overfulfill profit

Andrew G. Walder is assistant professor of sociology at Columbia University's East Asian Institute. He received his Ph.D. at the University of Michigan in 1981, and in 1979–80 interviewed recently emigrated Chinese managers, engineers, technicians, and industrial workers living in Hong Kong. This article also draws on the author's visits to China in 1980 and 1982.

targets in a way that allows them to retain the maximum amount of funds. Added to these old and accepted strategies are some new and illegal ones—the covert raising of prices and cutting of costs by skimping on quality; the filing of false requests for overtime pay; the use of plant welfare funds as wage supplements; and the arranging of cash kickbacks between industrial suppliers and their customers—to cite the most common practices exposed in the Chinese press.

Reforming the Reforms

China's leaders appear to have drawn the only possible conclusion from their experience of the past seven years—that wage reform can move forward only in conjunction with other economic reforms. First of all, real wages cannot be raised too rapidly as long as unemployment exists. China's industry currently faces the prospect of absorbing a large and growing pool of unemployed youths, and this makes a large claim on wage funds that would otherwise go toward pay increases for currently employed workers. Secondly, workers are only one of many competing claimants on the state budget, and the fiscal austerity of the period since 1980 has curtailed further rounds of wage increases. And thirdly, sustained increases in wages require a shift in the composition of industrial production toward consumer goods in order to meet additional demand. If the shift is not fast enough, the incentive effect is dulled. Workers' wages did increase faster than did consumer goods production in 1977–80, and this is another reason why China's leaders may plan a more gradual rate of wage increase in the future.

Meanwhile, China has turned its attention to punishing workers and managers who break regulations. In early 1982 a new set of national punitive regulations for industry was released by the State Council and given wide publicity. Discipline ranging from fines to imprisonment were specified for violations by workers and managers. There is also a movement away from positive wage incentives and a return to the "spiritual incentives" of the Maoist era. Factory party secretaries are now declaring that "bonuses are not omnipotent," and that they must go hand-in-hand with intensified political education that instills a sense of duty to the nation. Other enterprises are also experimenting with "floating wages" and contract hiring systems for regular workers that threaten heretofore sacred wage and job security.

In the long run, wages can only be tied to individual performance when well-functioning—and enforceable—systems of quota-setting, record-keeping, and inspection exist. This will not happen as long as the irrationality of the current system encourages managers to evade fiscal controls and inflate their bonus funds. China's economists are now calling for more strict fiscal controls over enterprises, including taxes on fixed capital, and reform of the country's irrational price structure so that profits more accurately reflect enterprise efficiency. China's managers are already rational—what is needed are incentives to make it rational for them to be efficient. ₹

The gap between urban and rural living standards is growing at the state's expense.

Subsidies

Nicholas R. Lardy

Beijing's efforts to expand the role of the market have been undermined by growing distortions resulting from price subsidies. Such subsidies were relatively small in the 1950s. But they grew rapidly during the 1970s and have skyrocketed since the economic reforms began. Nearly one-fifth of China's national income is currently devoted to subsidizing the living standards of urban workers and their dependents, who constitute only about 15 percent of the country's total population. The political consequences could be serious if the gap between urban and rural incomes continues to widen. As subsidies have grown more rapidly than wages, foreign firms in China have found their wage costs escalating, since the wage rate they pay implicitly includes the value of price subsidies.

The problem began when Beijing decided to keep the prices of food, housing, and other important goods and services artificially low by subsidizing their costs of production. As the real—but disguised—costs of goods and services have risen, so has the strain on the state's financial resources, though only recently has it been possible to measure the magnitude of the subsidy of certain consumer goods.

Subsidies and fringe benefits accruing to the 75 million workers and employees of the state in 1978, the year for which the most complete data are available, averaged ¥526 per worker. Subsidies were the equivalent of 82 percent of the nominal average wage of each worker and cumulatively absorbed a staggering 13 percent of national income. By far the most important subsidy program is that for rationed cereals and edible vegetable oils, which are sold at little more than half of their costs to the state. These subsidies cost the state ¥179.6 per worker in 1978.

But a broad range of other consumption items of the urban population is also subsidized. Housing rents for state employees typically were equal to only 3–4 percent of nominal income, and covered only a quarter of state costs. The subsidy was ¥85.3

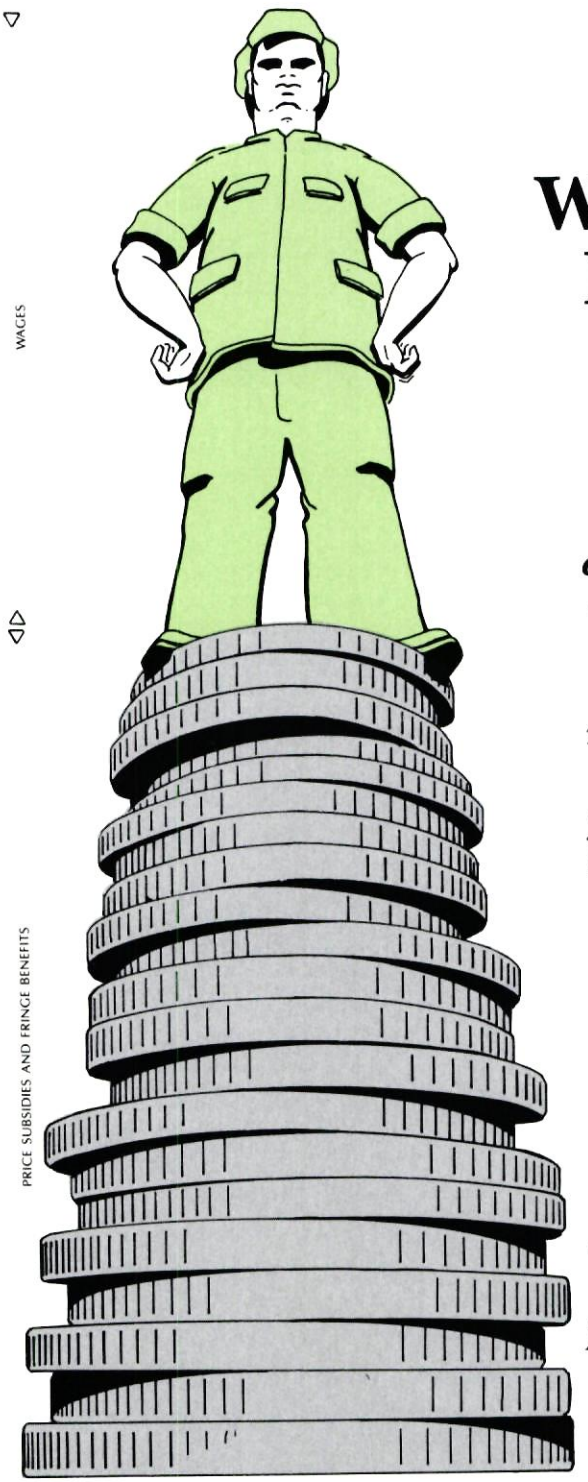
Nicholas R. Lardy is associate professor of economics at the University of Washington's Henry M. Jackson School of International Studies. The article draws upon the more detailed analysis contained in the author's World Bank Staff Working Paper No. 606, Agricultural Prices in China, *published in September 1983.*

per worker but would be substantially higher if the underlying cost measure provided adequately for capital costs and depreciation. Retirement, survivor, disability, maternity, and other benefits administered through the labor insurance system are worth another ¥67 annually per worker. Health care benefits cost the state ¥48.3. Other services provided through work units, such as subsidized day care, worker recreation facilities, and a broad range of other in-kind benefits cost the state another ¥119.5 per worker.

In addition, there are three other less-known subsidy programs. Coal for home heating and cooking is subsidized at a rate that amounts to ¥10.1 per worker. Employees that live a certain distance from work (the criterion of more than three bus stops is often used) are eligible for subsidized bus tickets. This benefit is worth another ¥6.3 per worker, but because this is an average figure, the few workers who do commute probably receive a subsidy far in excess of ¥6.3 per year. Finally, those workers who have a spouse assigned to a work unit in another city receive a special travel subsidy to underwrite the cost of an annual visit. Not including the extra vacation time to which such workers are also entitled, this subsidy averages ¥10.0 per year although the amounts collected by those eligible must be several times this great.

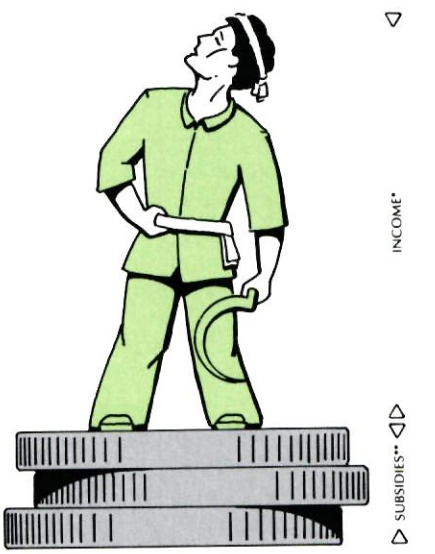
By comparison, the subsidies and fringe benefits for rural households are quite modest, and most, for example, are not eligible for food subsidies. In 1981 food subsidies averaged ¥4.5 per capita—only about 2 percent of the value of subsidies of members of households in which there was a state employee. Peasant housing is privately owned and its costs are borne entirely from peasant income. Peasants are not eligible for retirement, survivor, disability, maternity, and other benefits provided with state funds through the labor insurance system and they receive no travel or heating subsidies.

Subsidies for the health and welfare programs that exist in the countryside are financed through retained earnings of collective units and state budgetary funds allocated for "rural relief." In recent years the program financed from these two sources of funds have averaged about ¥4–5 per capita—with ¥3–4 from retained



THE WIDENING INCOME GAP

The modest 10 yuan subsidy received by the average Chinese peasant in 1982 amounted to a miniscule fraction of the nearly 900 yuan in price subsidies and benefits enjoyed by the average state worker. In recent years the gap has grown worse, as the higher prices paid to peasants since 1978 have not kept pace with the more than 70 percent increase in subsidies to urban workers during the same period.



SOURCES: Author's estimates based on Chinese State Statistical Bureau data. *Includes collective income, private income from subsidiary activities, and the cash value of in-kind consumption.
**Price subsidies and fringe benefits.

Artwork by John M. Yanson

Nearly one-fifth of China's national income is currently devoted to subsidizing the living standards of urban workers and their dependents.

earnings and about ¥1.5 from the state budget.

Thus all price subsidies and fringe benefits accruing to peasants total less than ¥10 annually, a miniscule portion of the benefits of privileged state workers.

Subsidies have grown substantially since 1978. Another ¥150 per year probably can be added to the subsidy received by each state employee, because of the government's decision to keep the retail prices of wheat flour and rice unchanged following the 50 percent increase in the state's procurement prices of cereals. Fringe benefits financed through the labor insurance system in 1982 cost the state almost two and one-half times those of 1978, although the number of state employees increased only 15 percent. Housing subsidies have also skyrocketed. The state completed an unprecedented number of urban housing projects totaling more than 350 million square meters of living space between 1978 and the end of 1982. Although rising wages and materials prices have pushed up unit construction costs by an average of 10–15 percent annually, rental charges per square meter have not been adjusted.

Cumulative subsidies of urban state workers have increased far more rapidly than nominal wages over the past five years. The average wage of state workers rose from ¥644 in 1978 to ¥836 in 1982, an increase of about 30 percent. Over the same period the value of subsidies and fringe benefits increased from ¥526 to almost ¥900.

Growing subsidies for food, housing, and other consumption goods have substantially enlarged the gap in real living standards between urban and rural areas. Even during the Maoist era, when the elimination of this gap was a priority policy goal and nominal wages of state employees stagnated, the hidden subsidies for urban workers grew dramatically. Although peasants have benefited since 1978 from the higher prices they receive for farm products sold to the state, the gap between the real income of state workers and peasants has widened, in large measure due to the growth of price subsidies from which urban workers benefit so greatly.

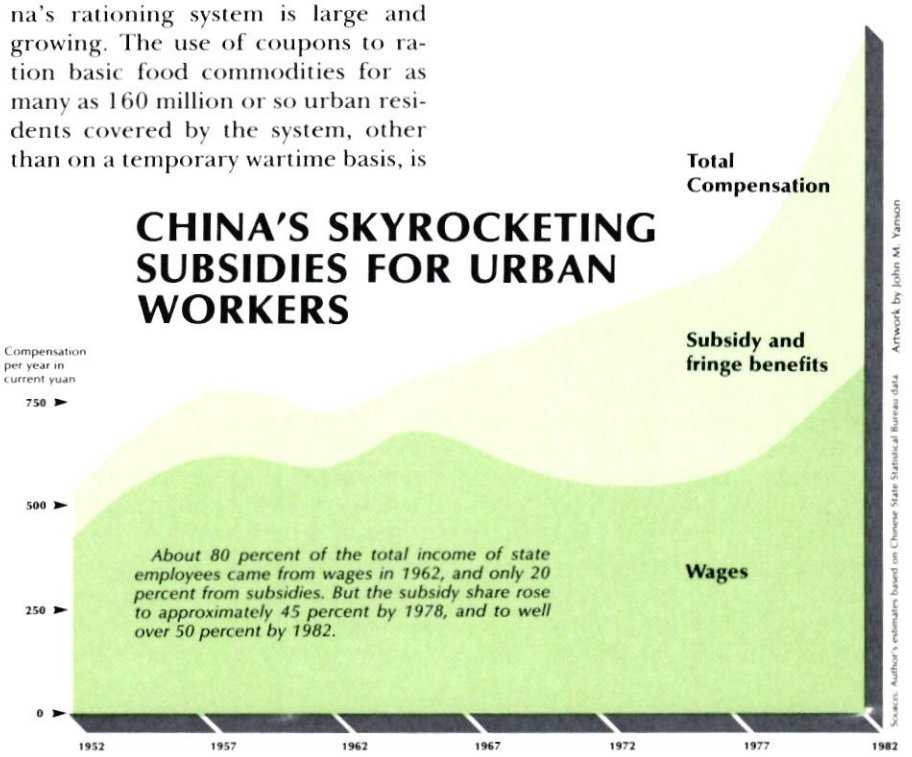
Subsidies have not only worsened the distribution of income but have inhibited the development of marketing. Indeed, the budgets of some local procurement and supply authorities can no longer cover the losses caused by the combination of rising purchase prices and fixed ration prices, with the result that state purchases of cereals have actually declined in some cases. This has thwarted the state's announced policy of increasing its purchases at higher prices.

Consequently, the state has become increasingly dependent on imported wheat to meet urban consumption requirements. But the two-thirds increase in wheat imports since the onset of reform in 1978 has been extremely costly to the state treasury. Wheat is imported at the world price but flour is sold at the domestic ration price, which has not changed since 1965 and is not even 10 percent above the price that was established in 1952. The subsidies necessary to resell imported wheat at an unchanging domestic price now cost the state several billion yuan annually.

Finally, the absolute cost of China's rationing system is large and growing. The use of coupons to ration basic food commodities for as many as 160 million or so urban residents covered by the system, other than on a temporary wartime basis, is unprecedented.

Moreover, the political costs of excluding the majority of China's population—the peasantry—from this urban rationing system could be escalating. As more peasants try to move to cities, the State Council has had to enforce ever more stringent regulations to stop them. The system of internal passports, which is supposed to prevent peasants from taking up permanent urban residence, is being supplemented with more strict regulations to deny rationed foodstuffs to those peasants who manage to infiltrate urban areas. Thus the personnel of the Ministry of Commerce, the state agency that administers the food rationing system, are now supplementing the internal security forces to prevent rural to urban migration.

Beijing has considered plans to reduce subsidies, particularly for basic foods and housing, but thus far any decision has been deferred for both technical and political reasons. Reducing subsidies would require a complex set of price changes and wage adjustments. The leadership also faces a fundamental dilemma.



On the one hand it is reluctant to make explicit the degree to which past policy has favored state employees and their dependents. Thus it would be unwilling to eliminate subsidies and raise wages enough to maintain the current relatively high standard of urban living. On the other hand, the leadership would be taking a risk if the wages of urban residents were not increased to fully compensate them for any subsidy that may be eliminated. Urban workers have come to regard such subsidies as a birthright rather than a benefit, and the leadership has been unable or unwilling to challenge this view.

The reforms have clearly intensified the old game of economic survival.

Bureaucratic Competition

Susan L. Shirk

Although some communist officials abhor competition and try to avoid it, the recent economic reforms have increased competition throughout China's economy. Enterprises want to break into new domestic or international markets—and protect their old markets—in order to earn more profits and foreign exchange.

Because prices are set by the state and the other monopolistic conditions of the command economy are still in effect, this rivalry is more akin to bureaucratic warfare than true "market" competition.

The contest between the heavy and light industrial ministries is particularly revealing. The Ministry of Machine Building (MMB), for example, recently decided to enter the lucrative consumer goods market for washing machines and refrigerators. When the Ministry of Light Industry resisted this challenge to its monopoly, the State Economic Commission had to call a meeting among several ministries to divide up the burgeoning market for 10 high-volume consumer products. MMB emerged victorious, with a sizeable share of the washing machine and refrigerator business. (In washing machines, it was awarded the multi-cycle and washer-dryer machines, while the Ministry of Light Industry kept the simple machines.)

Such turf warfare is commonplace. The Petroleum and Geology ministries have fought for control over offshore oil exploration, and the Finance Ministry has clashed with the industrial ministries and local governments over tax issues. Perhaps the only unique feature of the on-going heavy–light industrial dispute is its one-sided results.

Of course, the Ministry of Machine Building enjoyed advantages from the start. Since the early 1950s, for example, the ministry has benefited from investment policies that have emphasized heavy industry, and its plants have been allowed to supply equipment to domestic enterprises under virtual monopolistic conditions. Not surprisingly, the value of the ministry's output expanded at a rate of about 20 percent a year for almost three decades. By 1978 nearly one-third of all industrial enterprises in China were machinery factories. (With the increase in the number of processing plants, the number is now closer to one-fourth.)

When other industrial ministries began to modernize their factories with sophisticated equipment imported from abroad, the MMB demanded a policy of "buy Chinese." It was successful in reestablishing under its control a 1950s institution, the special Equipment Approval Division, which has the power to approve all factory equipment imports, even those for joint ventures. Requests are first submitted to the State Planning Commission, then passed on to the division. If the ministry determines that one of its factories can produce the same piece of equipment (regardless of cost), it vetoes the import. In a few instances, the MMB has even prevented the Metallurgical and Petroleum ministries from sending representatives abroad on shopping missions. Several interministerial disputes over equipment imports have had to be resolved by the State Economic Commission or State Planning Commission. Machinery industry protectionism has not always prevailed, however, especially when a foreign firm is willing to commit considerable capital and technology to its China project. But at the very least, the MMB has caused delays.

The political strength of heavy industry goes back to the First Five-Year Plan period (1953–57) when the Chinese adopted the Soviet heavy industry-first growth strategy. According to Chinese economic officials interviewed, heavy industry's priority status meant that the most talented cadres from the provinces were recruited into the heavy industrial ministries. From that time onward, it has been widely recognized that the leadership of the heavy industrial bureaucracies is of superior caliber.

The dominance of heavy industry is reflected in many features of Chinese economic life: Workers in heavy industry are paid on a higher wage scale than workers in light industry; the managers of major heavy indus-

Susan L. Shirk is associate professor of political science at the University of California, San Diego. She is currently researching and writing a book on the implementation of the post-1978 economic reforms in China, with special emphasis on foreign trade and investment. During visits to China in 1980, 1981, and 1982 she interviewed factory managers and economic officials, and plans to spend the 1984–85 year in China conducting research as a Rockefeller Foundation International Relations Fellow.

trial plants such as the Anshan and Wuhan Iron and Steel companies have a cadre rank higher than some provincial governors; the heavy industrial ministries have maintained central control of more of their own factories than have the light industrial ministries, which have lost control of most of their factories to local authorities; the heavy industrial ministries have successfully challenged the monopoly of the Ministry of Foreign Economic Relations and Trade (MOFERT) to establish their own trading companies, while the ministries of Light Industry and Textiles have (with a few exceptions) been unable to do so; and taxes and profits from heavy industry constitute the lion's share of the central government's fiscal base. Statistics bear out the heavy industry sector's undiminished power: During 1982 and the first nine months of 1983, heavy industrial output far surpassed the comparable growth rate of light industry; their respective performances were 10 percent and 6 percent in 1982, and 13 percent and 8 percent thus far in 1983.

The preeminence of heavy industry means that when the ministers of Machine Building, Metallurgy, Petroleum, and Coal assert themselves, they usually prevail. This is equally true of the ministries in charge of nuclear power, aviation, electronics, armaments, and aerospace, which are the agencies partially or wholly under the military.

Heavy industry supporters certainly appear to have had a hand in the effort to recentralize industrial investment since 1982. They seem to share the conviction held by some leaders that the economic reforms went too far, causing the central government to lose control over investment spending. Beijing's increased control over major national energy and transportation projects could mean more investment in heavy industry from the center, and increased demand for coal, steel, and large machinery.

In short, the officials leading China's heavy industrial sector appear to have adapted to the new competitive situation with considerable success. But like the executives of some US firms who are dependent on government contracts, these officials prefer the predictability of selling to one large bureaucracy to the risks and uncertainties of competition. ₹

Policies that favor the provinces have left Beijing with mounting budgetary problems.

Fiscal Relations

Audrey Donnithorne

Since 1949 China has experienced a number of swings between decentralization and recentralization of the economy as a whole. The most recent shifts in the fiscal system, as in other sectors, have generally been toward greater local autonomy. These changes form part of the intended reconstruction of economic institutions for the purpose of clearly delineating responsibility. However, some of the year-to-year changes are not so much components of a grand plan as reactions to immediate strains and tugs-of-war between different levels of the administration.

During my visit to China in 1982, I found that at least four different methods of revenue-sharing between provinces and the central government were being practiced. In that year the majority of provinces reportedly abandoned the system of dividing only the industrial and commercial tax with the central government in favor of a system of dividing all local revenues except customs duties, profits of certain key enterprises, the newly introduced income tax (payable by resident foreigners and a very few Chinese) and tax on banks. In some provinces practicing this type of system, the composition of the revenues to be divided may have differed somewhat from this model.

On the average, some 80 percent of local revenues were reported to have been retained by the provinces in 1982. This average was probably calculated without taking into account the three cities of Shanghai, Beijing, and Tianjin, which have provincial-level status. In 1980, Beijing retained only 36.5 percent, Tianjin 31.2 percent, and Shanghai a mere 11.2 percent of its revenues. These cities act as taxing agents, earning large profits for the state by charging high (state-fixed) prices on the consumer goods they sell to the rest of China. Thus, these cities enjoy large revenues despite the small percentage of tax receipts they retain.

The second tax-sharing method found in 1982 was that of Shanxi Province, which still used the system previously practiced by the majority of provinces—dividing only the industrial and commercial tax. This may have held true for some other provinces, as well. The third method of revenue-sharing was that of Guangdong, which in 1982 was probably still paying Beijing a fixed sum, as in previous years, rather than a percentage of total revenues or a percentage of a particular tax. This may have been to encourage Guangdong to fulfill its role as a modernization pace-setter. Fujian, which has also received greater financial autonomy, has also had its fiscal relations with the center fixed in terms of an absolute sum; in 1980 this probably took the form of a transfer to Beijing, but in 1982 Fujian may have received a central government subsidy.

The fourth method of revenue sharing in practice in 1982 consisted

Since 1969 Audrey Donnithorne has been a professorial fellow in the Research School of Pacific Studies at the Australian National University in Canberra. She is the author of China's Economic System *(1967) among other works on the Chinese economy, and in 1980 and 1982 conducted numerous interviews in China with fiscal authorities.*

of financial aid. Eleven provinces are known to have received central government subsidies (*see* Table 1). Some provinces fluctuate in and out of the deficit category, which explains why the list of deficit provinces in 1982 is likely to differ slightly from that of 1980. However, there are five or six hard-core deficit provinces, all sparsely populated and strategically located. Guizhou seems the nearest to a province that qualifies for a subsidy on the basis of poverty alone, though its subsidy also may be used for military defenses against nearby Vietnam. The subsidies to other deficit provinces may include disguised military expenditures.

The changes in fiscal relations in 1982 clearly favored the provinces. By giving the central government a share of their local tax revenues, the dozen or so provinces that split the industrial and commercial tax with Beijing were allowed to keep a larger share of this tax. As a result, the majority of China's provinces won the right to receive a larger percentage of a growing tax base—the industrial and commercial tax, which rises as total output rises—in exchange for giving Beijing the right to share in local tax revenues, which are declining. This gave the provinces "automatic creep" in their favor, while Beijing got a percentage of declining profits rather than of rising tax receipts.

Enterprise profits, a major source of local revenues, have fallen in the past few years because of the management reforms that permit enterprises to keep more of their profits. In addition, restrictions on raising prices despite rising costs have forced many enterprises to operate at a loss. These *de facto* consumer subsidies, exceeding ¥32 billion in 1981, show up as reduced profits of state enterprises and not as specific subsidy items on the expenditure side of the budget. Meanwhile, total output has risen over the last few years, and with it the receipts from industrial and commercial tax. The new fiscal system has reduced Sichuan's tax remittances to Beijing, for example, from ¥600 million in 1980 and somewhat over that figure in 1981 (despite the disastrous floods of that year), to some ¥500 million in 1982.

The revamping of the system in 1982 in favor of the provinces may

Table 1: Central Government Subsidies to Provinces

China has five or six hard-core deficit provinces that depend on Beijing for annual subsidies

	1980 subsidy in million		Population in million persons, year-end 1979	Subsidy per capita in		Ranking by subsidy per capita
	Yuan	Dollars		Yuan	Dollars	
Inner Mongolia	1,063	709	18.52	57	38	5
Heilongjiang	886	591	31.69	28	19	6
Xinjiang	827	552	12.56	66	44	4
Guizhou	478	319	27.31	18	12	7
Tibet	438	292	1.83	239	160	1
Qinghai	365	244	3.72	98	66	2
Jilin	300	200	21.84	14	9	8
Yunnan	300	200	31.35	10	6	9
Ningxia	273	182	3.64	75	50	3
Guangxi	270	180	34.70	8	5	10
Jiangxi	138	92	32.29	4	3	11
Total	5,338	3,563	219.45	24	16	—

SOURCES: World Bank, Chinese Ministry of Finance, and Chinese State Statistical Bureau.

Table 2: Beijing's declining share of revenues collected by all levels of government

In 1957 the central government directly collected more revenues than it spent, but in recent years its revenues have met less than a third of its expenditures

	Direct central budgetary revenues, including foreign borrowing (million *yuan*)	Central government expenditures (million *yuan*)	Direct central government revenues as percent of central government expenditures
1957	22,738	21,829	104
1965	15,607	28,984	54
1971	11,936	43,567	27
1977	11,385	39,370	29
1978	16,463	52,098	32
1979	18,756	64,589	29

SOURCES: World Bank and from Chinese Ministry of Finance.
Note: Direct revenues of central government exclude transfers from provincial-level units, but central government expenditures include transfers to provincial-level units.

Table 3: Military Expenditures

Beijing's rising share of military costs is contributing to its financial problems

	A Total central government expenditures (million *yuan*, current prices)	B Overt military expenditures (million *yuan*, current prices)	C CIA estimates of total military expenditure (million *yuan* in constant 1974 *yuan*)	B as% of A	C as % of A
1957	21,829	5,511		25	
1965	28,984	8,676		30	
1978	52,098	16,784	41,000	32	79
1979	64,589	22,266	45,000	34	70
1980		19,380	42,000		

SOURCES: Chinese Ministry of Finance; speech by Minister of Defense on December 1, 1981; *Beijing Review*, January 11, 1982; and R. G. Mitchell, 'Chinese defense spending in transition', in *China Under the Four Modernizations*, Part 1 (Joint Economic Committee of Congress, Washington DC, August 1982), p. 606.

have been Beijing's concession for the ¥7 billion bailout from the provinces in 1981. In that year, the central government ran an ¥8 billion deficit, while some provinces ran surpluses. (These deficits and surpluses are concealed in the "state budget," which is an aggregation of the revenues and expenditures, excluding inter-level transfers of the budgets of the central government and provinces, all the way down to the counties and lower.) Beijing asked the provinces to lend it ¥7 billion or more in 1981, according to a December 12, 1981 *Xinhua News* report that claimed "this measure won the support of the local governments at various levels, almost all of which have contributed their respective shares." The implication is that some local authorities did not accede to this demand. After all, the provinces had been assured that the fiscal arrangements begun in 1980 would remain in force for five years. Such a large demand on their resources the very next year might have required some form of compensation to sweeten the pill. On the other hand, if Beijing in fact used its power over the People's Bank of China to confiscate the provincial budgetary surpluses, the provinces may be more careful in the future not to realize surpluses.

Another sign of the government's growing fiscal problems is its increasing dependence on revenue transfers from the provinces (*see* Table 2). In 1957, the central government directly collected more revenue than it spent. By 1965, however, its revenue met only 54 percent of its expenditures. After the Cultural Revolution, it was able to cover less than a third of its expenditures from its own revenue, and depended on remittances from the provinces for the rest.

These figures in fact underestimate the central government's financial weakness on two counts. First, the greater part of extra-budgetary funds accrues to local authorities and to the enterprises under them. These extra-budgetary funds include important regular sources of revenue such as retained depreciation funds and profits retained, either licitly or illicitly, by enterprises and their local bureaus or ministries. Other items include local budgetary surpluses carried down from previous years, sundry local surcharges to taxes, taxes on public utilities, and a host of other imposts of various kinds. In recent years, extra-budgetary revenues may have amounted to the equivalent of around half of total budgetary revenues. Secondly, the revenue figures include receipts from domestic bond issues and from foreign loans borrowed by the central government or its agencies, excluding the banks. In most countries loan receipts are not included in a government's revenue figures, but are introduced as a balancing item.

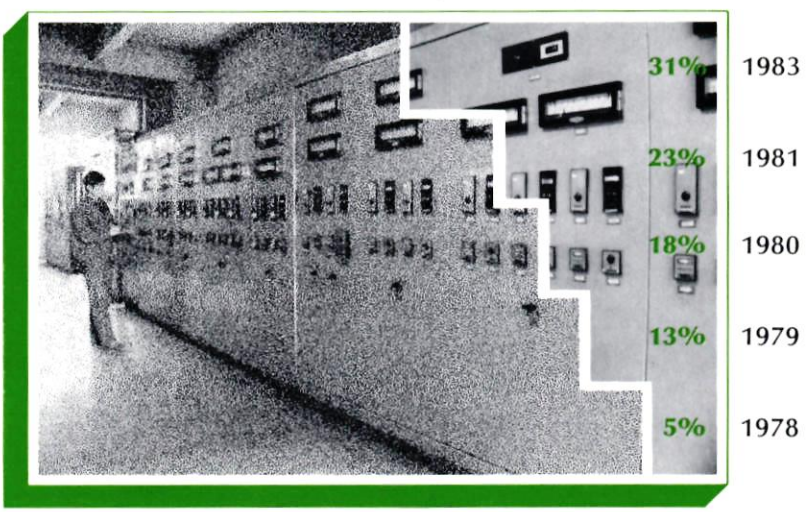
The practice of using foreign loans to balance the budget first became significant in 1979. Taking the figures at their face value, the 1979 loans of ¥3.7 billion constituted only 3.4 percent of the central government's budgetary revenues from all sources, but constituted 22 percent of the revenues, excluding loans, collected by the central government itself. Had Beijing not borrowed from abroad in 1979, its own revenues would have covered only about 24 percent of its expenditures. This would have forced the central government to reduce expenditures (swollen in that year by the war with Vietnam), squeeze even more from the provinces, or run a larger deficit.

Adding to these problems is the rising share of the military budget borne by Beijing. Military expenditures were 34 percent of all revenues collected by the central government in 1979. That is the last year for which published budgetary figures on revenues and expenditures were broken down by level of government. Though military costs were higher in that year, because of the war with Vietnam, CIA estimates place China's military expenditures much higher—at roughly 70 percent of the central government's expenditures in recent years (*see* Table 3). But this would have squeezed out nonmilitary expenditures to such an extent that one must either doubt the accuracy of the CIA's estimates, or consider the possibility that the central government pays only part of the military's costs. It is likely that the cost of building strategic roads and other defense facilities are borne by the provinces. This would explain Beijing's large subsidies to some provinces in strategically important areas. One must also remember that China's military is in some small measure self-financing, since factories under military control sometimes make money on civilian sales and exports.

Overall, the government's financial circumstances will continue to be difficult in the foreseeable future. Relief in the form of rapidly rising oil production is doubtful while the chances of any significant tax revenues from foreign enterprises in China are uncertain. No quick prospect of relief for the central government's budgetary problem is currently in sight. ₹

PROFITS RETAINED BY STATE ENTERPRISES

As percent of total profits



Source: Ministry of Finance, Beijing.

BUSINESS-BUILDING BOOKS
from the National Council for US-China Trade

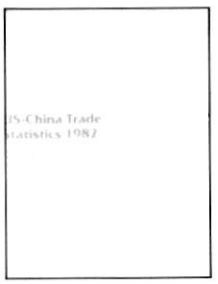
China's Provinces: An Organizational and Statistical Guide

Millions of dollars worth of business is now being carried out directly with the provinces, which have substantial holdings of foreign exchange and the authority to spend it. This single volume helps you to find the right contacts.

China' Provinces has over 50,000 entries in all, including information on how to contact: 16,000 organizations; 4,200 Chinese officials; 3,800 local government agencies; 900 foreign trade corporations; 2,100 corporations in all branches of industry; all local financial institutions; 5,800 factories; and 2,600 research institutes, professional associations, universities, societies, and hospitals. Hundreds of statistics are provided on each province, with trends and breakdowns.

476 pages, 8½" x 11". 1982.
$285 ($185 to members), $235 to academic institutions.

US-China Trade Statistics 1982



US-China Trade Statistics 1982 provides detailed information on trade between the United States and the People's Republic of China during calendar 1982. It lists some 1,600 products exported to and 2,800 products imported from the PRC, with both quantities and values in each of the past five calendar years.

The latest edition of the National Council's annual statistical compilation includes expanded information in a new format. The $5.19 billion worth of imports and exports can be quickly and easily cross-referenced by seven-digit tariff and SITC-based classification numbers or SITC (Schedules A, B and E) groupings.

This volume includes imports and exports at three levels of specificity, all-new tables on US textile imports from China 1978-1982, and tables illustrating recent US trade trends with the PRC and China's trade with selected foreign countries.

140 pages, 8½" x 11". 1983. $40 (free to members).

American Firms Importing from the People's Republic of China

The past five years have witnessed a dramatic increase in both the number of firms doing business with China and in the diversity of imported products. **American Firms Importing from the PRC** tells you who imported what from the more than $2.2 billion worth of goods the US purchased from China last year. This directory—the first of its kind—lists, indexes, and cross-references over 2,300 companies. Each listing includes the company's name, address, telephone and telex numbers, cable address, responsible executives, products imported, ports used, business volume, and bank references.

Also included is a cross-referenced index of more than 200 companies engaged or interested in countertrade—an ideal guide for every exporter who may need to take partial payment in goods.

93 pages, 8½" x 11". 1982. $85 ($60 to members).

China Business Manual

China Business Manual has been described by *The Asia Mail* as "concise . . . compact . . . exhaustive, eminently practical . . . [and] indispensable" to anyone doing business with China.

The **Manual** and its **1982 Supplement** contain detailed information on all commissions, ministries, corporations, and organizations in China, complete with street and cable addresses and telephone numbers. The contents are organized by: political structure, agriculture, energy, finance, foreign and defense affairs, foreign trade, media and advertising, transportation, communications and travel, science and technology, and provinces and municipalities.

Both books are in a convenient 4" x 9" size. The 322-page **Manual** contains over 5,000 entries, and the **Supplement** includes more than 700 new entries and other changes.

***Manual** and **Supplement** package: $48 ($40 to members).*
***1982 Supplement** only: $18 ($10 to members).*

Mail to: National Council for US-China Trade
Publications Sales Department
1050 Seventeenth Street, NW—Suite 350
Washington, DC 20036, USA

- ☐ My check for US$_____ is enclosed.
- ☐ Please bill me.
- ☐ Please send me information on your other publications.
- ☐ Please send me information on membership in the National Council.

Name _____

Organization _____

Address _____

_____

I would like to purchase:

	(circle applicable price)	
___ copy/ies of **US-China Trade Statistics 1982**	@ $40	= $ ___
___ copy/ies of **China's Provinces: An Organizational and Statistical Guide**	@ $285 / $185 / $235	= $ ___
___ copy/ies of **American Firms Importing from the People's Republic of China**	@ $85 / $60	= $ ___
___ copy/ies of **China Business Manual** package: **1981**, plus **1982 Supplement**	@ $48 / $40	= $ ___
___ copy/ies of **China Business Manual—1982 Supplement**	@ $18 / $10	= $ ___
Airmail postage and handling @ $2.00 per copy		= $ ___
	TOTAL	$ ___

书刊介绍

1982–83 China Official Annual Report, English edition, edited by New China News Photos Company. Hong Kong: Kingsway International Publications, Ltd, 1982. Distributed by Far Eastern Economic Review, Tanjong Pagar, PO Box 89, Singapore 9108. 939 pp. $60, plus $7 for surface or $17.50 for airmail delivery.

This second in the series of official yearbooks covers 1981 developments, with some information through March 1982. The format of this very useful book closely follows that of the first edition, and includes a general introduction, chronology of the main events in 1981, and detailed information on topical subjects (politics, law, military, foreign relations, finance, economics, science and technology, culture, education, health, sports, society, and names in the news). New coverage includes brief information on each of China's provinces and additional sectoral reports on metals and metallurgy, the chemical industry, astronavigation, and electronics. Many new maps, charts, and tables are presented. Relevant laws and statistics are provided in each section.

Law Annual Report of China 1982/3, English edition. Hong Kong: Kingsway International Publications, Ltd., 1982. Distributed by Far Eastern Economic Review, Tanjong Pagar, PO Box 89, Singapore 9108. 536 pp. $85, plus $7 surface or $17.50 airmail delivery.

This official handbook on China's legal system and laws certainly reaffirms China's "open door policy," if one measures that policy by the quantity of information made available to foreign firms. The book includes an introduction, chronicle of events in China's legal system in 1981, selected laws and regulations, discussion of legal studies in China, international legal exchanges, and an appendix and index.

The major portion of the book—224 pages—is devoted to the texts of important laws and regulations promulgated in 1981 through early 1982 and those promulgated before 1981 but still in effect. There is especially good coverage of those laws affecting foreign trade and investment. The volume also includes a catalog of State Council bulletins in 1980, and the appendix contains a list of important rules and regulations issued between September 1949 and the end of 1979. This book, together with the *1982/3 China Official Annual Report* (*see* above) can be ordered as a package from Far Eastern Economic Review at $130, plus $14 for surface or $35 for airmail delivery.

Collection of Laws and Regulations of China Concerning Foreign Economic and Trade Relations. Published by China Market Publishing Corporation, Beijing, and David Syme and Company, Australia, 1983. Distributed in the US by China Consultants International, 1511 K Street, NW, Washington, DC 20005. 760 pp., numbered separately by section. $250, including supplements for one year.

This loose-leaf collection is the most complete and up-to-date volume of Chinese trade and investment laws currently available. Its conveniently tabbed sections cover general legislation and most important laws (through January 1983) governing foreign investment, foreign trade administration, special economic zones, foreign exchange controls, taxation, customs, inspection and quarantine, resident offices of foreign enterprises, trademarks, resources, contracts, arbitration, and maritime transport. The Chinese and English language texts of the laws and regulations are displayed on facing pages. There are no notes or commentaries.

This publication competes directly with Oceana's *Commercial, Business and Trade Laws: The People's Republic of China* (*see The CBR*, November–December 1982). Oceana's publication, though broader in scope, does not include Chinese language texts and includes laws only through April 1982. At $125, it is also less costly. Supplements will be available at a separate charge, but none has been issued yet.

When the content of two collections is similar, currency is the most important factor in selecting a loose-leaf legal service. While *Collection of Laws and Regulations of China Concerning Foreign Economic and Trade Relations* is now the leader in the field, the frequency of the updating service will be the prime factor in establishing which of these two important publications will maintain that position.

BOOKS RECEIVED

On Introducing Technology to China, by Liu Jing-Tong. New York: East Asian Institute, Columbia University, 1983. China-International Business Series. 72 pp. $7.

Economic Development and Social Change in the People's Republic of China, by Willy Kraus. Translated by E.M. Holz. New York: Springer-Verlag, 1982. 432 pp. $48.

Technology, Politics, and Society in China, by Rudi Volti. Boulder, CO: Westview Press, 1982. 255 pp. $27.50.

The Transition to Socialism in China, edited by Mark Selden and Victor Lippit. Armonk, NY: M. E. Sharpe, 1982. 326 pp. $25 hardcover; $12.95 paperback.

Books and business guides submitted for possible review in The China Business Review *should be sent to the National Council's book editor, Marianna Graham.*

Who is the driving force for technical change in China today?

The Chief Engineer

William A. Fischer

Any society struggling to modernize must first develop the capacity to create or adapt to new technology, disseminate it, and then apply it on the factory floor.

But where does new technology come from in China? And how is it disseminated? These are the overriding questions I have been exploring since 1980 while on the faculty of the Dalian management training center, where the US Commerce Department has sponsored an executive training program for mid-level and senior Chinese managers.

My on-site research along with more than 100 personal interviews over a three-year period led me to the somewhat surprising conclusion that technical know-how in China comes pretty much from the same sources it does in America. It comes from the media, chance encounters between individuals from different workplaces and professions, and exposure to new products, especially foreign products.

But my most interesting finding was that China's network of 8,000 or so elite research establishments, on which the government lavishes about 1.5 percent of the GNP each year, appears to play a relatively modest role in the process of technology dissemination in China.

To better understand this process there is principally one place to go—down. Down from the ministry-level science and technology units that profess to be in charge of new technology, down from similar research outfits in the provinces, right on down to the office door of the chief engineer in a Chinese factory. It is at this level in the system that efforts to modernize industry must ultimately succeed or fail.

Grass Roots R&D

The job of supervising research and development in a typical Chinese enterprise lies with a vice-director, who is usually also the chief engineer. His or her educational level is generally low, surveys show. But it is my impression that important enterprises normally will have a chief engineer with a university education in a technical field. Chief engineers are responsible for all technical activities, whether for new-product development or improvements in existing processing technology. They supervise a management structure that is remarkably uniform throughout the country, owing to past Soviet influence on organizational design. For R&D activities, this normally means that under the leadership of the chief engineer there is a group involved in product design and another in charge of new and existing production processes. The chief engineer most often is in charge of the enterprise's technical information office, quality control, and the trial production workshop. Furthermore, the chief engineer leads the activities of the technical teams located in each of the enterprise's workshops. In most cases, an enterprise that establishes a research institute will locate it within the product design sphere of the chief engineer's activities. The practical result of all this is that there is typically a "technical command center" within most Chinese enterprises that handles all innovative decisions.

Unfortunately, there are many things about the average Chinese enterprise that still appear to discourage the innovative process, despite the management reforms enacted since 1978. A Chinese factory is analogous to a single-product-line division in a Western enterprise, for example, and more closely resembles a cost-center than a profit-center. It has virtually no ability to diversify and usually enjoys a guaranteed market, since the state is obligated to buy whatever the planners tell it to produce. Until very recently, a Chinese enterprise had to practice "socialist cooperation" by sharing any and all of its technical innovations with sister facilities under the same ministry. It is within such an environment that most of the future technological growth that China desires will have to take place.

Financing Modernization

Funds for R&D activities within an enterprise come from a variety of sources, each of which may influence the project selected. The bulk of R&D funds comes mainly from an enterprise's own working capital. In the past, funds were provided by the state in return for the profits remitted by the enterprise. Today, however, under the policy of limited autonomy, most of an enterprise's working capital comes from retained earnings, thus creating a direct link between competitive performance and investment in technical innovation. Since welfare funds and bonuses also come out of retained earnings, there are strong counterpressures to spend these funds on consumption rather than on investment.

A second major source of R&D funds is an enterprise's superior bureau or corporation. These funds frequently come complete with specific project assignments made by some superior body. The assignments vary according to the position of an enterprise within the economic system: The closer it is to a ministry, the more likely it is that higher authorities will assign it research projects. Often

these projects originate in the annual science and technology plans of the enterprise, which were submitted to the scientific and technical office of the bureau or corporation for approval. Consequently, such projects do not represent unexpected nightmares for enterprises as they are almost always negotiated between the higher authorities and enterprise before the assignment is made. Additional R&D funding can also come through contractual arrangements from local scientific and technical commissions, as well as from other enterprises, including customers.

The decision about which projects to pursue is ultimately made by the chief engineer, and influenced of course by the need for external funding. A series of screenings and evaluations are conducted, although in a less rigorous and less formal fashion than in the West. A survey of 45 market-oriented enterprises that I conducted in 1983 suggests that the most important criteria in selecting projects are: ▶the magnitude of capital required to develop the innovation; ▶the technical, managerial, and manufacturing skills and resources required; and ▶the amount of worker training needed.

As might be expected in enterprises with more limited autonomy, a project's material requirements, importance to the nation, and compatibility with the enterprise's existing activities are far more important criteria than market forces. In either event, project selection is normally carried out by the chief engineer in continuous consultation with the plant's technical personnel. For this reason, there is not the degree of formality in proposal review, selection, or rejection in Chinese enterprises that there is in the West; proposals not favored by the chief engineer are simply discouraged before they get to the point of a formal decision.

Developing a Plan

Each fall every Chinese industrial enterprise assembles a science and technology plan that outlines the proposed portfolio of innovative activities that an enterprise intends to support during the coming year. Compiled by the chief engineer's staff and the various technical groups, this plan covers objectives, anticipated product properties and characteristics, anticipated funding requirements, progress charts for each task, lists of equipment needs, and the extent of cooperation with other agencies that would be required by the planned activities. The plan is submitted to the scientific and technical offices in the corporations and bureaus directly above an enterprise for review and approval. The plan usually highlights the one or two large projects for which the enterprise needs financial assistance, and provides only a cursory overview of the remaining portfolio. It is from these plans that local corporations and bureaus develop the plans that they, in turn, send through the industrial hierarchy for approval and support. A good number of the ministerial plans submitted to the State Science and Technology Commission, and ultimately included in the national science and technology plan itself, are drawn from these enterprise plans. In short, enterprises not only supply the industrial capacity to turn the national R&D plan into reality, but they supply much of the knowledge and insight that initially go into the plans.

Although the national R&D plans help the central government formulate national scientific and technical policies, the actual impact of these plans on local R&D activities appears far smaller. Many of the R&D managers I interviewed appeared to be unfamiliar with the particulars and the rationale of the national plan. This was especially evident in smaller enterprises under municipal authorities, which seem quite removed from the policy dictates of Beijing. This lack of clarity about the R&D plan has apparently led to some fragmentation within the economy (more than was evident in 1981 and 1982, but still less than during the period of experimentation in 1980), which has introduced diverse goals into what was once a more centrally orchestrated system.

In one survey of 15 centrally controlled enterprises and 18 municipally run enterprises, I found that the national R&D plan was the least important source of direction in new product planning for both groups. In another case, Shanghai's planners tried to integrate all local television and television-related manufacturing facilities into a single organizational entity. They managed to bring at least 45 plants together, but two others absolutely refused to participate: they wanted to maintain separate indentities and safeguard their technical expertise. The case of the Tianjin consumer durables factory is also instructive. The plant reportedly failed to inform its superiors of a "boot-leg" project that was funded out of its retained earnings, until a new product was perfected that gave the plant a technological lead.

Such examples obviously suggest that central planners cannot manage all of the nation's scientific and technological resources, and that the new-found discretion exercised by enterprises can frustrate efforts at coordination. But greater enterprise autonomy may also have desirable consequences by increasing the local incentive for technical change among enterprises that stand to profit from such activities. This increases the total amount of effort being expended.

A New Breed of Salespeople

Marketing, long absent from Chinese industry, is fast becoming a critical factor in enterprise success. A scientific instruments enterprise in Beijing now maintains a marketing staff of nearly 30 individuals (all with technical backgrounds) headed by the plant's former chief engineer, who still takes charge of new product development. A committee coordinates the marketing and new product planning functions under the leadership of the new marketing director, factory director, vice-director for technical activities, and the directors of planning and finance.

This marks a departure from the not-so-distant past, when marketing and R&D were only tangentially connected. For years, the "sales and purchasing" offices in most Chinese enterprises typically spent some 80 percent of their time in purchasing and only 20 percent in sales, according to several sources.

The reemergence of market forces as an important element in the industrial environment has changed all this, while providing enterprise managers with a new source of ideas for R&D. Even the managers of heavy industrial combines are beginning to pay more attention to market needs. This is particularly true in those plants forced to seek additional orders following the central government's 1979–80 budget retrenchment. As a result, it is no longer unusual to find such managers visiting old customers in an attempt to

drum up business. Some plants have even switched out of heavy industry altogether, one vivid example being the industrial freezer factory that began making small "shop-size" freezers, home refrigerators, and popsicle-making equipment. Another is the high-pressure valve factory that switched its emphasis to the needs of fishermen. A third is the Dalian machine tool factory that now assembles home washing machines.

As might be expected, China's less centrally controlled light industrial enterprises were the first to take marketing seriously. A Tianjin electronics firm, for example, has been sending its quality control people to visit one or two customers a month to better understand their needs. Technical staff reportedly participate in these marketing visits. Notes the factory director, who has led a few visits himself: "Engineers are better at selling than marketing people because they understand the product better."

A Shanghai television plant has arranged periodic "store meetings" that bring together disgruntled customers with local department store representatives and the plant's design, process technology, and quality-control people. In the apparel industry, factory staffs often set up booths on "free-trade" streets of major cities (where individual entrepreneurs are allowed to run private stalls), to gather first-hand impressions from customers.

Imitating the Japanese

Official Chinese publications give the impression that the country is engaged in a large-scale effort to copy foreign technology. The official line is that all plants must share any know-how gleaned from foreign products, and not import any foreign item that has already been successfully duplicated. According to an August 25 commentary in the *Guangming Daily*: "Initiation of any item of technology or equipment should be based on the principle of importation by one unit with the results shared by brother units. . . . After the import of technologies, if the equipment involved is found to be within our power to produce, no more such imports should be repeated so as to safeguard the development of industry in our country."

Despite the official encouragement given to "reverse" engineering, the fact remains that the Chinese are probably the least successful copiers in Asia. The PRC admires and seeks to emulate the success that Japan enjoyed throughout the 1950s–60s when that country acquired large amounts of foreign technology. But what the Chinese fail to grasp is that the Japanese maintained a substantial R&D program aimed as assimilating, adapting, and improving foreign prototypes.

The Chinese have not done this to the same degree. In the first place, knowledge of foreign technologies and practices appears to be unequally distributed throughout Chinese industry. Technical managers seem to spend a considerable amount of time going through Western journals and trade magazines in search of information about international technical trends. Access to such material, however, often tends to be a matter of chance. Such information also tends to be so fragmentary that it is of little practical use. Some ministries have tried to improve information access by publishing circulars that highlight international trends and compare the specifics of both domestic and foreign competitive products.

I did visit one factory where the ministry had established a "united committee on foreign information." Its activities included collecting foreign patents, standards, product descriptions, technical documents, and historical documents on the industrial development of leading foreign enterprises. The committee had established a center for foreign information analysis and disbursal, and committee members were reminded to encourage visits by foreign technicians. Yet, despite this commitment to learning about foreign technology, the design of the factory's product looked at least 50 years behind the times. Moreover, the only product this factory was beginning to produce through imitation had come to the factory's attention totally serendipitously, completely apart from the parent ministry's information-gathering process. An overseas relative of one of the workers chanced to bring the product with her during a visit to China. The worker brought the item to work and it was disassembled and reverse-engineered in order to develop the basic plans for what has become a new product offering.

This case is not unique. Most reverse-engineering successes appear to be attributable to the efforts of individual factories. The deservedly famous Chinese thermos bottle, for example, has recently been augmented by a model that includes a pumping mechanism, copied directly from an imported item. Chinese bicycle factories are beginning to import a few sample foreign 10-speeds to study for defensive purposes, in case the Chinese ever give up their preference for the heavy-duty, single-speed behemoth that is today's staple. In one consumer-goods plant the manager explained how his factory's soon-to-be-unveiled product was taken from a Japanese design: "We designed the product independently but, of course, we did refer to Japanese products as samples. First, we analyzed the characteristics of the entire Japanese product, then we opened it up to analyze the parts and process. Third, we developed our own model."

Some factories ask local import-export corporations to obtain samples and information for them. One engineer in an electronic components factory claimed that he often borrowed samples from trading corporations and neighboring factories in his search for new designs. Similarly, the manager of a machine tools plant spoke of sending technicians to Tianjin to observe a new American gear-cutting machine that had just been imported.

These individual efforts are sometimes remarkably successful. According to a 1983 report by members of the Shanghai municipal government's Economic Research Center, a recent survey showed that 11 foreign products imported by the city's electric machinery plants had been copied, reproduced, and exported within one year of the time the products had been imported. The report added that the average electric machinery plant normally requires two-to-three years to import, copy, and export a product from foreign design.

But my personal observations support the view that the Chinese are fairly law-abiding corporate citizens. One Chinese enterprise I studied restricted access to the foreign technology as it was supposed to do under its contractual agreement with a foreign company. Another Chinese enterprise carefully avoided exporting to foreign markets that by mutual

agreement were "off-limits."

The barriers of the past, which often prevented Chinese enterprise technical personnel from interacting directly with foreign customers or equipment suppliers, are being lifted, though the actual decision as to what sort of technology will be purchased by a particular factory is still not a clear-cut one, nor is it entirely left to the factory's discretion. In most situations, it appears that a variety of "higher authorities" play a role in the decision-making. A cotton textile-weaving mill, for example, was chosen by its Provincial Textile Bureau for expansion to enter the export business. The textile bureau made all the important import decisions regarding technical issues such as the number, size, kind, and function of the machines to be ordered, as well as determining which machinery would be obtained domestically and which would be obtained abroad. Similarly, the chief engineers in one of China's leading automobile factories noted that their factory has a detailed plan regarding the new technology needed for the development of a major new product. This plan is sent for approval by the factory to the China Automobile Industry Corporation, which has replaced the ministry in the direct leadership of the factory. It is the corporation, not the enterprise, that decides whether the desired equipment will be domestically produced or imported. All decisions are made on an item-by-item basis. According to the sources interviewed, the general rule is that all new technology must be Chinese-made, unless one can present a strong case for an exception.

"Buying Hens to Lay Eggs"

One of the weak spots in China's ability to exploit new innovations is its existing industrial capital stock. Despite a burst of spending on foreign process technology a few years ago (the "buying of hens to lay eggs," as a *People's Daily* writer put it), the current emphasis is on upgrading existing plants and equipment. Estimates vary widely, but it is certain that much of China's fixed industrial assets are quite old. In the machine tool industry, for example, an analyst at the Academy of Science's Economics Institute has estimated that only 30 percent of the equipment now in use is of 1960s vintage, while 60 percent dates to the 1940s and 1950s. In the Shanghai textile industry, long a principal source of foreign exchange, 68 percent of the cotton-spinning equipment, 36 percent of the wool-spinning equipment, and 41 percent of the knitting facilities are from the pre-1949 era. This suggests an industrial base quite out of step with the country's need to produce modern products.

Despite the official encouragement given to "reverse" engineering, the fact remains that the Chinese are probably the least successful copiers in Asia. The PRC admires and seeks to emulate the success that Japan enjoyed throughout the 1950s–60s when that country acquired large amounts of foreign technology. But what the Chinese fail to grasp is that the Japanese maintained a substantial R&D program aimed as assimilating, adapting, and improving foreign prototypes.

A second major weakness stems from China's traditional policy of self-reliance. This policy grew out of the civil-war experience in the border areas, where isolation forced each local communist government to be self-reliant. The policy persisted after the conclusion of the civil war both because of its obvious national security advantages, and because direct market linkages between producers and consumers of technology either did not exist, or were woefully inadequate. Visitors to Chinese factories cannot help but be struck by the technical ingenuity exhibited by the workers who often build their own equipment. A consequence of such self-reliance has been the atrophying of technical specialization and "natural" market linkages between enterprises. Beijing is aware of the need for industrial specialization and, in fact, is refashioning industries, usually at the local level, to encourage specialization. The watch industry, for example, is being restructured so that each factory, which once self-reliantly produced the entire product, is now integrated into a multi-factory company with each specializing in a specific part of the fabrication process. The larger factories generally have become responsible for final assembly. Already done in the television and computer industries, among others, this represents a major step forward in the coordination of available industrial resources and the reduction of redundant production capacity. Such increased specialization should also serve to sharpen competition on a national scale.

Quality is, at present, the primary means of discriminating between products, given that the system of state-fixed prices has reduced price competition, and the excess of demand over supply in the Chinese market has reduced the importance of product design. As a result, among the many chief engineers and other technical managers that I interviewed in 1983, quality improvement was always selected as being the firm's most important technical concern. The evidence can also be seen on China's factory floors where quality-control process charts and total-quality-control posters are everywhere (though the statistical capability of most Chinese factories is typically too low to really support such quality control campaigns).

The preeminence of quality considerations, I suspect, has reduced the commitment to product innovation, while perhaps supporting the long-standing preference for process innovation. For years, process innovation has been pursued at the expense of product innovation largely because of the national criteria for enterprise performance evaluation, which stressed cost-reduction and production efficiency rather than market expansion and revenue generation. Today, at a time when attention to profits should be awakening interest in product development, there remains a persistent feeling

that any product that maintains a satisfactory image of quality in the biannual ministerial quality reviews will always find a market.

Perhaps the most insidious element working against modernization at the enterprise level, and one which is virtually invisible, is the persistent belief among managers that they are insulated from world competitive realities. Such feelings naturally affect the technological activities of an enterprise. In 1983, at a time when the Chinese press was awash with articles and opinions urging the government to close, or at least cut back uncompetitive enterprises, many managers continued to retreat behind the timeworn defense that "China is a big market. We'll sell everything that we make." Even in enterprises without a national reputation, one gathers that provincial reputations can be sufficient to provide the perception of security and reduce the commitment to innovation that would otherwise be developed. Obviously, not all enterprises share this casual attitude toward the virtues of R&D, but it is pervasive enough within the economy to diminish China's prospects for technical achievement.

People Make the Product

As in the West, it is the people who represent a Chinese firm's most critical resource. Fortunately for China, most technical innovations take place in factory workshops under the guidance of a chief engineer and cadre of seasoned workers, since the country has few trained R&D personnel. Even after being established for more than three or four years, the staffs of many enterprise research institutes often remain limited or incomplete. One reason for this is that, given the scarcity of adequately trained scientific and technical people in China and the restrictions on job-hopping, the staffing of any new research institute must, of necessity, come from the factory's existing work force. The shortage of trained personnel must pose considerable difficulty in those industries for which the technology has been revolutionized. One can only imagine the problems of a factory manager in an enterprise producing field-surveying equipment, where the international standards have changed from pure optical equipment to sophisticated electronics and lasers. In one such case, the enterprise was unable to secure the university graduates it needed and was bravely attempting to retrain its experienced workers.

New university graduates are simply too few to go around. One result of this is that some of the new general corporations, which are replacing the ministries in some industries, are unable to staff their own technical offices, and have had to rely on the technical groups of the larger enterprises under their direction. Interestingly enough, once research institutes are staffed, they tend to allocate a disproportionately large amount of their energy to the smaller enterprises with which they are affiliated, requiring the better-endowed, larger enterprises to rely on their own technical capabilities.

Recently, with the reappearance of contract research, some aggressive enterprises are quickly hiring technical personnel on a contract basis. A watch factory interested in the possibility of digital watches, for example, contracted with another enterprise in the electronics industry for technical assistance. Quite a few other factories contracted with university engineering departments for faculty consulting. Contracting is still new to China, however, and until the Chinese work out all of the details of a contract system, such relationships will not become widespread.

Meanwhile, experienced workers from the shop floor are being trained to fill technical positions. The recent introduction of examinations into the Chinese industrial system is proving, in a few select cases, to be of considerable assistance. In a Tianjin electronics factory, examinations are being used to place people in technical positions up to and including section leader. In this enterprise, an examination is offered once a year covering mathematics, physics, chemistry, practical and operational skills, and occasionally Chinese composition to test for presentational abilities. The examination helps the personnel section make the best staffing choices for incoming workers, and encourages all other workers to maintain an adequate level of performance in order to keep their positions. A similar, though less formal means of screening worker skills was observed in the selection of enterprise employees for assignment to the design department of an apparel factory, where a feel for fashion design was especially useful in promoting export sales. In this case, the chief designer continuously appraised the skills of the factory's workforce, looking for evidence of talent. Those workers selected by him for inclusion into the design staff can then be sent to the provincial arts and crafts institute for six months training in painting.

A related problem is that of motivation and reward. Although the Chinese government has recently reintroduced national awards in applied science and technology, there is considerable skepticism among R&D managers at the enterprise level as to just how inspiring such rewards can be. Too often the rewards are financially insignificant and are shared by such a large number of people that they lose their impact entirely. Furthermore, there appears to be a widespread doubt among many industrial enterprise directors about the actual value of R&D. One joke recently making the rounds among Chinese industrial scientists and engineers was the reaction from factory management that suggested that nearly anybody has better career potential than an R&D person. Said the factory manager to a young researcher: "Another successful discovery and I'll promote you to a job in the tool storeroom."

Fortunately, such attitudes are changing. In a children's clothing factory, for example, designers' performance was measured and rewarded by indicators such as the quantity of orders bearing their designs and the votes of their colleagues in the garment trade. In an optical instrument factory under the Academy of Sciences, a limited number of outstanding R&D performers are being rewarded with 60 percent "free" time to work on their own design projects in an experiment to foster greater creativity.

Such initiatives, limited as they may be, represent the beginning of new R&D personnel policies designed to stimulate China's drive to modernization.

William A. Fischer is an associate professor at the University of North Carolina's School of Business Administration in Chapel Hill. He has served on the faculty of the Dalian program since its inception on June 1, 1980. His specialty is R&D management and technology transfer.

Truck Turnaround is Faster at the Port of San Francisco

Served by 200 trucking firms, the Port of San Francisco provides fast, direct intermodal service for cargo shipments originating or delivered here in the West.

Our southern terminals are located in an uncongested part of the city. Major Interstate highways are less than one mile from the terminal gates. The Port of San Francisco, working together with its 200 trucking partners, offers fast and economical movement of your cargo from Port to portal.

Truckers–Our Partners in Shipping

To find out how shipping through the Port of San Francisco can benefit you, contact our Maritime Dept.

THE PORT OF SAN FRANCISCO

Ferry Building, San Francisco, CA 94111, (415) 391-8000; Cable: SFPORTCOM, Telex: 467560

Licensing

Contrary to popular belief, companies can benefit from a licensing agreement with China.

Martin Weil

A few years ago China would sign at most 10 or so technology licenses per year. But in 1983 the number seems likely to reach into the hundreds. And recently Beijing announced its intention to acquire 3,000 more items of licensable technology by 1985. These include essential technologies ranging far and wide over China's machine-building, electronics, chemicals, and metallurgical sectors.

Some licenses involve the manufacture of just one piece of equipment, others thousands. Some are essentially co-manufacturing agreements, in which the foreign party supplies some parts and the Chinese the rest, while others involve 100 percent Chinese content. When they are all added together, the amount of money at stake is in the hundreds of millions, or possibly the billions, of dollars.

The Chinese eagerness to enter new deals, however, has not necessarily been accompanied by a comparable alacrity in implementing them. The experience of foreign firms to date suggests that China can absorb licensed technology slowly, at best, particularly when the technology is not associated with a complete, or a nearly complete, plant purchase. Delays and frustration are common, though not the universal experience of licensing companies.

Moreover, China still tends to press very tough conditions on its licensing partners concerning payment, duration, company guarantees and obligations, and the re-export of licensed products. Despite the softening of China's position in some recent deals, many licensing firms frankly admit that they either expect little profit or less than they would get by licensing in other countries.

Why do companies persist? China insists on it. Most sizable equipment purchases are now tied to a company's willingness to license. If a company is unwilling, there is usually a competitor who is. Companies also feel that a license gives them a market foothold that will promote future sales while blocking out the competition, and that a licensing agreement usually leads to immediate sales of products and components as the licensee attempts to gear up production.

The evidence supports the view that the indirect benefits, particularly the follow-on unit and component sales, more often than not offset the disadvantageous terms and implementation difficulties associated with doing a license in China.

The Attitude Barrier

Licensing is by no means a new phenomenon for the Chinese. In the 1950s, China was the beneficiary of probably the most intensive technology transfer in history when it built an entire industrial system on the basis of Soviet and East European know-how. In this one instance, design and operational know-how were considered part and parcel of the construction of complete plants purchased from the Soviet bloc. Neither side considered it a distinct category to be given special treatment.

This attitude toward know-how continued in the 1960s when China began purchasing complete plants from Western Europe and Japan, mainly for the metallurgical and chemical sectors. Indeed, it was compounded by the Chinese fear, fed by the sudden cutoff of Soviet assistance, of entering into long working relationships with foreign companies. Furthermore, the Cultural Revolution, which cut off contact between companies and the Chinese, made the acquisition of pure know-how impossible. The vendors at that time generally did not even find out until years later where their plants and technology had been used.

When complete plant purchases resumed on a larger scale in 1972, and the first US licenses to China were concluded, manufacturing know-how remained distinctly subordinate in importance. The licensor was typically under subcontract to an engineering contractor, rather than in a direct relationship to the Chinese. The license fee was often buried in the hardware price. Only in a few cases did the Chinese experiment with direct licenses.

During the mid-1970s, some faint harbingers of things to come were three licenses in the machine-building sector: Rolls Royce Spey military aircraft engines, Siemens industrial steam turbines, and Nuovo Pignone centrifugal compressors. But the real change came with Deng Xiaoping's open door policy in 1978–79, which permitted Chinese to begin working with foreigners on a long-term basis.

Of equal importance was the philosophical shift (caused paradoxically by the continuing influence of the self-reliant current in Chinese thinking) away from purchasing complete plants toward purchasing technology and know-how alone. The rationale was that China could not afford the expense of purchasing complete plants, and that buying know-how would be a cheaper way to achieve the long-term objective of self-reliance. Obviously, the protectionist pressure mobilized by Chinese manufacturing interests in the machine-building ministries contributed to the change.

Thus, in 1979–80, the Chinese be-

gan to require foreign equipment vendors to transfer some of their manufacturing know-how. But just as a number of licensing agreements were signed with firms such as Hughes Tool, Sperry, Westinghouse, Combustion Engineering, and Cummins Engine, the effort was temporarily cut short by the budget cuts of the 1981–82 readjustment program. The Chinese were still willing to discuss licensing if payment was accepted in finished product. This was a non-starter for the vast majority of potential licensors, whose motivation was to penetrate the China market. But by the end of 1982, the Chinese were dropping the condition and offering cash.

The current explosion in licensing really began with the finalization of a new five-year plan in mid-1982, the rise in investment spending at the central level, and the consequent willingness to spend foreign exchange.

As a result, many negotiations that had been dormant since 1980 have been concluded, and many more are under active discussion—including big ones involving aircraft and nuclear power equipment. The Chinese now want to license virtually every sophisticated product their industry currently requires in any quantity.

The move into high technology is particularly significant. Semi-conductor manufacturing know-how has been licensed from one US firm, and microcomputer production from another. Mainframe computer disc drive technology is under discussion. The liberalization of US export control regulations coincides neatly with the new spurt of Chinese activity.

Changes in Approach

The semiconductor case dramatizes the increased Chinese appreciation for the intangible part of know-how. Whereas previously, the Chinese had focused on drawings, blueprints, and patents, they now seem willing, at least in the semiconductor case, to pay millions of dollars just to learn how to maintain the order, cleanliness, and quality control essential to state-of-the-art manufacturing.

The Chinese are also more willing to consider, at least in certain cases, something less than full technology transfer. In the rail locomotive deal recently concluded with General Electric, for example, they have not tried to license the engine technology yet, realizing that it might be more than they could handle. This stands in marked contrast to early licenses, such as the Spey aircraft engine deal, where they tried for everything at once and failed.

Even the chemical and metallurgical licensing process is changing. Rather than handle everything through a contractor, who arranges a complete plant sale, the Chinese are entering into direct relationships with process licensors. Most contracts, such as those signed this year with Scientific Design, Lubrizol, and Mitsui, call for Chinese participation in basic design, and joint efforts by the Chinese to select equipment in China and abroad. The licensor must do much more work than previously, particularly in training.

The current explosion in licensing really began with the finalization of a new five-year plan in mid-1982, the rise in investment spending at the central level, and the consequent willingness to spend foreign exchange. Today many negotiations dormant since 1980 have been concluded, and many more are under active discussions —including big ones involving aircraft and nuclear power equipment. Basically, the Chinese want to license the entire range of sophisticated products their industry needs.

Changing Partners

As China's licensing strategy changes, so do the participants. The role of the end-users is clearly expanding at the expense of the foreign trade corporations under the Ministry of Foreign Economic Relations and Trade. Prior to 1981, only the China National Technical Import Corporation (TECHIMPORT), or occasionally the China National Machinery Import and Export Corporation (MACHIMPEX), were empowered to sign contracts. Now, the China Machinery and Equipment Import and Export Corporation (EQUIMPEX, also called CMEC, under the Ministry of Machine Building) signs almost all contracts involving Ministry of Machine Building plants. SINOPEC, the new petrochemicals corporation, has begun to sign contracts in that sector. Meanwhile, the State Economic Commission still plays a key role in determining overall licensing priorities, and the budgets allocated to each item.

In many cases, licensing plants themselves are co-signing contracts, something that previously was difficult or impossible. It is perhaps no coincidence that as the influence of the licensing plant increases, interest has shifted from the "newness" of a technology to the more practical question of its reliability.

Shanghai and Tianjin, as well as other localities with their own funds, are beginning to initiate negotiations. One recent contract was co-signed by Shanghai and SINOPEC; Shanghai has even signed a licensing contract on behalf of Zhejiang Province, according to one source.

Where TECHIMPORT fits in is less clear today. In some cases involving inexperienced end-users, it will negotiate and sign the commercial part of the contract. In others, it will act as an advisor, and in still others, it will play a purely behind-the-scenes role in the State Council review that is made after each contract is signed.

Reports on TECHIMPORT's performance vary from company to company, and according to the individual TECHIMPORT negotiator. Some companies claim TECHIMPORT is more assertive and sure of itself than end-user negotiators, while others say it is more wedded to habit and less flexible. A few US negotiators talk about conflicts between TECHIMPORT, which is concerned solely with negotiating the deal most favorable to China, and end-users, who are more interested in making a deal work. Companies have even found themselves forced to mediate between TECHIMPORT and end-users on occasion.

SELECTED US LICENSING AGREEMENTS WITH CHINA

Product or process	Firm	Date	Description
Automotive parts			
Diesel engines	Cummins Engine	1981	10-year agreement signed with TECHIMPORT for Chongqing MMBI plant
Automotive thermostats	Standard Thomson, Allegheny Industries	1982	10-year agreement with No. 2 Automobile Plant, Shiyan; soon to be turned into a joint venture
Turbochargers	Holset Engineering, Cummins Engine	1982	Signed with TECHIMPORT for Wuxi Plant
Electrical equipment			
Power capacitor	McGraw-Edison	1979–80	Signed with TECHIMPORT for MMBI capacitor plant in Xián
Copper rod forming technology	General Electric	1981	10-year agreement signed with TECHIMPORT for MMBI's Harbin Cable Factory
Power-plant air-preheater	Combustion Engineering	1981	15-Year agreement with MMBI for Shanghai, Harbin and Sichuan plants
Thermal power-plant boilers (300 and 600 MW)	Combustion Engineering	1981	15-Year agreement with MMBI for Shanghai, Harbin, and Sichuan plants
Thermal power-plant turbine generators (300 and 600 MW)	Westinghouse	1981	15-Year agreement with MMBI for Shanghai, Harbin, and Sichuan plants; first agreement signed with EQUIMPEX
Molded-case circuit breakers	Westinghouse	1982	Signed with TECHIMPORT for Huadong Switchgear Plant, Shanghai
Thyristors for high-voltage direct current transmission lines	General Electric	1983	7-year agreement with MMBI at Xián Rectifier Plant
Mining and minerals processing			
Ball mills	Allis-Chalmers	1980	China to manufacture one ball mill for Yongping copper mine at Shenyang
Water gel explosives for coal mining	DuPont	1980	10-year agreement signed with TECHIMPORT for Coal Ministry plant in Huaibei
Vibrating screens	Tabor Machinery, Subsidiary, Roberts and Schaefer Co.	1981	8-year agreement with MMBI for 10-foot screens at Anshan
Dewatering centrifuges	Bird Machinery	1982	9-year agreement with MMBI at Luoyang Mining Machinery Plant
Vacuum and shriver-type filters	Eimco, Subsidiary, Baker Int'l.	1983	9-year agreement with MMBI
Petrochemicals			
Acrylonitrile	Sohio	1973	Plant in Shanghai; 50,000 tpy
Aromatics extraction	UOP	1973	Shanghai-Jinshan
Aromatics extraction	Atlantic Richfield	1973	Liaoyang
Ethylene	C-E Lummus	1973	Yanshan; 300,000 tpy
Polypropylene	Amoco	1973	Liaoyang; 35,000 tpy
Ammonia	Kellogg	1973–74	11 plants around China; 300,000 tpy
Ethylene glycol	Scientific Design	1974	Yanshan; 60,000 tpy
Alkylbenzene	UOP	1975	Nanjing; 50,000 tpy
Aromatics extraction	UOP	1975	Yanshan, Beijing; plant constructed by China
Benzene catalytic dealkylation	Air Products & Chemicals	1975	Yanshan; 100,000 tpy
Aromatics extraction	UOP	1976	Tianjin
Terephthalic acid	Amoco	1977	Yanshan; 36,000 tpy
Aromatics extraction	UOP	1978	3 plants in Nanjing, Shanghai-Jinshan, and Shengli
Dewaxing of oil	Mobil Oil	1978	Shengli
Ethylene	C-E Lummus	1978	3 plants at Nanjing, Shengli, and Jinshan; 300,000 tpy

Negotiating the Tough Issues

Although the Chinese are slowly agreeing to more liberal and creative terms in their licensing contracts, they still deserve their reputation as tough negotiators. They are famous for playing competitors off one another; breaking an agreement down into many components, and then shooting for maximum concessions on each; or simply waiting stubbornly for the other side to give. On one recent occasion, they even reopened a supposedly concluded negotiation when a company's CEO came for the contract signing. Only a company that has what the Chinese badly want is likely to win more favorable terms, and then only after protracted discussions. Among the issues most difficult to negotiate:

Term of payment. The Chinese tend to offer a very low sum as an up-front payment (often less than the price of one machine in the case of large, expensive products) combined with a royalty in the neighborhood of 2–3 percent of the value of the machines made and sold under license. In many cases, the up-front money is in the neighborhood of 10–20 percent of the total anticipated payments, and the Chinese try to limit it to the tangible costs of transferring the technology; that is, to just the cost of document shipment and training.

The up-front payment, with some variation, is usually staggered over 3–4 installments: a down-payment upon a company's receipt of an export license from its own government; a portion after shipment of technical documents; sometimes a portion after the completion of training of Chinese technicians; and a portion, usually in the neighborhood of 10–20 percent of the total up-front payment, upon the successful trial production in the licensing factory. One creative contract in semiconductors calls for installment payments based on the plant's increased efficiency.

Certain companies prefer to take all their payments up-front, rather than tie their payments to the unpredictable and difficult-to-verify Chinese production levels. The Chinese side has sometimes agreed to substitute fixed payments for running royalties. Certain stubborn firms have obtained up-front payments 5–10 times the Chinese side's initial offer. But only a few up-front fees are believed to exceed $10 million.

Not so long ago, the Chinese refused to offer production-based royalties at all for fear of implying long-term control by foreigners. They are now willing to raise the payments as high as 5–6 percent of the US price on finished goods, and 9 percent on parts for products with limited production volume. They still seek to base the royalty on the Chinese selling price, but as Chinese prices are difficult for foreigners to ascertain, and are subject to arbitrary changes, companies prefer to use their own prices as the standard. The Chinese often acquiesce if pressed hard enough. Some contracts call for the Chinese price, or a specified percentage of the US price, whichever is higher.

The Chinese also resist escalation of royalties with inflation. But in some contracts, they have agreed to an inflation index based on the rates in several different countries. At least one company has dealt with the problem of value and inflation by fixing an absolute royalty per unit produced, regardless of local content (almost all royalty clauses exempt parts purchased abroad), with an agreed-upon increase from year to year.

An increasing number of contracts, furthermore, contain a clause laying out a fixed minimum royalty payment regardless of the licensed plant's production. Thus, companies are protected if the Chinese do not meet production projections, but still benefit if they surpass expectations.

So-called "counterpurchase" cases, involving payment in parts rather than cash, seem less frequent today, perhaps owing to the increased access to foreign exchange on the Chinese side. For some, a "best effort" counterpurchase clause suffices, while for others a counterpurchase arrangement is required under the contract. Companies seem to be making sincere efforts to comply with their counterpurchase commitments, though quality control problems apparently make it difficult and expensive to do so.

One company is falling behind on its counter-purchase obligations because the Chinese do not respond to its requests to bid on parts the company is willing to have manufactured in China. The company believes the Chinese do not understand or feel incapable of meeting the company's

Ethylene	Stone & Webster	1978	Daqing; 300,000 tpy
Hydrocracking of heavy oil	Union Oil	1978	4 facilities: Maoming, Shanghai, and 2 at Nanjing
Hydrotreating	Union Oil	1978	Shengli
Metacresols	Hercules & UOP	1978	Yanshan; construction not yet begun
Oxoalcohols	Union Carbide	1978	Daqing and Shengli; 70,000 tpy
Polyethylene (high-density)	Union Carbide	1978	Shengli; 140,000 tpy
Synthesis gas generation	Texaco	1978	For use in 3 ammonia plants in Zhejiang, Ningxia, Xinjiang, and an unlimited number of others.
Synthesis gas generation	Texaco	1978	For Shengli oxoalcohol plant
Terepthalic acid	Amoco	1978	Shanghai–Jinshan; 200,000 tpy
Caustic soda chlorine	Diamond Shamrock	1979	Shengli; 200,000 tpy
Terepthalic acid	Amoco	1979	Nanjing; 450,000 tpy
Alkylation of gasoline	Phillips Petroleum	1983	3 refineries in Tianjin, Shanghai and Zhejiang; 1,700 barrels per day; signed with SINOPEC
Ethylene glycol	Scientific Design	1983	Nanjing; 200,000 tpy
Lubricating oil additives	Lubrizol	1983	Jinzhou No. 6 Petroleum Factory
Petroleum equipment			
Jack-up drilling rig, (200 feet)	Bethlehem Steel	1981	3-year contract with Guangdong Ship Building Corporation in joint venture with Wah-Chang, Singapore
Rock drill bits	Hughes	1981	10-year agreement signed with MACHIMPEX for Jianghan plant, Hubei Province under Petroleum Ministry
Equipment for offshore drilling rigs (6,000–8,000 meters depth)	National Supply, ARMCO	1983	8-year contract with Lanzhou Petroleum Machinery Plant under MMBI
Well-head equipment	McEvoy	1983	7-year agreement with MMBI in Shanghai
Other Licensing agreements			
Pressure monitoring instruments	Rosemount, Emerson Electric	1979	For Xián Instrument Factory
Aircraft pumps	Sperry-Vickers	1980	NA
Axial piston pumps	Sperry-Vickers	1980	NA
Hydraulic valves	Sperry-Vickers	1980	Agreement signed with TECHIMPORT for Yuci Factory, Shanxi
Television glass bulbs	Corning	1980	Signed with Shanghai local authorities
Combine harvesters	John Deere	1981	10-year agreement signed with TECHIMPORT for MMBI plants in Jiamusi and Kaifeng
Valve actuators	Limitorque	1981	10-year agreement signed with TECHIMPORT for MMBI plant in Tianjin
Metal-forming presses	Verson Machine Tool	1981	10-year agreement with MMBI for Jinan No. 2 Machine Tool Factory
Plastic telephone cable	Essex Wire, United Technologies	1982	10-year agreement signed with MACHIMPEX for Chengdu Cable Plant under Ministry of Posts and Telecommunications
External & internal gear pumps for medium and high pressure applications	Sperry-Vickers	1983	Several different agreements
16-Bit microcomputers	General Robotics Corporation	1983	Agreement signed with MACHIMPEX for Tianjin No. 5 Radio Factory

MACHIMPEX China National Machinery Import and Export Corporation
MMBI Ministry of Machine Building Industry
MW Megawatts
SINOPEC China National Petrochemical Corporation
TECHIMPORT China National Technical Import Corporation
tpy tons per year
SOURCES: National Council licensing files.

price targets. Nonetheless, the Chinese continue to make their cash payments without objection.

Taxes. The 1982 foreign enterprise income tax law called for a 20 percent withholding tax on royalties paid foreign firms. Although the tax was not applied retroactively to contracts signed before 1982, it was promptly levied on up-front and royalty payments alike with new contracts. In early 1983, though, the tax was reduced to 10 percent. And US firms have recently succeeded in inserting contract language making their payments exempt of any Chinese taxes. The language typically calls for the Chinese contracting party to refund any taxes not creditable against US taxes. There is at least one case, however, of the Chinese side failing to honor this kind of contractual commitment—possibly a sign of interagency fighting between the licensing ministry and the Ministry of Finance, which loves to collect its taxes.

Guarantees and Penalties. The Chinese demand exhaustive guarantees and nettlesome penalties for nonperformance. The penalty for the incomplete delivery of documents can go as high as 10–20 percent of the fixed fee, and in chemical plant contracts, in particular, there are often high penalties if the plants do not perform to standard.

Seldom, if ever, have the Chinese actually collected penalties. But they have delayed payments much longer than the companies felt appropriate, on the grounds that document shipments were incomplete. In the case of chemical plants, the threat of penalties has often led to the adoption of more conservative—and expensive—design parameters than might have been necessary.

In recent negotiations, the Chinese have relented. One contract with EQUIMPEX does not mention any penalty and performance bonds, and stipulates only a refund in the event the documents are not shipped. This contract offers only the normal company warranty. In some cases involving sophisticated technology, the Chinese have even agreed to performance standards lower than for the same equipment made in the US, realizing that they are unlikely to produce to US quality standards right away.

When there are performance guarantees, they are usually written in the form of standby letters of credit opened by the licensor, normally valued at about 10–20 percent of the total up-front payment. They can cover non-shipment of documents and/or the successful production of licensed items, though frequently the penalty for unsuccessful trial production is simply the withholding of a scheduled payment.

The Chinese continue to insist on linking a certain portion of payment to the successful production of a trial "verification unit." Internal Chinese regulations require the verification test, without which a factory will almost certainly be unable to market its products. Thus, even though this test is not a standard feature of international licensing practice, it is in companies' interests to do their best to help the Chinese pass the test.

Contract Duration. The Chinese naturally desire to keep the royalty payment period as short as possible, but typically agree to 8–10 year licensing contracts. Their initial offer, however, will be closer to 5–7 years. In one case, they even agreed to pay royalties for 10 years. But they required the licensing company to inform them of improvements in the process for only 5 years, a major departure from standard international practice. This may possibly have been related to the continuing Chinese reluctance to share their improvements in the process with the licensor. In another recent case, the Chinese settled for automatic disclosure of the licensor's improvements for only 5 years, rather than agree to mutual disclosure of improvements for 10 years. There are some recent reports, though, that the Chinese have agreed to mutual disclosure.

Contracts of over 10 years' duration are extremely rare. Significantly, none of the known ones involves royalties based on production. There are also no known instances of the Chinese renewing licensing agreements.

Exports of Licensed Production. The Chinese usually ask for much broader rights to export licensed products than companies are willing to grant. Though it is almost impossible to deny exports to the Chinese altogether, firms for whom this is important usually succeed in keeping them out of the markets of developed countries.

A number of contracts restrict Chinese exports to countries such as Cuba, North Korea, Burma, and Yemen; one even restricts them to Chinese engineering units working in third countries. Sometimes, however, there is a loophole allowing the Chinese to export under government-to-government contracts, which cover much of their trade with the Third World and Eastern Europe.

A number of contracts call for the licensing company to act as China's sales agent. While this gives the company some measure of control, it also creates the potential for tension when an eager licensee asks a reluctant licensor for marketing assistance. In other cases, Chinese quality problems will make the whole issue academic.

Secrecy. Although it is often difficult to draft secrecy and nondisclosure clauses to the satisfaction of company lawyers, the Chinese do recognize the need to reassure companies that their technology will not be transferred to unauthorized third parties within China. Companies can obtain language that calls on the Chinese not to disclose information to plants other than those mentioned specifically in the contract during the life of the agreement. But it is difficult, if not impossible, to get the Chinese to maintain such confidentiality after expiration of the contract.

The Chinese have felt free in the 1970s and 1980s to replicate plants using technology licensed in the 1960s, and it is probably reasonable to assume that they will do so in the 1990s with plants licensed in the 1980s. Most licensors take the view that this is a calculated risk, and that their technology will have advanced so much in 10 years that disclosure of old technology will do them little damage.

Of more immediate concern is the possibility that Chinese technicians trained by companies as part of a licensing agreement will be transferred to work at other factories. One of the very few suspected breaches of confidentiality to date resulted from just this kind of transfer.

A Look at the Results

The licenses governing complete or almost complete plant and production-line purchases, particularly in the chemical sector, are being implemented successfully. Although plant startups have usually been delayed, this tends to affect the licensor

only minimally, as most of the payment has already been made. Once the plants finally begin operation, they tend to work well. US firms such as Scientific Design, which licenses ethylene glycol, are already negotiating or signing new contracts based on the success of their old ones.

In the machine-building sector, however, the record is far spottier, particularly when it is a question of upgrading production in an existing plant. Local content schedules have not been met, the volume of production has been much lower than projected, and there have been frequent quality problems.

The Spey engine license is perhaps symbolic of the problems encountered by all three major machinery licenses of the 1970s. Production was discontinued after completion of the trial units, in part because a suitable airframe could not be developed, but also in considerable part because of quality problems. Nuovo Pignone compressors have appeared only in small numbers after seven years of licensed production. Though visitors report that Hangzhou produces Siemens turbines of reasonable quality, there have been marketing problems, and Siemens chose not to license other turbine lines after the initial agreement expired.

Some of the post-1980 deals have gone more smoothly. But the parties still must cope with many of the same problems:

Blunting the Opposition. Most major deals seem to arouse the opposition of anti-foreign interests that feel that China can design and manufacture the product on its own. This opposition must be neutralized or coopted if a deal is to proceed satisfactorily. One viable compromise seems to be to license foreign technology and develop domestic designs simultaneously, as is the case with a 300 megawatt turbine generator deal. The Chinese factories are building the machines to the specifications of Westinghouse and to two separate Chinese designs.

Opponents in key positions of authority are of course in an excellent position to sabotage an agreement after it is concluded. For example, money may be mysteriously unavailable to purchase equipment the two sides had earlier agreed would be necessary. Or, a company's telexes to arrange implementation will go unanswered, and visits can be delayed. In several cases, obstructionism of various kinds persisted until there was a reorganization of the licensing plant's management. In one instance, several reorganizations were required.

Changes in the overall political climate can strengthen the opposition's hand, as was the case when readjustment was intensified and the "petroleum clique" attacked in early 1981. The Hughes drill bit license, signed about six months earlier, was attacked openly in the Chinese press. At one point it looked as if it might be cancelled. In the end, it was necessary to renegotiate parts of the deal, although Hughes insists that none of the critical commercial terms had been changed.

Follow-on sales are sweeteners the Chinese have included in almost all licensing arrangements, knowing full well that many companies would not even consider licensing without them. The most recent example is General Electric's sale of 220 rail locomotives for over $200 million in conjunction with its locomotive license.

The Hughes case demonstrates that some Chinese do not necessarily consider a signed contract sacred if they believe China made a bad deal. Although the horror stories are the exception not the rule, there has been at least one other case of payments being suspended temporarily as the Chinese unsuccessfully tried to renegotiate a signed contract. Such cases merely reflect a larger reality: You must learn to deal with China's fractious, sometimes anti-foreign bureaucracy.

Quality Control. Factory managers not accustomed to strict quality control procedures often resist a licensor's injunctions, and either stick to their old ways or try for cheap and easy solutions that do not work. In one plant, for example, the foreigners pointed to the problems in the casting, but instead of changing the casting method, which would have required about a month, the Chinese tried to adjust the machining. In another, a machine that was supposed to run continuously for optimum performance was turned on and off repeatedly because of interruptions in power supply. In still others, the Chinese have not set up quality control systems at all.

Sometimes, the licensee may be forced to use locally available raw materials even if they are not up to standard. And if a Chinese factory must rely on another ministry for a key input, it may have little influence over its quality. Licensing companies have written language into their contracts giving them the right to inspect and reject raw materials, but this does not seem to solve all the problems.

Penny Wisdom. One of the most common reasons for poor quality is the Chinese reluctance to spend even a nickel more than what the contract calls for. By their very nature, licensing agreements entail unforeseen events and expenses. The Chinese invariably insist that they fall under the scope of the original contract, even if they require extra work by the company.

For example, many contracts allow for a definite number of technician work-days in China at the company's expense, requiring the Chinese to pay for any visits above this number. Rather than pay for an extra visit, the Chinese are just as likely to leave an important problem unattended, or try to browbeat the licensor into paying. Likewise, the Chinese have sometimes been slow to spend money for tooling that the licensing company recommends.

Adapting to Change. Virtually all advanced technologies licensed to China change with improvements in design. By definition, state-of-the-art technologies are not static. But the flood of design innovations sometimes overwhelm Chinese managers already having trouble assimilating the company's initial design.

Marketing. Companies cannot assume that licensed products will automatically find a market. For one thing, Chinese managers are unused to doing their own marketing. Also, it is becoming apparent that end-users have more power to select their prod-

Photo courtesy McDonnell Douglas Corp.

McDonnell Douglas is currently negotiating a licensing agreement to manufacture complete airframes (minus the engines and avionics) in the PRC. Two MD-82s will be delivered to CAAC's Shanghai bureau by mid-December 1983 for domestic use as well as its Shanghai–Tokyo and Shanghai–Hong Kong routes.

Photo by Xinhua

When its Chinese licensee achieves full production in mid 1984, Standard Thomson truck and automotive thermostats will be marketed throughout the PRC.

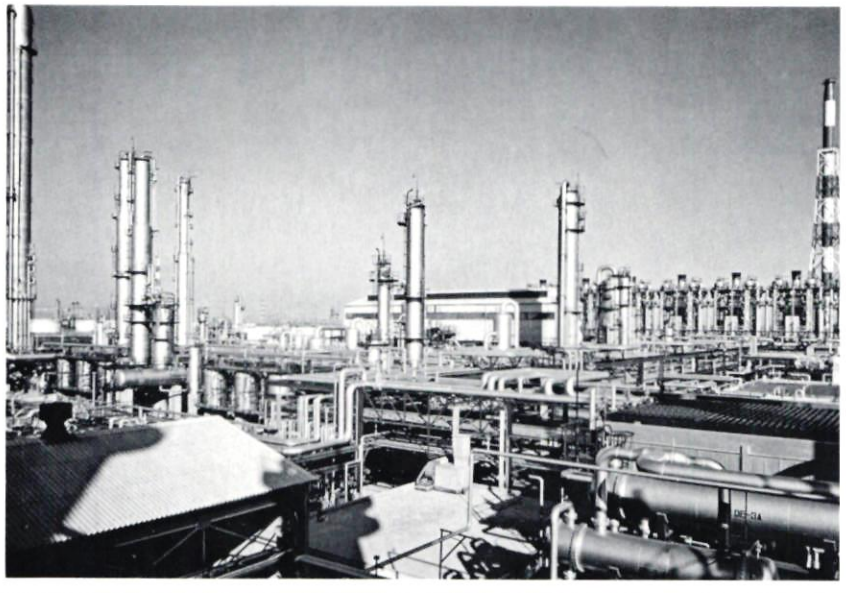


Photo by Xinhua

Based on the success of its 1973 licensing agreement with the Beijing Petrochemical Works (above), C-E Lummus agreed to license more ethylene technology to plants in Nanjing, Shengli, and Jinshan in 1978.

ucts than is commonly known, and that the central authorities cannot always enforce their supply and marketing plans.

The Chinese press has published a complaint by Siemens' Hangzhou licensee regarding so-called "regional and departmental blockades." These refer to the *de facto* market barriers in China between localities and ministries. The same article mentioned another phenomenon confirmed by US firms in China, namely that Chinese end-users are suspicious of products manufactured under license, believing that nothing made domestically will ever compare with products manufactured abroad. As a result, several companies licensing in China have ended up competing with their licensing partners. Certain customers with access to foreign exchange insist on buying American, and the number would probably be greater if the Chinese central authorities did not insist that licensed products sell at the same price in domestic currency as those purchased abroad.

In a departure from normal licensing practice, several companies are developing their own marketing strategies to promote the sale of their licensed products in China, and to break down the prejudice against domestically made products. Others find it advisable to service licensed products with foreign personnel.

Other Irritants. Although relatively minor compared with the larger financial issues, communication and travel problems sometimes present real irritants. The Chinese tend to send large numbers of technicians to the US for training (in most instances, more than companies feel necessary). Often, they lack the necessary English skills. Or, after signing contracts that call for every conceivable technical document, the Chinese will find themselves buried under untranslatable paper.

Particularly when a licensing plant is located in an outlying area, the lack of telecommunications will hinder communications between the licensor and the Chinese licensee. Poor accommodations have created problems for companies whose technicians are reluctant to volunteer for work in China.

Are the Payoffs Worth It?

Companies have other motivations in licensing besides making a successful technology transfer, of which the

most important are: obtaining follow-on product and unit sales; freezing out their competition; and positioning themselves for future business in other product lines. In practice, some of these goals have been met more consistently than others, but on the whole, licensing companies are satisfied they have gained advantages that would have otherwise been unobtainable.

The most predictable benefit has been follow-on unit and component sales. These sales are sweeteners the Chinese have included in almost all licensing arrangements, knowing full well that many companies would not even consider licensing without them. The most recent example is General Electric's sale of 220 rail locomotives for over $200 million in conjunction with its locomotive license.

Furthermore, such sales have tended to be larger than originally anticipated both because of delays in implementing licensing agreements and because of stepped-up demand for licensed products. Certain licensing factories even prefer to assemble imported parts though they have the theoretical capacity to manufacture some of their own, feeling that foreign content improves their marketing possibilities. In short, many companies have found that it is easier to conclude product sales after they have licensed in China; these sales have often meant the difference between profit and loss.

But licensing has not always guaranteed the licensor an exclusive position in the China market. France's Aerospatiale Helicopter, for example, has failed to prevent Chinese operators from buying or leasing offshore oil service helicopters from its American rival Bell, despite its licensing agreement with a plant in Harbin.

The key factor affecting exclusivity is of course a company's success in setting up a licensing agreement and, conversely, the failure of its competitors to do the same. For example, it is doubtful that General Electric could have sold military aircraft engines to China were it not for the failure of the Rolls Royce license.

Another is the relationship between the licensing factory and its Chinese end-users. In general, it seems easier for the licensor to gain an exclusive when both the licensee and its customers are in the same ministry. In the helicopter case, for example, Bell was preferred by CAAC, which was not a party to Aerospatiale's deal with the Ministry of Aviation Industry. Some companies have obtained written exclusivity commitments from the Chinese either in the contract or side-letter, but it may well prove difficult to enforce such a commitment outside the producer's ministry. Even with these caveats, however, most firms find licensing improves their position vis-a-vis competitors, even if it does not guarantee total dominance.

Most importantly, no worst-case licensing scenario has come to pass. For example, no Chinese licensee is poised to threaten its mentor on the international market. Likewise, there have been few, if any, violations of confidentiality provisions.

Thus, for all of its attendant difficulties, licensing seems to offer companies enough real or projected return to keep them interested. Although both the Chinese and their licensors are going through obvious growing pains, licensing appears destined to be a dominant mode of business with China for the foreseeable future.

The New JV Regulations

Three years after passage of the Joint Venture Law, China has formalized its policies and even broken some new ground.

Jerome Alan Cohen and Jamie P. Horsley

In the spring of 1979, as China's economic and legal planners prepared to permit foreign investors to cooperate with Chinese enterprises in establishing equity joint ventures in the People's Republic, they confronted a dilemma. If they sought to stimulate foreign interest by immediately promulgating detailed laws that would address all the problems that every foreign investment encounters, experience might prove those laws to be embarrassing, inadequate, and even unfavorable to China. Yet if they failed to enact detailed laws, foreign business people might hesitate to invest because of the consequent lack of legal certainty.

The Joint Venture Law that appeared on July 8 of that year represented a compromise. It prescribed a basic framework for investment, and its relatively few, rather general, provisions resolved more problems than some critics acknowledged. But it left open many important questions. Those questions, Chinese officials maintained, would be dealt with in forthcoming implementing rules.

Drafting a comprehensive set of implementing rules without experience, however, proved more difficult than anticipated. Some officials advocated an alternative—publication of early joint venture contracts as "models" for would-be investors. These could offer guidance without binding the Chinese government as official regulations would. But this idea was aborted in the spring of 1980, when the Hong Kong magazine, *China Economic News*, created a furor by publishing the highly confidential Schindler elevator joint venture documents before their review by the Foreign Investment Commission, which eventually gave its approval only after requiring substantial changes. The approved Schindler documents were never published, and it became clear that the idea of using models had been abandoned.

Yet the need for guidance persisted, despite the appearance of various joint venture laws and regulations concerning registration, labor management, taxation, and loans by the Bank of China, as well as the publication by the Chinese authorities of a series of apparently official guidelines regarding joint ventures.

The long-awaited implementing rules were finally promulgated on September 20, 1983 as regulations (hereafter the "Regulations"). Their 118 articles codify many of the provisions found in joint venture contracts concluded during the past four years as well as policies that have been announced or practiced on a piecemeal basis, and they break new ground in certain respects. What follows is an attempt to summarize the significance of the Regulations according to the same problem areas discussed in an earlier issue of *The CBR* (*see* Jerome A. Cohen, "Joint Equity Ventures—20 Pitfalls that Every Company Should Know About," November–December 1982, pp. 23–30).

Voting by the Board of Directors

The Regulations clarify the Joint Venture Law (hereafter "the Law") by requiring a unanimous vote of the board on only a few types of decisions: those relating to the venture's termination or merger; amendment of its articles of association (and, one would presume, of the joint venture contract as well); and increase in or assignment of its registered capital. Only the votes of those directors actually present or represented at the meeting need be obtained for these purposes. Voting arrangements on all other decisions are to be set forth in the articles of association. The Regulations also make clear that a board meeting requires a quorum of two-thirds of the directors, apparently including those represented by proxy.

Problems of Capital Contributions

The Regulations state that a joint venture, which takes the form of a limited liability company, is a "legal person," and make clear that the participants are only to be liable for obligations of the venture to the extent of their subscribed capital, that is, the contributions to which they are committed. The Regulations spell out permissible forms of contributions in kind (such as buildings, factories, machinery, equipment, materials, industrial property rights, and proprietary technology) but do not mention contributions by foreign ventures of services and training. Moreover, they allow the parties to the venture to jointly select a third party to assess the value of each contributed item (other than the use of a site, which is still to be valued unilaterally by the Chinese) if the parties do not wish to establish the value through negotiation. The Regulations further specify conditions to which contributed machinery, equipment and other materials, industrial property rights, and proprietary technology must conform, and require approval of these contributions by both the department in charge of the venture (usually the government department in charge of the Chinese participant) and the Ministry of Foreign Economic Relations and Trade (MOFERT), or a governmental entity entrusted with MOFERT's approval power pursuant to conditions also set forth in the Regulations.

If the venture is to obtain technology not through a capital contribution but through a technology transfer

contract with one of its investors or a third party, the technology must be appropriate and advanced, and the terms of the transfer must comply with the requirements set forth in the Regulations for such transactions and must be approved by both the department in charge and MOFERT, or its authorized agent. The conditions imposed on these technology transfer agreements, such as no restrictions on product exports, reasonable fees, no tie-ins, and permission for the Chinese transferee to continue to use the transferred technology after the expiration of the agreement (which generally shall not exceed 10 years), correspond to those announced earlier by the Chinese as being applicable to transfers of technology generally.

If the venture acquires the right to use a site not as a capital contribution of a Chinese participant but by means of a contract to rent the land from the local government, the Regulations authorize adjustment of the original land-use fee only after five years, with periodic readjustments thereafter in intervals of three years or more. If, however, the right to use the site is contributed as part of the investment of a Chinese participant, the Regulations prohibit any adjustment of the value of this right during the contract period of the venture.

The Regulations also resolve some practical problems that have arisen relating to the registered capital of joint ventures, prescribing that registered capital shall be the total investment subscribed by the parties rather than the amounts initially contributed, and that it may be registered in either Chinese or foreign currency. When cash contributions are converted into another currency, the conversion rate is to be the official Chinese exchange rate on the day of the contribution and not, as some foreigners thought, the "internal settlement rate" used in connection with China's foreign trade transactions.

When a participant seeks to assign any part of its investment to a third party, the Regulations not only require the consent of the other participants, but also give them a preemptive right to purchase the interest on no less favorable terms. In addition, they prohibit reduction of the venture's registered capital.

Obstacles to Attracting Foreign Management

The Regulations seem to reduce, if not entirely eliminate, one substantial obstacle with respect to the provision of the foreign exchange regulations that only 50 percent of the after-tax compensation of a foreigner working in China can be repatriated as a matter of right. The Regulations set forth the principle that foreign staff and workers of a joint venture can apply to the Bank of China for permission to remit all of their after-tax foreign exchange income once a deduction is made for their living expenses in China. How generously the new provision will be interpreted remains to be seen.

Interestingly, the Regulations are silent regarding the principle of "equal pay for equal work," which in effect has required that Chinese officials in a venture be paid the same salaries that are received by its foreign managers of the same position or responsibility. Foreigners have been upset at the lack of legislative basis for this demand as well as the additional costs it imposes. Indeed, the recent American Motors joint venture contract reportedly authorizes the venture to pay the additional salaries required under this principle into an escrow account until such time as some form of legislation is promulgated. Chinese officials confirm that the Regulations simply leave it to the board to decide management compensation, presumably according to the merit principle that they endorse for compensation generally.

Defining Management Roles

The Regulations reveal a sensitivity to conflicts of interest. They prohibit the venture's general manager and deputy general managers not only from holding similar posts in other economic organizations but also from having any connections with organizations that compete with the venture. This may mean that employees of the foreign investor who are given management posts in the venture will have to sever ties with the home company. The Regulations, however, do permit directors to hold management positions in the venture.

Lending to Joint Ventures

The Regulations are virtually silent on the question of debt-financing. They simply refer, in passing, to the 1981 regulations for handling loans to joint ventures by the Bank of China, and reaffirm the authority to seek loans from foreign banks. Unfortunately, both the problems of providing security for foreign loans and matters concerning third party guaranties are neglected.

Continuing Control by MOFERT

The Regulations reconfirm the role of MOFERT in approving and regulating joint ventures. They articulate the general criteria for entrusting this role to provincial or other central agencies under MOFERT's scrutiny in cases of smaller investments that will not affect the state plan, but do not indicate the precise amounts of investment that constitute the dividing line between centralized and decentralized authority.

The control by MOFERT and its authorized agents is not exclusive. The Regulations not only make the department in charge of the venture responsible for guiding, assisting, and exercising supervision over it, but also grant to the agents that registers joint ventures—the provincial or municipal level administrative bureau for industry and commerce—the same power that MOFERT and its authorized agents enjoy to supervise and inspect implementation of the joint venture contract and articles of association. It will be fascinating to observe how these overlapping responsibilities are exercised.

Signficantly, the Regulations attempt to define the role of joint ventures in China's planned economy. The law seeks to ensure a certain degree of autonomy for joint ventures while at the same time guaranteeing the ventures' priority access to centrally located resources. For example, ventures are given the right to do business independently under China's laws and the contract documents; they are to be guided and supervised, but not directed, by the Chinese government authorities. They are to develop their own construction plan, which is to be included in the construction plan of the department in charge, and given a priority claim upon domestic supplies in order to assure fulfillment of the plan. Furthermore, planning and administration departments are warned not to issue directives to ventures, but to leave them alone to work out their own production and operating plans.

Feasibility Study Costs

Although they do not address the question of costs, the Regulations do reaffirm the importance of a feasibility study report as the basis for approving and carrying out a joint venture. They also make clear that before such a report can be prepared and contract negotiations take place, a project proposal and preliminary feasibility study report prepared by the Chinese side must be approved by both the department in charge and MOFERT or its authorized agent. This requirement adds a formality to the investment process but offers potential investors some assurance that higher authorities are favorably disposed to their projects before they incur the expense of a full feasibility study and negotiations.

Costs of Raw Materials and Utilities

The Regulations prescribe the domestic agencies through which joint ventures must buy various types of materials. As for the purchase price and the currency of payment, they follow the Chinese foreign exchange regulations applicable to joint ventures in providing ▶ that six raw materials used directly in production for export—gold, silver, platinum, oil, coal, and timber—shall be priced according to international market prices, and be paid for in either foreign currency or renminbi (at whose option is unclear); ▶ that the purchase prices of imported commodities or those that would otherwise be exported by Chinese foreign trade companies shall be negotiated, taking into account international prices, and shall be paid in foreign exchange; and ▶ that the costs of all other materials, including coal used for fuel and oil for motor vehicles needed for manufacturing domestic goods, and the fees for utilities, transport, and services provided to ventures shall be the same as those charged to state enterprises and paid in renminbi.

Obviously, one should expect a certain amount of flexibility in the application of this provision. For example, one manufacturing joint venture, the Tianshan Woolen Textile Company, was recently permitted to pay for its principal raw material, wool (an export item), in renminbi rather than foreign exchange as originally required, in order to help make it profitable.

Photo by Huang Xingquan, New China Pictures Co.

Workers assemble television components at the Fujian-Hitachi TV Set Company, Ltd., a China-Japan joint venture.

The need to "heed the opinions" of workers

Here the most noteworthy aspect is the right granted to representatives of the venture's trade union to attend meetings of the board of directors as non-voting members to discuss not only matters related to labor conditions, but also general operations and development plans. The board is instructed "to heed the opinions of the trade union and obtain its cooperation" in connection with labor-related issues. The Regulations make clear the applicability to joint ventures of the requirement of China's trade union law that employers allot a sum equal to 2 percent of the salaries of all staff and workers as union funds.

Domestic Sales versus Exports

China's recent decision to open its domestic market is reflected in the Regulations. They "encourage" exports, but provide that products that are urgently needed or currently imported can be "primarily" sold at home. Generally, how each product is to be marketed within China depends upon how it is classified by the planning system. A venture normally will enjoy the option of doing its own domestic marketing only when its product is not covered by the state plan, or when it has already sold the required quantities to official marketing organizations. If, however, the product is one that a Chinese foreign trade company needs to import, it may be sold directly to that company for foreign exchange.

Profits and Pricing Policy

The Regulations offer no guidance to contract negotiators as to what may constitute a reasonable profit, but they nevertheless shed light on the standards and procedures for setting sales prices. For domestic sales, ventures are ordinarily to rank their products according to quality, set their prices according to state-set prices for that product quality, and receive payment in renminbi. However, they may ask Chinese price-control departments to make exceptions and permit some prices to take account of the international market. It is unclear whether in such cases the venture can expect payment in foreign currency. Export prices may be freely determined by the venture. In all situations, however, the venture must file its prices with the department in charge as well as with the price-control agency.

Foreign Exchange Regulations

Since some ventures, in accordance with their feasibility study reports and contracts, are now allowed to sell their products primarily in China, they may not be able to maintain sufficient foreign exchange earnings to balance their foreign exchange needs, as is generally required. In

such cases how will the imbalance be cured so that foreign exchange expenses can be met and profits remitted abroad? The Regulations come up with an innovative, if vague, answer. The provincial or municipal level government authority, or "responsible department under the State Council," shall make up the deficit from its own foreign exchange reserves. If the problem cannot be resolved in this manner, after approval by MOFERT and the State Planning Commission, the imbalance shall be included in the state plan.

The Regulations do not indicate whether joint venture foreign exchange earnings, if converted into renminbi, will be converted at the official exchange rate or at the higher "internal settlement rate" given to Chinese enterprises to encourage exports, nor whether foreign exchange provided to a joint venture under the above provision will be sold at the published rate or the internal rate. Chinese officials have stated, however, that joint ventures will be treated just as domestic enterprises are in this respect. Foreign exchange sold to or purchased from the Bank of China will be priced at the internal rate.

Protection of Industrial Property Rights

Although the Regulations contain several provisions that protect the interests of Chinese recipients of foreign technology transfers, they do little to enhance the protection of companies that transfer the technology. That is left to the forthcoming patent and technology transfer laws and, pending their enactment, to individual contracts.

Reasons for Early Termination

Surprisingly, the Regulations do not provide detailed guidelines for the duration of different types of ventures, such as tourism, light industry, and heavy industry. Instead, they state that ordinary projects will usually have a term of from 10 to 30 years, but that projects that involve large investments, lengthy construction periods, and low profit rates may have a longer term.

The Regulations elaborate upon the Law's cryptic reference to those circumstances that justify early termination of a venture. They reiterate that heavy losses, breach of contract, and force majeure can trigger dissolution, but in each case add that such circumstances must result in an inability to continue operations. They also introduce a broad new standard—"failure of the joint venture to achieve its business objectives, coupled with no possibility for future development"—and add that the parties in their contract may stipulate other reasons for premature dissolution.

Recognizing "Going Concern Value"

The Regulations do not indicate whether, in placing a value on the foreign investor's interest in a venture upon its termination, there will be some recognition of its "going concern value." They do authorize the board, under the supervision of the department in charge, to work out procedures and principles for liquidation, and to nominate a liquidation committee. The committee is obligated, among other things, to propose a basis for the valuation of property, thus presumably leaving the issue of intangible value open until that time. Incidentally, in some circumstances accountants and lawyers registered in China may be invited to serve on the committee.

Arbitration and Dispute Resolution

The Regulations make an important addition to the Law by providing that disputes may be settled in the courts, not solely by arbitration, if friendly consultation or mediation cannot resolve them. If there is no written arbitration agreement between the parties, any party may file a suit in the Chinese courts, which, since enactment of the trial Civil Procedure Law in 1982, are open to foreigners. The Regulations do not appear to contemplate suit in foreign courts. They do, however, clarify the Law by affirming that arbitration may take place outside China with the parties' consent, either in a third country or in the foreign investor's country, if it is the defendant.

Immunity and Governing Law

No mention is made of sovereign immunity, and probably none need be because the existence of explicit means of resolving disputes should eliminate any fear that Chinese commercial entities will invoke that doctrine in an effort to evade responsibility.

The Regulations make a major change, however, with respect to governing law. No longer will the foreign and Chinese parties be able to compromise, upon what is a sensitive point to each, by agreeing to make no reference to governing law in the joint venture contract. Article 15 expressly provides that the formation, legal effect, interpretation, and implementation of—and resolution of disputes under—a joint venture contract will all be governed by Chinese law. This provision will worry many foreign investors and put Chinese lawmakers under even greater pressure to complete the civil code, the foreign economic contract regulations, the patent law, and other necessary laws that have long been in the works.

Threat of Expropriation or Confiscation

There was a time when some Chinese officials expected that the Regulations would offer foreign investors more specific legal protection against this threat than that found in the general language of either the 1982 Chinese Constitution or the Law. Yet the lawmakers apparently decided to leave the matter to the bilateral investment protection agreements that China has signed or is now negotiating with foreign governments. To the extent that they are unprotected by such agreements or further legislation, foreigners will have to look to their investment contracts and to political risk insurance for protection.

Taxes and Customs Duties

The Regulations state that, on dissolution of the venture, the foreign participant shall pay income tax on the amount, if any, by which its pro rata return of the net assets or remaining property exceeds its investment. The tax is to be paid when the funds are repatriated.

Other significant provisions concern the industrial and commercial consolidated tax and customs duties. The Regulations confirm exemptions from both for designated joint venture imports, and exempt most exports from the consolidated tax while remaining silent about customs treatment. They also hold out the possibility that a venture

will enjoy an exemption from or reduction of the consolidated tax on domestic sales, if difficulties arise during its initial period of production.

Profit Distribution

The Regulations clarify several points regarding profits. The reserve fund (one of three funds deducted from the after-tax gross profit to arrive at net, that is, distributable, profit) may be used not only to make up losses but also, after appropriate administrative approval, to add to the available capital for expanding the venture's production. No profits are to be distributed unless previous years' losses have been made up. Moreover, there is no legal requirement that the board distribute profits annually; the matter lies within its discretion.

As we have noted, the Regulations do not address all the questions confronting foreign investors. Nor do they clear up all of the questions that they do address. For example, they seek to articulate the implicit distinction that the Law makes between an "agreement" and a "contract." They tell us that the former records "certain important points and principles" governing the establishment of the joint venture, while the latter records the parties' rights and obligations. But what function does an "agreement" serve? Is it merely an interim negotiating document, or can it suffice to initiate a project? Is it binding upon signature, without higher governmental approval? Is it to be approved before the contract and articles of association, as practice suggests, or at the same time as the other documents, as one might infer from the Regulations?

Plainly the Regulations raise many new questions of interpretation. Only one more will be mentioned here. Will the Regulations be applied in all respects to existing ventures or, in order to avoid the unfairness of retroactive application of certain provisions, will such provisions only be applied to future ventures? For example, will foreign investors who resisted inclusion of a Chinese governing law clause when negotiating their contracts now be told that such a provision has been imposed upon them? In analogous circumstances, in order to avoid creating so unattractive a precedent, the Ministry of Finance has generally been careful to make its tax promulgations prospective in application, and perhaps a similar interpretation will be given to the Regulations.

In any event, although questions inevitably exist, the Regulations provide much useful guidance and represent yet another major step forward in China's long march to create a legal environment attractive to foreign business.

Jerome Alan Cohen is a partner in the international law firm of Paul, Weiss, Rifkind, Wharton & Garrison. He commutes to China from New York and Hong Kong as the legal advisor to American and foreign companies. He also teaches part-time at Harvard Law School.

Jamie P. Horsley is an associate with Paul, Weiss, Rifkind, Wharton & Garrison, and has been residing in Beijing for the past two years.

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 OCTOBER 20

Foreign Party/ Chinese Party	Product/Value/ Date Reported
Agricultural Commodities	
(Australia)	1.5 million metric tons of wheat. $237,465,000 (Aus$270 million), late 1983–early 1984. 7/25/83.
Lohmann Tierzucht GmbH. (W. Germany)/ China National Animal Breeding Stock Imp. & Exp. Corp. (CNABSIEC)	62,800 day-old chicks. $531,000 (DM 1,418,900). 8/1/83.
(W. Germany)/CNABSIEC	196 milk cows. 8/1/83.
(Hungary)/CNABSIEC	210 hogs. 8/1/83.
(US) and (W. Germany)/ CNABSIEC	1,628 rabbits. 8/1/83.
(Switzerland), (France), and (Japan)/CNABSIEC	230 tons of pasture seeds. 8/1/83.
Minnesota Wheat Research and Promotion Council (US)	Donation of 38,000 lbs. of bread flour. 8/20/83.
Joe Buckner (UK)	Signed 10-year contract to sell ducks. 8/30/83.
State of Idaho (US)	Negotiating sale of logs. $125 million. 9/13/83.
NA (Macao)/Aquatic Breeding Co. of Nafu Commune, Guangdong	Cooperative aquatic breeding farm in Taishan County, Guangdong. Macao investment: $128,000 (HK$1 million). 9/19/83.
(US)	120,000 metric tons of wheat for delivery in 1983–84, bringing 1983 total grain purchases to 3.5 million tons. 10/5/83.
CSR Ltd. (Australia)/ CEROILS	Signed long-term contract for the supply of raw sugar. 10/11/83.
Agricultural Technology	
Sand Livestock Systems (US)	Signed 5-year contract to operate swine-confinement units. 7/83.
United Nations Development Program	Signed agreement to continue cooperation on the development of the China Agricultural Remote Sensing Training and Application Center. 9/12/83.
Chemicals	
(Kenya)	10,000 tons of soda ash. 7/28/83.
(Switzerland), (France), and (Japan)/CNABSIEC	128 tons of fodder additives. 8/1/83.
(Brazil)	55,000 tons of urea. $90/ton fob. 8/15/83.
(Saudi Arabia)	50,000 tons of bagged urea. $130/ton fob. 8/15/83.
Showa Denko (Japan)/ SINOCHEM	4,000 tons of polyethylene per month for 6 months. 9/20/83.
Chemical and Petrochemical Plants and Equipment	
Albright and Wilson (UK)	Negotiating contract to expand a detergent plant in Tianjin. 6/27/83.
Tecnimont, subsidiary of Montedison (Italy)	Negotiating sale of technology. 7/11/83.
Mitsui Toatsu Chemicals Inc.	Has entered into an agreement to assist in chemical plant technology for Tianjin, initially to involve chloralkali and polyvinyl chloride. 8/2/83.
(Philippines)/Shenzhen Municipal Petrochemical Industry Corp.	Signed letter of intent to build an oil refinery in Shenzhen. $500 million. 8/7/83.
Asahi Chemical Industry Co. (Japan)/China National Chemical Construction Corp.	Will convert a Lanzhou caustic soda plant to the bipolar membrane process. $2 million. 8/17/83.
Teijin Ltd. and Nissho Iwai Corp. (Japan)/ TECHIMPORT	Contract for a polyester filament plant. $21 million. 8/29/83.
USS Engineers & Consultants Inc., subsidiary of US Steel/Shanghai Gao Qiao Petrochemical Corp.	Used equipment, engineering services, and limited license to make and sell ABS. $5 million. 10/18/83.
Construction and Construction Materials	
Yamahiro (Japan)/China National New Building Materials Corp.	Are discussing supply of a dry-wall screw plant. 7/83.
Simplex Housing International (US), Thyssen Rheinstahl Technik GmbH. (W. Germany), and Haibin International Co., Ltd. (HK)/SITCO and Jing Jiang Hotel Group	Contract to build 6-story office building. 8/8/83.

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*.

Veneer Products Ltd. and Singapore Southseas Commodities Private Ltd. (Singapore)	Signed agreement to develop and operate a warehouse complex in Shenzhen. 8/24/83.
Shin Nippon Airconditioning Engineering Co. (Japan)	Air conditioning system for the Lido Hotel located in Beijing. 8/29/83.
(Denmark)/Heilongjiang	Signed agreement for joint manufacture of heat insulation pipes. 8/31/83.
Toyo Sash Co. (Japan)	Aluminum sash for: 1) Garden Hotel, Guangzhou. $1.6 million (¥400 million); 2) Bank of China building, Beijing. $1.23 million (¥300 million). 9/20/83.
Monier Ltd. (Australia)	Contract for supply and installation of a prestressed concrete pipe-making plant in northeast China. 10/14/83.

Consumer Goods

Industrie Riunite Eurodomestici (Italy)/Beijing Refrigerator Factory	Signed agreement to provide refrigerator know-how and production methods. 7/31/83.
Kam Tai Co. (HK)/ Shantou	Will jointly operate a furniture and decoration firm. 8/23/83.
Philip Morris Inc. (US)/ Guangzhou Cigarette Factory No. 2	Will conduct a joint feasibility study. 10/10/83.
Philip Morris Engineering Service (US)	Contract for 50 cigarette-making machines to update factories in Shanghai and two other provinces. 10/10/83.

Electronics

Ai Electronics Corp. (Japan)	20 16-bit microcomputers. $348,000 (¥85 million). 6/83.
International Scientific (Japan)/China Aviation Equipment Corp. (SITCO)	Signed agreement for supply of equipment and know-how for construction of personal computers and semiconductor factories. $41 million (¥10 billion). 7/83.
Tokai Bank (Japan)/ Shanghai Investment and Trust Corp.	Bank will supply computer know-how and will cooperate in arranging trade deals between Japan and China. 7/26/83.
Future Computers (UK)	Microcomputers. $3 million (£2 million). 7/28/83.
Apple Computer (US)	500–600 microcomputers. 8/83.
Joint Electronic Teller Services Co. (HK)/Bank of China	100 NCR 1780 automated teller machines and two NCR V-8555 Model II computers. $5 million. 8/83.
Cable & Wireless Systems Ltd. (HK)	13 Emerson uninterruptible power supply units. 8/83.
Hitachi (Japan)	Seven mainframe computers. $5 million. 8/83.
Swire Engineering Ltd. (HK)/Mindong Development Corp. of New Technology, Fujian	Agreement to assemble microcomputers. 8/1/83.
Seiscom Delta Inc. (US)/ Ministry of Petroleum	Two geophysical virtual image plotter systems and two 3d generation Megaseis multiprogramming systems with software. 8/1/83.
IBM Japan Ltd./ INSTRIMPEX	11 4300-series mainframe computers. $1.2 million. 8/26/83.
Fanuc Ltd. (Japan)/ TECHIMPORT	Have established a digital control device service center, Beijing Digital Control Equipment Plant. 8/29/83.
Aydin Computer Systems (US)	An image-processing system for a textile factory. $200,000. 7/27/83.
Swire Systems	350 Victor 16-bit microcomputers. $3.5 million. 9/1/83.
NA (US)/Jiatong University	Cooperating on software development. 9/10/83.
Video Technology Ltd. (HK)	Negotiating sale of 20,000 Laser 200 color home computers. 9/11/83.
Sony Corp. (Japan)	Audio-video equipment. 9/26/83.
Dataprep (HK)	50 GE 2030 printers. $60,000. 10/83.
Sems (France)	An S16 small-scale production line that just began trials. 10/83.
Far East Computers (Singapore)	20 computer systems for technical institutes. $653,000. 10/83.
Sinclair Research (UK)/ South China Computer Co. and China Electronics Import and Export Corp.	Agreement to assemble home computers in Guangzhou. 10/83.

Food Processing

Producer Manufactures Pty Ltd. (Australia)	A 2,000-ton capacity cold storage complex to be located at Huangpu. 7/5/83.
Sodima (France)	Contract for dairy production assistance. 7/18/83.
NA (Denmark)/Xingxia No. 3 Sugar Refinery	Loan, technology, and equipment for a sugarbeet processing plant. 8/8/83.
Mojonier Co. (US) and Seitz, Enzimkur, and Noll (W. Germany)/Shanghai Food Industry Corp. and Shanghai Soda Water Factory	Production and bottling equipment. 8/22/83.
Fronz Bass Co. (Austria) and Tebopharn Co. (Netherlands)/Shanghai Food Industry Corp. and Taikang Food Products Factory	Waffle production and packaging equipment. 8/22/83.
Hebenctreit Co., Collich Co., Loesch Co. (W. Germany)/Shanghai Food Industry Corp. and Shanghai No. 1 Yimin Food Products Factory	Chocolate wafer production and packaging equipment. 8/22/83.
Bosch Co. (W. Germany) and Carle-Montonair Co. (Italy)/Shanghai Food Industry Corp. and Shanghai No. 6 Yimin Food Products Factory	Candy production line. 8/22/83.
(Denmark)/Heilongjiang	Signed agreements to provide dairy product and beer processing technology. 8/31/83.
Vitasoy Edgell (HK) and Peterville Co. (Australia)/ CEROILS, Guangdong branch	Vegetable processing technology. 9/11/83.
Orion Machinery Co. (Japan)/China National Aero-Technology Import and Export Corp.	Dairy machine parts and assembly know-how. $226,000 (¥55,200,000). 9/20/83.

Machinery

Shoda Iron Works and Tomei Trading (Japan)/ Heilongjiang International Technology Cooperation Corp.	Wood processing machinery for a furniture factory in Qiqihar. $1.23 million (¥300 million). 7/83.
Housten Systems Manufacturing Co. (US)/China National Machinery Corp.	Signed contract for 13 portable steam generators for enhanced oil recovery projects. $5.5 million. 8/83.
Toshiba Corp. (Japan)/ TECHIMPORT	Received plant order for manufacturing laundry equipment to be located in Beijing. $1.04 million (¥250 million). 8/5/83.

Metals and Minerals

Fluor Corp. (US)/China National Coal Development Corp.	Contract for basic engineering of the Huolinhe coal mine in Nei Monggol. 8/22/83.
Nippon Light Metal Co. Ltd. (Japan)/Guizhou Aluminum Works	30,000 metric tons of alumina. 8/26/83.
(UK)	650 tons of nickel alloy. 8/29/83.

Ramsey Engineering Co. (US)	Four coal sampling systems and two coal laboratories for the ports of Shijiusuo and Qinhuangdao. $3.2 million. Summer/83.
Nippon Steel Corp. (Japan)/TECHIMPORT	Signed contract to provide managerial and technical training for the Baoshan Iron and Steel complex. 9/15/83.
British Steel Corp.	Discussing sale of two used steel works. $25.6 million (£17 million). 9/29/83.

Mining Equipment

Komatsu Ltd. (Japan)/ China National Coal Development Corp.	Negotiating sale of opencut coal mining equipment. 7/25/83.
Anderson Strathclyde (UK)	Signed contract to produce coal shearers in China. 9/20/83.

Petroleum

AMF Geo Space (US)/ China National Oil and Gas Exploration and Development Corp.	Geophysical cables, connectors, and test equipment. 7/4/83.
Offshore Joint Services Co. (Singapore)/China Nanshan Development Co.	Will take a 30% interest in operating the Chiwan supply base. 8/83.
Offshore Joint Services Co. (Singapore)/CNOJSC, Equipment Maintenance Co.	Contract for repair and maintenance of offshore rigs and support vessels. 8/83.
Osprey Electronics (UK)/ Chinese Shipbuilding Trading Co.	An underwater TV system to be installed on a semisubmersible. $75,000 (£50,000). 8/4/83.
Energy Projects (SE Asia) Ltd. and Petroleum New SE Asia Ltd./CNOJSC	Contract for oil industry familiarization and training for CNOJSC personnel. 8/5/83.
Yau Luen Shipyard (HK)/ Nanhai West Oil Co.	Contract to repair the Nanhai 1 rig. 8/26/83.
Nippon Steel Corp. (Japan)/China Ocean Engineering Services	Signed contract to lift an oil storage jacket on the bed of the Bohai Sea. 9/15/83.
Mitsubishi Heavy Industries Ltd. and Chengbei Oil Development Corp. (Japan)/China Bohai Oil Co. and China Offshore Platform Engineering Corp.	Signed contract to build five offshore platforms. 9/23/83.
Esso Petroleum China Ltd. (US)	Signed agreement to build an oil terminal and pier in Shenzhen. $1 million. 9/30/83.
ENI (Italy)	Is discussing collaboration in research for development of new offshore oil fields and assistance and modernization of land-based oil fields. 10/11/83.

Pharmaceuticals

(Brazil)/Ministry of Public Health	Signed protocol to cooperate in Chinese medicinal herb applications, acupuncture, treatment of cancer, and investigation of tropical diseases. 8/19/83.
Sanofi (France)/Ministry of Public Health	Negotiating the transfer of hepatitis B vaccine technology. 8/24/83.
Lark Co. (Italy)/State Pharmaceutical Administration and TECHIMPORT	Signed contract for the technology using cephalosporin C to produce vaccine strains and cephalosporin C zincate. 9/12/83.

Ports

NA (Australia)	Signed contract to build a dock at Mawan, Shenzhen. 7/24/83.
Norsk Hydro AS (Norway)	Will build a fertilizer terminal in Shekou. 8/16/83.
Industrial Bank of Japan/ Shanghai Trust and Investment Corp.	Signed memorandum of understanding to provide technological cooperation for the construction of a new Shanghai port. 9/13/83.

Scientific Instruments

Amarel Precision Instruments (US)/Shanghai Optical Instruments	API will market the Shanghai company's products in the US and provide engineering assistance. 7/83.
Instron (UK)	Materials testing equipment. $337,500 (£225,000). 7/7/83.
Kratos (UK)	An electron spectrometer. $330,000 (£220,000). 7/7/83.
Seiscom Delta Inc. (US)	Signed letter of intent to form a company near Beijing to make equipment for use in oil and gas exploration. 7/26/83.
Japanese International Cooperation Corp./China State Scientific and Technological Commission	A nuclear magnetic resonator for polypropylene research. 8/15/83.
Rank Cintel (US)/ INSTRIMPEX and China Central TV Station	Two Digital MK IIIC flying-spot telecines. 9/83.
Amano Corp. (Japan)	Time recorders. 9/1/83.
Tektronix Co. (US)/Oriental Scientific Instruments Import and Export Corp.	Have established the Beijing Tektronix Technical Service Center. 9/6/83.

Shipping

Amatista Shipping Corp. (Liberia)	A 7,695-ton ferry. $3.9 million. 7/5/83.
NA	Three large Greek-flag tankers for shipbreaking. 7/7/83.
Blue Star (UK)	Two British-flag cargoships. 8/10/83.
Brown Boveri Co. (Switzerland)/Shanghai Shipyard	Established a turbosupercharger service station. 8/15/83.
Skipskonsulent A/S and Flekkefjord Shipyard (Norway)	A fishery research vessel for 1984 delivery. 8/23/83.
NA (Thailand)/Shantou Special Economic Zone Development Co.	Signed agreement to form a company to handle passenger and freight shipping between Shantou and Hong Kong. 8/29/83.
British Royal Navy, Hydrographic Dept./Shanghai Ocean Shipping Co.	Signed ocean shipping cooperation agreement in which China will be provided with British admiralty charts and other publications. 9/24/83.
Star Offshore Services (HK)	Two offshore supply vessels for the BP consortium. $7.5 million (HK$64 million). 10/12/83.

Telecommunications

Philips Telecommunications Manufacturing Co. Ltd. (Australia)/Ministry of Electronics Industry	430 units of mobile radio equipment, and perhaps 1,000 more. $1.3 million (Aus$1.5 million). 7/23/83.
Lynch Communications Systems (US)	Trial installation of concentrators. 8/22/83.
Nippon Electric Co. Ltd. and Sumitomo Corp. (Japan)/MACHIMPEX, Tianjin branch and Tianjin Municipal Administration of Posts and Telecommunications	10,000 telephone exchanges, a number of 1,000-circuit long-distance exchanges, 199 32-channel pulse code modulation transmission systems, and 3,500 push-button telephones. 9/21/83.

Textiles

Pierre Cardin (France)	Signed contract to set up Cardin sales counters in Beijing hotels and stores. 9/1/83.

Textile Equipment

Mitsubishi Corp. and Nissan Motor Co. (Japan)/Yichang City, Hubei	Order for a texturized polyester yarn plant including 120 water jet looms. $6 million (¥1.5 billion). 8/2/83.

Shuulchi Saito Corporate Planning Office Brother Industries Ltd. (Japan)/ Shenyang Clothing Industry Corp.	Have agreed to operate a repair center for industrial sewing equipment at the Shenyang Sewing Equipment Factory. 8/22/83.
Chia Tai International Investment Co. Ltd. (Thailand)	Will invest in a wholly-owned carpet factory to open in Shantou. 8/23/83.
(Japan) and (W. Germany)/Liuzhou Knitwear Mill	Warp knitting machines. $960,000. 9/12/83.
(Switzerland) and (W. Germany)/Nanning City Knitwear Mill	Finishing equipment, dyeing machines, and driers. $200,000. 9/12/83.

Tourism

Wing Wah Agency Ltd. (HK)	Will renovate the Haiban Hotel in Zhanjiang. 7/83.
Wing Luem Shim Ltd. (HK)/CITS, Dongwan County, Guangdong	Signed agreement to jointly develop and manage the Humen Tourist Village. 8/1/83.
Robin Shipbuilders Private Ltd. (Singapore)	Is constructing the 500-room Lido Hotel in Beijing. 8/29/83.
Mitsubishi Transport Associates (Japan)/ Changjiang Reservoir Tourist Area Administration	Undertaking construction of the Changjiang Hotel and the Changjiang Entertainment Center. $7.75 million (HK$58 million). 9/83.
Nanyang Commercial Bank Ltd. (HK)/Guilin City Tourist Co. and Bank of China, Trust Dept.	Jointly constructing the 800-bed Guishan Tourist Center. $15 million. 9/12/83.

Transportation

CompAir Reavell (UK)/ China National Aero-Technology Import and Export Corp.	Test equipment for development of jet engines. $750,000 (£500,000) 6/21/83.
Sumitomo Corp. and Toyo Kogyo (Japan)/ Chongqing Automobile Factory	Discussing production of commercial vehicles. 7/83.
Daihatsu Motors (Japan)/ Tianjin Automobile Factory	Will assemble light trucks. 7/83.
NA (Australia)	Signed contract to build a railway connecting Mawan with Boji in Shenzhen. 7/24/83.
Peugeot (France)/ MACHIMPEX	Signed contract for 200 model 504s plus spare parts. 7/30/83.
Renault (France)/ MACHIMPEX	Signed contract for 200 R-18 TS automobiles. 8/2/83.
Farrel Bridge (UK)	Cross-ply tire-making machinery for Dunlop-contracted tire factory in Guangzhou. $2.25 million (£1.5 million). 8/4/83.
Scania (Sweden)/Ministry of Forestry	150 6×4 trucks. 8/15/83.
Kuehne & Nagel Airfreight Inc. (US)/China National Foreign Trade Transportation Corp.	Has been authorized as an air freight agent for freight moving from the US to China. 8/22/83.
Urban Transportation Development Corp. (Canada)/Shanghai Investment and Trust Corp.	Signed agreement for a feasibility study of a proposed rapid transit system for Shanghai. 8/29/83.
Wam Fai, Wai Shing Trade and Transport Co. (HK)/Wuzhou Automobile Transport Co.	Will cooperate to service imported motor vehicles. 9/12/83.
Isuzu Co. (Japan)	Will start a Beijing service station. $400,000 (¥100 million). 9/20/83.
NA (Japan)/MACHIMPEX	2,000 vehicles, including deluxe coaches, limousines, minibuses, and truck chassis. 9/20/83.
Teijin Ltd., Toyobo Co., Toray Industries Inc., and Unitika Ltd. (Japan)	Contracts for 1,200 tons of nylon tirecords. 9/20/83.

Miscellaneous

G & B Automated Equipment Ltd. (Canada)	Signed letter of intent in early '83 to modernize an abrasive plant. 6/27/83.
Trans-Lingual Communications Inc. (US)	Appointed exclusive US agent for three PRC newspapers. 8/83.
Flonico (UK)	Two plastic tanks for a water treatment project. 8/83.
(Switzerland), (France), and (Japan)	82 police dogs. 8/1/83.
Nomura Research Institute (Japan)/Shanghai Investment and Trust Corp.	Signed contract to establish a joint consultant office for urban construction, industrial development, and technical renovation in Shanghai. 7/26/83.
International Publications Corp. (USSR)/China National Publications Import and Export Corp. and Guoji Shudian	Signed book exchange accord. 9/12/83.
Industrial Bank of Japan/ State Economic Commission, Energy Bureau	Will cooperate in developing energy-saving technology; IBJ will act as intermediary to transfer Japanese technology. 9/13/83.
Hoya Corp. (Japan)/ China North Industries Corp.	Optical glass manufacturing plant and production know-how located in Chengdu, Sichuan. $14,000 (¥3.5 million). 9/14/83.
Canadian Broadcasting Corp./Ministry of Radio and Television	Will exchange radio and television programs. 9/16/83.
First Interstate Trading Co. (US)/Bank of China, Trust Dept. and Shanghai Foreign Trade Consulting Corp.	Signed agreements to assist each other in marketing and marketing research. 10/3/83.

中外贸易 CHINA'S EXPORTS THROUGH OCTOBER 20

Foreign Party/ Chinese Party	Product/Value/ Date Reported
Agriculture	
(Sri Lanka)/China Agricultural Machinery Import and Export Corp.	325 sets of small tractors and 100 sets of combine harvesters. 7/24/83.
(Brazil)	Signed protocol to promote exchanges in agriculture, animal husbandry, and fishery. 8/3/83.
(United Arab Emirates)	1,050 lambs from Xinjiang. 8/15/83.
(USSR)	750 tons of frozen meat from Anhui. 8/18/83.
Mitsubishi Corp. and Yamada Co. (Japan)/ CEROILS	Signed 3-year contract to supply fresh vegetables. 8/23/83.
Construction	
Yamazaki Construction (Japan)/Xi'an Municipal Base Construction Council	Contract to train Chinese construction workers, half to be employed by Yamazaki for overseas projects. 7/83.
(Mali)/China Construction Engineering Corp.	Signed contract to build an Islamic cultural center in Mali. 8/22/83.
NA (HK)/China Construction Engineering Corp.	Awarded contract for the first phase of construction of the Tuen Mun town park in Hong Kong. $4.1 million (HK$32 million). 9/11/83.

(HK)/China Overseas Building Development Co.	Awarded a tender for construction of a housing development project in Shatin, New Territories. $8.07 million (HK$67 million). 10/83.
Electronics	
Fujitsu Ltd. (Japan)/ Qinghua University	Computer software. 8/31/83.
Food Processing	
Siribala Sugar Refinery (Mali)	Will have its equipment overhauled with Chinese assistance. 8/12/83.
(Zambia)	China handed over the Chingola maize mill. 8/18/83.
Foreign Aid	
(Central African Republic)	Loan to improve CAR's radio network, medical services, and agriculture. $15 million. 7/31/83.
(Senegal)	Medicine and medical apparatus. 9/6/83.
(Sri Lanka)	Airlifted relief materials including blankets, garments, and fabric. 9/8/83.
Machinery	
(Pakistan)	China is studying three cooperative projects: a heavy-duty machinery plant, a casting plant, and a machinery repairing plant. 8/1/83.
Ministry of Hydraulics (Algeria)/China National Agricultural Machinery Import & Export Corp.	1,000 diesel engine pump units for irrigation and drainage. $800,000. 9/12/83.
Military Equipment	
Zimbabwe Air Force	24 MiG planes plus training for pilots and maintenance personnel. 7/83.
Petroleum	
(Thailand)	50,000 tons of Shengli crude. 8/19/83.
Naess Hallman Inc. (US)/ Shanghai Offshore Petroleum Engineering Corp. (PRC-US joint venture)	Two semisubmersible drilling platforms and other rigs. 8/22/83.
Kashima Oil Co. (Japan)	300,000 barrels of Daqing crude. $27.70/ barrel. 8/30/83.
Power	
(Philippines)	Hydroelectric power station for the Magat River project. $2.2 million (24 million pesos). 8/11/83.
Telecommunications	
MEYEI (US)/China Electronics Import and Export Corp.	US company will market Chinese telephone sets in the US; 60,000 already ordered. 7/25/83.
Transportation	
Burlington Northern Railroad (US)/China Railway Foreign Service Corp.	12 electric switch machines. 7/83.
Topac International Trading Co. (US)/SINOCHEM	10,284 passenger car tires. 8/25/83.
Trade Agreements	
(Albania), (Argentina), (Pakistan), and (Seychelles)	Signed trade and economic cooperation agreements in August and October.
(Bulgaria), (Canada), (Mexico), and (Nigeria)	Signed science and technology agreements in August, September, and October.
Miscellaneous	
Eotvos Lorand University (Hungary)/Ministry of Culture	500 Chinese books. 9/13/83.
AMF Co. (US)/Shanghai No. 3 Rubber Products Factory and INDUSTRY, Shanghai branch	750,000 rubber balls for 1983 and 800,000 for 1984. 9/26/83.

中外贸易

DIRECT INVESTMENT/PROCESSING/ COUNTERTRADE THROUGH OCTOBER 20

Foreign Party/ Chinese Party	Arrangement/Value/ Date Reported
Joint Ventures	
Chada Computer Co. and Jilu International Trading Co. (HK)/two Beijing companies	Formed the Zhongming Computer Co. to provide technical consultation on computers, assemble and repair hardware, and train personnel with software. 5/83.
Bishop Graphics Inc. (US) and Thai-An Trading Co. (HK)/Shenzhen Electric Appliances Manufacturing Co. and Bank of China, Shenzhen branch	Have entered into a 10-year agreement to manufacture and distribute printed circuit design products. $1 million +. 7/19/83.
Dyvi Offshore (Norway)/ CNOOC	Signed agreement to charter rigs for offshore drilling. 7/22/83.
Cable & Wireless (UK)/ China Nanhai Oil Joint Services Corp. and Guangdong Provincial Posts and Telecommunications Bureau	Formed the Huaying Nanhai Oilfield Telecommunications Services Co. to provide service for oil exploration and development of the South China Sea. $2.7 million initial investment. (PRC: 51%-UK:40%). Signed 7/25/83.
Cheong Ming Toy Factory (HK)/Fujian Enterprises Co. Ltd.	Joint operation of an electronic toy factory in Hong Kong. $770,000 (HK$6 million) initial investment. 7/31/83.
Tokyo Maruichi Shoji Co. and The Core Group (Japan)/China Electronics Import and Export Corp.	Have formed the Beijing Core Soft Co. to develop computer software. (PRC:51%-Japan:49%). Capital: $61,000. Signed 8/83.
IMT Tractor Plant (Pakistan)/China National Farm Machinery Import and Export Corp.	Discussion of joint production of the Chinese Taishan-25 tractor in Pakistan. 8/1/83.
Australian-Hong Kong consortium/Shenzhen Municipal Petrochemical Industry Corp.	Negotiating construction of a large petrochemical complex in Shenzhen. $1.75 billion. 8/3/83.
Occidental Petroleum Corp. (US), Société Nationale Elf Aquitaine and Total Exploration (France), and Tricentrol Exploration Overseas Ltd. (UK)/CNOOC	Signed contract for oil exploration in the South China Sea. 8/6/83.
Occidental Petroleum Corp. (US), Hispánica de Petróleos S.A. (Spain), Ampol Exploration Ltd. and CSR Ltd. (Australia), and Tricentrol Exploration Overseas Ltd. (UK)/ CNOOC	Signed contract for offshore oil exploration in the South China Sea. 8/6/83.
Chia Tai International Investment Co. Ltd. (Thailand)/Jinan Joint Co. of Animal Husbandry, Industry and Commerce	Negotiating establishment of a condensed animal feed plant. Investment: $2.6 million. 8/8/83.
China-Agro-Industries Development Co. (HK) subsidiary of Lark International Ltd. (US)/ Guangzhou Xintang Orchard	Cooperation on a joint cattle farm in Guangzhou to export beef and milk. $300,000. (PRC:40%-US:60%). 8/13/83.
(Tanzania)	Conducting feasibility studies of Chinese–Tanzanian ventures in the areas of ship repair, fishing, and construction. 8/14/83.
Goodyear Group (HK)/ Shenzhen	Opened a printing and packaging plant, and the East Lake Hotel. 8/15/83.
Esso-China Ltd. (US) and Shell Exploration (China) Ltd. (UK)/CNOOC	Signed contract for offshore oil exploration in the South China Sea. 8/23/83.

MIS Co. (US)/Yinchuan Electrical Meters and Instruments Factory, Ningxia	Signed letter of intent to form a company to produce rural environmental protection equipment. Investment: $10 million. 8/29/83.
Carveston Co. (HK)/ Xinghua Commerce & Industry Co.	Agreement to jointly construct and operate an exhibition and exchange center in Guangzhou. $21.7 million. 8/31/83.
Universal Toy Co. (HK)/ Shanghai Toy Import and Export Corp.	Signed agreement to form the Shanghai Universal Zinc-Alloy Toy Co. located in Minhang. 9/83.
Occidental Chemical Co. Ltd. (HK)/Duyun Electronics Industrial Co., Technological Research Institute of the Ministry of Electronics Industry	Will sign agreement to convert its distributorship to a 50-50 venture located in Shenzhen. 9/83.
Meishek Investment Ltd. (HK)/China Nanhai Oil Joint Service Corp.	Formed the Nanhai Oil Center to develop and operate a housing, business, and recreation center for oil personnel. 9/2/83.
Japan National Oil Corp./ CNOOC	Signed contract for oil exploration in the Pearl River mouth basin. 9/5/83.
Idemitsu Oil Development Co. Ltd. (Japan), Natomas (Far East) Ltd. (US), and Cluff Oil P.L.C. (UK)/CNOOC	Signed contract for oil exploration in the Beibu Gulf. 9/5/83.
Kam Kui International Holdings and Nanyang Finance Co., Ltd. (HK)/ Hangzhou Tourist Co. and Hangzhou International Trust and Consultancy Corp.	Have approval to construct the 680-room Hangzhou Dragon Hotel. Investment: $30 million. (PRC:55%-HK:45%). 9/5/83.
Gentex Co. (Italy)/Shanghai Foreign Trade Corp.	Formed the Shanghai Overseas Trading Corp. located in Geneva to promote Shanghai exports. 9/5/83.
Libyan Arab Foreign Investment Co./Zhejiang International Trust and Investment Corp.	Signed agreement to form the China-Libyan Arab Textiles Co. to be located in Hangzhou. (PRC:45%-Libya:55%). 9/12/83.
Hua Jin United Enterprise Ltd. (HK)/Shanghai Furniture Co.	Established the Shanghai Upholstered Furniture Co. located in Shekou. (PRC:45%-HK:55%). $385,000 (HK$3 million). 9/14/83.
Exectrade Ltd. (HK)/Tianjin No. 6 Garment Factory and Tianjin Economic Development Corp.	Established the Tianjin Synthetic Padding Joint Manufacturer Ltd. to produce spray bonded web, bulk fiber, and bonded fabrics. Registered capital: $818,000 (¥1.62 million). (PRC:60%-HK:40%). 9/19/83.
Ministry of Fisheries (Sri Lanka)/China International Engineering Corp. for Agriculture, Livestock and Fishery	Signed 20-year agreement to establish the Lanhua Fisheries Co. in Colombo to raise aquatic products. (PRC:49%-Sri Lanka: 51%). 9/26/83.
British Columbia Resources Investment Corp. (Canada)/CITIC	Discussing a forest products venture. 10/83.
Crown Zellerbach (Canada)	Discussing a venture. 10/83.
Geoservices Co. (France)/ CNOOC	Signed contract to form the China-France Bohai Geoservices Co. Ltd. based at Tanggu to provide mud slurry logging services. 10/8/83.
Feltex New Zealand Ltd.	Reached a preliminary agreement for a carpet manufacturing plant located in Suzhou. $6.5 million. 10/12/83.

Compensation Trade

Joseph Corn & Son (US)/ Ningxia Wool and Leather Industrial Co.	Processing and tanning facilities in exchange for lamb wool goods. 7/24/83.
Wing Hing Cotton Yarn Co. (HK) and Ingolstadt Factory (W. Germany)/ No. 3 Cotton Mill of Shijiazhuang, Hebei and CHINATEX, Hubei	Two spinning machines in exchange for yarn. 8/15/83.
Mitsui and Co. Ltd. (Japan)/Ih Ju League Textile Industrial Co., Nei Mongol	Equipment for a woolen interlining fabric mill in exchange for its products. 8/28/83.
Crown Trading Co. Ltd. (Japan)/Hainan Agriculture-Industry-Commerce United Enterprises Corp. for Land Reclamation	Technology and equipment to raise stevia rebaudina, a natural sweetener perennial, in exchange for a percentage of the crop. $400,000. 9/5/83.
Hing Wai Trading Co. (HK)/Beihai Marine Fishing and Salvation Co.	Fishing boats and gear in exchange for aquatic products. $230,000. 9/12/83.
Fong Chou Wooden Ware and and Toy's Mfg. (HK)/Nanning Furniture Co.	Processing equipment and new designs in exchange for furniture. $38,000. 9/12/83.
Chori Co., Ltd. (Japan)/ Longsheng County Talcum Mine	Technology and equipment for processing talcum powder in exchange for the powder. 9/12/83.
Kanematsu Gosho Ltd. (Japan)/China National Native Produce and Animal By-Products Import and Export Corp., Jiangsu branch and Economic Planning Commission of Wujiang County.	Loan for purchasing equipment and technology for a rabbit hair weaving mill in exchange for mixed rabbit hair wool. $1.6 million (¥400 million). 9/19/83.
Kanematsu Gosho Ltd. (Japan)/Zhangyu Wine Brewing Co., Shandong	Wine cultivation and storage technology in exchange for wine. 9/19/83.

Licensing

Scientific Design Co., subsidiary of Texas Eastern Corp. (US) and Toyo Engineering (Japan)/ TECHIMPORT	Ethylene oxide-ethylene glycol technology for a new plant in Nanjing. 6/83.
AGA Navigation Aids (UK)/Guangzhou Scientific and Technical Exchange Center	Are discussing production of navigation aids. 8/83.
Berg Industries (US)/Ministry of Public Health	Production of "Perception" sunglasses. 8/3/83.
Yamato Scale Co., Ltd. (Japan)/Yingkou No. 3 Instruments Plant, Shenyang	Technology and equipment for production of the EC series electronic belt-balance. $850,000. 9/12/83.

Coproduction

Teccor Electronic Inc. (US)	Negotiating joint production of semiconductors and control devices. 3/83.
Best Land Development Ltd. (HK)/Shanghai Jinjiang Hotel, Shanghai Trust and Investment Co., and Shanghai Patriotic Construction Corp.	Have formed La Belle de Chine to produce clothing from orders made by tourists. 8/8/83.
Mannesmann Demag (W. Germany)/Dalian Hoist Plant	33 bridge cranes for the Baoshan Iron and Steel Complex. 7/22/83.

Leasing

Glacier Metal Co. and AE International (UK)/ TECHIMPORT	Machinery. $1.5 million (£1 million). 7/26/83.
China Orient Leasing Co. Ltd. (PRC–Japan joint venture)/Liuzhou Printing and Dyeing Mill	Printing, dyeing, and cutting machines. $1.32 million. 9/12/83.
Tokyo Manki and Showa Leasing (Japan)/Qingdao No. 2 Confectionery, Qingdao Leasing Co., Qingdao First Light Industry Bureau	Instant noodle-making equipment. $214,000 (¥52.41 million). 9/26/83.
British Airways Helicopters/CAAC	Two used S-61 helicopters for offshore oil support. 9/30/83.

THE NATIONAL COUNCIL FOR US–CHINA TRADE

OFFICERS
Chairman: WALTER STERLING SURREY
Vice-Chairmen: DAVID C. SCOTT, WILLIAM C. DOUCE, CHARLES I. ROSTOV
Secretary-Treasurer: HARRY TAYLOR
Counsel: BENJAMIN P. FISHBURNE III
President: CHRISTOPHER H. PHILLIPS

BOARD OF DIRECTORS
WILLIAM R. ARTHUR, chairman, *Merrill Lynch International, Inc.*
SAM AYOUB, senior executive vice-president and chief financial officer, *The Coca-Cola Co.*
MURRY P. BERGER, president and chief executive officer, *MB International Consultants, Inc.*
WILLIAM H. BRICKER, chairman of the board, *Diamond Shamrock Corporation*
WILLARD C. BUTCHER, chairman and chief executive officer, *The Chase Manhattan Bank, N.A.*
WILLIAM C. DOUCE, chairman and chief executive officer, *Phillips Petroleum Co.*
MICHEL FRIBOURG, president and chief executive officer, *Continental Grain Co.*
PETER A. GEORGESCU, president, *Young & Rubicam International*
WILLIAM B. GRAHAM, chairman, *Baxter Travenol Laboratories, Inc.*
FRED L. HARTLEY, chairman and president, *Union Oil Co. of California*
HARRY HOLIDAY, JR., chairman and chief executive officer, *Armco, Inc.*
AMORY HOUGHTON, JR., chairman of the executive committee, *Corning Glass Works*
JOHN V. JAMES, chairman and chief executive officer, *Dresser Industries, Inc.*
WALTER B. KISSINGER, chairman, president, and chief executive officer, *The Allen Group, Inc.*
PHILLIP KNIGHT, president and chairman of the board, *Nike, Inc.*
M. JOSEPH LAPENSKY, chairman and chief executive officer, *Northwest Airlines, Inc.*
RALPH A. PFEIFFER, JR., chairman and chief executive officer, *IBM World Trade Americas/Far East Corporation*
CHARLES I. ROSTOV, president and chief executive officer, *Trans-Ocean Import Co., Inc.*
DAVID C. SCOTT, chairman and chief executive officer, *Allis Chalmers Corp.*
WALTER STERLING SURREY, senior partner, *Surrey & Morse*
HARRY TAYLOR, president, *Manufacturers Hanover Trust Co.*
DAVID TENDLER, chairman and chief executive officer, *Phibro-Salomon, Inc.*
HOWARD V. YERGIN, JR., chairman and chief executive officer, *Caltex Petroleum Corporation*

WASHINGTON STAFF
President: CHRISTOPHER H. PHILLIPS
Executive Vice-President: ROGER W. SULLIVAN
Administration: PATRICIA P. CAPERONES
Business Advisory Services: CAROLYN L. BREHM
China Business Review: JAMES B. STEPANEK
Comptroller: RICHARD L. PETERMAN
Development and Government Relations: SCOTT D. SELIGMAN
Liaison and Language Services: I-CHUAN CHEN
Librarian: MARIANNA GRAHAM
Publications: CAROL S. GOLDSMITH

Address
1050 17th Street, NW, Suite 350
Washington, DC 20036 USA
(202) 429–0340
Telex: 64517 NCUSCTUW
Cable: USCHINTRAD WSH

BEIJING OFFICE
Vice-President for China Operations: WILLIAM W. CLARKE
Deputy Beijing Representative: VINCENTE TANG
Advisor: LI WENDA
Assistant Advisor: CHENG LILI
Suite 1136, Beijing Hotel
Telephone: 552231, 556531, ext. 1136
Cable: USCHINTRAD
Telex: 22637 NCPEKCN

US GOVERNMENT OFFICES

EMBASSY
Ambassador: ARTHUR W. HUMMEL, JR.
Deputy Chief of Mission: CHARLES W. FREEMAN, JR.
Agricultural Counselor: NORMAN R. KALLEMEYN
Commercial Counselor: MELVIN W. SEARLS
Commercial Officers: CLARK T. RANDT, PETER HANLEY, NED QUISTORFF
Economic Counselor: ARTHUR KOBLER
Economic Officers: WILLIAM ABNETT, THOMAS MARTIN, EUGENE DORRIS, ANDRES ONATI, EVANS REVERE, DOUGLAS SPELMAN, ROSS QUAN
17 Guanghua Lu
Jianguomenwai, Beijing
Telephone: 52–2033

SHANGHAI CONSULATE
Consul General: THOMAS STANLEY BROOKS
Deputy Principal Officer/Economic Section Chief: KENT WIEDEMANN
Commercial Officer: GENEVIEVE DEAN
1469 Huai Hai Zhong Lu
Telephone: 379–880

GUANGZHOU CONSULATE
Consul General: WEAVER GIM
Deputy Principal Officer/Economic Section Chief: JAMES H. HALL
Commercial Officer: YING PRICE
Dongfang Hotel
Telephone: 69–900

HONG KONG CONSULATE
Consul General: BURTON LEVIN
Senior Commercial Officer: PAUL WALTERS
Commercial Officers: LYN EDINGER, WILLIAM DAWKINS, JR., HELEN PETERSON
Economic Section:
Chief: RICHARD MUELLER
Deputy Chief: MARSHALL ADAIR
Economic Officers: JOAN M. PLAISTED, GEORGE LEE
26 Garden Rd.
Telephone: 5–239011

PRC GOVERNMENT OFFICES IN THE US

EMBASSY
Ambassador: ZHANG WENJIN
Commercial Counselor: AN DONG
2300 Connecticut Avenue, N.W.
Washington, D.C. 20008
Telephone (202):
Reception: 328–2500
Commercial: 328–2520 thru 2527
Visas: 328–2517
Telex: 440038 PRC UI
Commercial: 440673 PRCC UI

HOUSTON CONSULATE GENERAL
Consul General: WU XIAODA
Commercial Consul: WU MINXIAN
3417 Montrose Blvd.
Houston, Texas 77006
Telephone numbers (713):
Commercial: 524–4064
Visas: 524–4311
Telex: 762173 CHINCONSUL HOU

NEW YORK CONSULATE GENERAL
Consul General: CAO GUISHENG
Deputy Consul General: JI LIDE
Commercial Consul: SONG GUIBAO
520 12th Avenue
New York, New York 10036
Telephone numbers (212):
Commercial: 564–1139 & 2541
Visas: 279–0885 & 1127
Telex: 429134 CGCNY

SAN FRANCISCO CONSULATE GENERAL
Consul General: TANG SHUBEI
Commercial Consul: GUO YIMIN
1450 Laguna Street
San Francisco, CA 94115
Telephone numbers (415):
Commercial: 563–4858
Visas: 563–4857
Telex: 340515 CHIMISSION SFO

TELEVISION COMMERCIALS ARE NOW BEING BROADCAST IN THE WORLD'S LARGEST MARKET...

WILL YOURS BE AMONG THEM?

The national television network of the People's Republic of China—CCTV—will begin weekly, primetime broadcasts of quality CBS Television Network programming in October of 1983.

By joining CBS on CCTV, ten international advertisers have the unique opportunity to reach the largest country in the world. Your company should be one of this select group. Consider the possibilities:

- —Reach key audiences, national trend setters, business and industry, government officials, consumers and prospective employees.
- —Associate your company's commercials with proven CBS network quality programming on an ongoing, long-term schedule.
- —Enjoy product-category exclusivity while building brand loyalty.
- —Take advantage of an attractive entry price.
- —Develop long-lasting relationships in China which will enhance your status as future commercial opportunities arise for you.
- —Travel to China to observe their television operation, monitor TV research and talk with key CCTV executives.

Remember that there is a market for industrial goods in China right now! With a billion people rapidly becoming more aware of new technologies, new products and a need to accelerate their production capacity, the opportunity to be one of a select group of television advertisers is not only excellent commercial diplomacy, but plain good business!

If you want to be the exclusive advertiser in your product category and pre-empt your competition, contact Charles Walsh at CBS Broadcast International. Phone 212-975-1858 or telex 662101CBINY.

CBS

CBS BROADCAST INTERNATIONAL