

The China Business Review

November–December 1989



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The China Business Review

The magazine of the US–China Business Council

November–December 1989

Volume 16, Number 6

Cover: China's government is determined to develop networks—but is the money there?
Photo by Richard Wiseman



Direct Foreign Investment in Jiangsu, 1988

CITY	NUMBER	AMOUNT (\$ million)
Nanjing	29	172.99
Suzhou	100	65.79
Wuxi	22	18.39
Nantong	21	9.10
Changzhou	26	7.86
Zhenjiang	12	5.80
Yangzhou	13	4.72
Xuzhou	8	4.00
Lianyungang	9	2.29
Yancheng	6	0.35
Huaiyin	1	
TOTAL	247	301.90

SOURCE: Jiangsu International Economics Research and Trade Institute

Jiangsu: Foreign investment has grown faster here than in any other province.

American schools in China: Children may find the educational environment more stimulating than at home.



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摘要

LIVING WITH MARTIAL LAW

The daily lives of expatriates in Beijing seldom intersect with those of Chinese residents, and so it may not be surprising that martial law has not meant drastic changes for the city's foreign residents. Though still subject to nighttime vehicle checks—albeit less and less frequently—by troops at the city's large intersections, foreigners report that their movements are no more restricted than before the imposition of martial law on May 20.

Indeed, life has become easier in some respects. Visitors can stroll through a quiet Forbidden City, row the lake at the Summer Palace, or picnic at the Ming Tombs without being shoved by the usual crowds and bullhorn-toting guides, while travelers report thin crowds at restaurants and discos in the city's large hotels.

Building managers have also lowered office rents, as the fall-off in visitors to Beijing coincided with the imminent opening of new properties. Office rents for recently opened or upcoming buildings in Beijing now average \$29-30 per square meter per month, down from the going rate of \$38-40 earlier this year at major facilities such as the CITIC building and Noble Tower. The World Trade Center has dropped office rental rates 15 percent. Discounts on housing prices vary, with buildings located outside the city center offering the best deals.

Occupancy rates at many hotels have dropped from 70-80 percent in the first half of 1989 to 10-50 percent, with Chinese hotels at the low end and the joint-venture Jianguo Hotel posting the highest occupancy rate. Many hotels also offer room discounts to lure dwindling numbers of customers.

Although few—if any—foreign companies have closed representative offices, many are reducing both expatriate and Chinese staff in anticipation of lean months ahead. The lay-offs have a bright side for companies looking to replace staff. Formerly, employers seeking Chinese

staff at the Foreign Enterprise Service Corp. (FESCO), which has a virtual monopoly on staff for foreign representative offices, had to take whoever was offered, and complaints were commonly heard that workers lacked skills and professionalism. There is now a larger pool of experienced personnel who have been discharged by foreign employers and are available for work.

Martial law is more troublesome to Chinese citizens, who must now carry identity cards and submit to checks by troops who are still seeking fugitive dissidents. Through September there were occasional rumors of attacks by Beijing residents on martial law troops.

For foreigners, however, the only change may be feeling a little less welcome. Showered with attention just months ago as ambassadors of economic progress, foreigners are now labeled corrupting influences. One particularly harsh editorial recently criticized Chinese who express too much interest in things foreign—especially capitalistic—with a new term: *Aizibing*—"loving capitalistic disease," a pun on the Chinese term for AIDS. —ASY, JF

IMPORTERS' UNCERTAINTIES

After June 4, many American importers of goods from China feared that renewed political pressures to control inflation might compound the austerity program's clampdown on export growth, making it more difficult to source goods from China. But as official Chinese rhetoric reassured importers that contracts would be honored, and that exporters stood ready and able to negotiate new deals, the flow of contracts continued with only a slight interruption. Importers breathed sighs of relief, hoping that without large capital risks exposed in China, they might be spared some of the worry and woes of foreign investors.

Now, however, some importers are finding that post-June contracts are not as sound as they seemed—though only time will reveal the

whole picture, substantial evidence points to a growing number of contract defaults by Chinese exporters. Even Chinese officials admit that contract nonfulfillment is an increasing problem. Based on statistics released by the Ministry of Foreign Economic Relations and Trade (MOFERT) at the end of September, foreign observers infer that the contract fulfillment rate for the twice-yearly Guangzhou trade fairs had fallen from 76 percent in 1987 to 49 percent in 1988, and an even more discouraging 40 percent for the first half of 1989.

Official efforts to bolster fulfillment levels dovetail with current plans to recentralize large measures of economic control and trading authority spun off to the provinces over the past two years. A MOFERT official in Beijing announced in September, for example, that all of the State import/export corporations would return to their former place under MOFERT's aegis; further measures along these lines are sure to come. —RB

KEEPING THE MASSES HOME

On a recent business trip to China, I toured the Forbidden City, Beijing's premier tourist site, which features a new attraction for foreigners—self-guided tours on cassette, narrated by actor Peter Ustinov. Throughout the tape, the listener is advised to "step to the side and let the crowds pass" while Ustinov explains the significance of various sites and objects—a caveat not necessary these days, as the crowds of mostly Chinese tourists that used to throng the Forbidden City are nowhere to be seen. Although the precipitous decline in foreign tourists to China—and the resulting drop in the State's hard currency revenues—has received extensive foreign press coverage, the concurrent decline in China's domestic tourism industry—which has been hit just as hard—has gone largely unnoticed.

Rapidly rising disposable incomes and decentralization of the tourism

industry in 1984 led to dramatic growth in the number of Chinese tourists traveling around the country. In 1987, for example, the National Tourism Administration (NTA) estimates that some 200 million Chinese traveled in China, dwarfing the 26.9 million foreign tourists (only 1.7 million of whom were non-Chinese) who visited China that year. These travelers pumped billions of yuan into the economy, and their growing numbers fostered development of service industries to cater to their needs, helping to spur private-sector growth. The NTA calculates that 550 travel agencies (State, collective, and private) served Chinese travelers in 1987. By 1988, the number mushroomed to 718, and new hotels, restaurants, transport services, and souvenir shops sprang up in major tourist areas.

Chinese authorities tried to slow domestic tourism growth somewhat in 1988, raising Chinese prices on many CAAC routes by 56 percent in July, and in November halting the sale of domestic group rail tickets to Chinese travel agencies. These measures resulted only in a thriving black market, and did not appreciably slow domestic tourism growth.

In the past few months, however, new restrictions on mobility and substantial hikes in domestic transport prices for Chinese are succeeding where earlier measures failed. In September, the State Council increased train fares by 60 percent for short distances and 120 percent for journeys over 100 km. Passenger ship fares increased 96 percent, and domestic airfares are up a further 77 percent. NTA is also currently conducting a "rectification campaign" to identify—and presumably close down—travel agencies accused of undercutting State prices or evading income tax. Private companies will probably be prime targets.

Unlike the organizations that cater to foreign tourists, the domestic industry will not receive State or foreign promotional support to help rebuild the market. Which means that for most Chinese citizens the "Forbidden City" will once again become just that. —PB

LESSONS IN POLITICS

After spending four years of late nights and weekends poring over textbooks, the cream of China's 1989 high school class set off this fall to

enroll in Beijing University, where their first classes turned out to be far from academic. The students' freshman year began with military boot camp in Beijing's rural suburbs, where they are being drilled in the virtues of obedience and the wisdom of the Communist Party. This year's high school students are also being treated to a crash course in gratitude by officials who believe students have come to take their education for granted. Many students will reportedly be required this year to work several hours each week in factories.

The government is not only trying to reduce the volatility of the current student body, but to trim its ranks as well. Nationwide, incoming college enrollment has been cut by 30,000 since last year, to a total of 610,000. At Beijing University, fall enrollment was cut from 2,000 last year to 800, with one-quarter of the entering students consisting of middle-aged professionals on leave from government organizations. No new students have been accepted into the four departments considered the hotbeds of radical politics: history, philosophy, international relations, and public administration.

China's students are no strangers to force-fed indoctrination. After the May-June protests, students throughout Beijing were compelled to attend long "political study" sessions and write essays disclaiming any sympathy for the movement in order to graduate. The motives for the new measures are the same as before: to punish students for participating in protests, inculcate the values of the Communist Party, and control the students' movements and associations. Officials also want to reduce the influence of the Western democracies on students' thinking.

Mindful of the respect traditionally accorded students in Chinese culture, Communist Party Secretary Jiang Zemin made a bow to their discontent in August by agreeing to meet with a group at Qinghua University. But unlike the astonishing debate televised in early summer, in which student leader Wuerkaixi challenged Premier Li Peng, Jiang met with a hand-picked, quiescent group of 80. He reportedly admonished them to stay away from politics and attend to their studies—though with all their new extracurricular activities, one wonders where they'll find the time. —ASY

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The China Business Review is published bimonthly by the China Business Forum, a nonprofit organization incorporated under the laws of Delaware. Second class postage paid at Washington, DC, and additional mailing offices. Postmaster, please send address changes to *The China Business Review*, 1818 N Street, NW, Suite 500, Washington, DC 20036, USA. Articles in *The CBR* do not reflect Forum policy, unless indicated. *The CBR* is grateful to I-Chuan Chen for the calligraphy used for the magazine's departments.

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COMMENTARY

评论

Roger W. Sullivan

The following speech was delivered in Beijing on October 2, 1989 at the celebration of the 10th anniversary of China International Trust and Investment Corp.

It is a great pleasure to be here to celebrate the 10th anniversary of the China International Trust and Investment Corp. (CITIC). I particularly want to extend my good wishes and congratulations to Chairman Rong Yiren. He deserves the gratitude of all of us as well as that of his own government for the work he has done over the past 10 years to facilitate foreign investment and strengthen the Chinese economy.

A decade of cooperative progress

Nineteen seventy-nine was a momentous year for US-China economic relations. It was the first year of *kaifang*, China's policy of opening to the outside. Our two countries established diplomatic relations, signed a trade agreement, extended Most Favored Nation treatment to one another, and began the often slow and painful process of removing obstacles to economic interchange. China passed a joint-venture law, making foreign investment possible, and the United States took the first significant steps toward relaxing controls over the transfer of technology to China.

But these early changes represented more promise than reality. Exchanges of high-level visits, announcements of new policies, and pledges of cooperation, while welcome signs of possible improvement in the business environment, do not of themselves automatically produce new investment or higher levels of trade. The substance of economic cooperation comes from changes in attitudes toward international economic cooperation, a greater appreciation of the potential benefits of interdependence, and, perhaps most important of all, a better understanding of the costs of a kind of self-

reliance which in reality amounts to cutting oneself off from the rest of the world and the competition so essential to promoting economic efficiency.

Only when attitudes change is it possible for governments to overcome inertia and bureaucratic resistance to pass new laws and regulations—such as China's 1983 implementing regulations on foreign investment or America's dramatic move in the same year to classify China as a friendly nation under the export licensing system—and to set up the bureaucratic structures, such as CITIC or the State Council Leading Group for Foreign Investment, which can effectively translate policy pronouncements into practical results.

Stronger, diversified trade

From 1972-79 US-China trade was limited largely to agricultural and commodity sales by the United States and exports of handicrafts and raw materials by China. In those years China's trade with the United States was in substantial deficit. This pattern of a low volume of trade heavily concentrated in raw materials and commodities is typical of an economically closed society—and this is what China was at that time. A good measure of the relative openness of a country's economy is how its trade ratios compare to other countries of comparable size. A "trade ratio" is the ratio of exports over gross domestic product (GDP). A high number means trade is important to the economy and that the economy is an open one. Large countries tend to have lower trade ratios than do small ones, but within groups of large or small countries, the trade ratios are remarkably similar regardless of culture or level of economic development.

The United States, India, and Brazil have trade ratios that fall in the

Roger W. Sullivan is president of the US-China Business Council.

10-12 range. China, in 1979, had a very low trade ratio in the 5-6 range. But as *kaifang* was translated into reality, the ratio began to climb sharply. In 1983, when trade and other reforms started to take effect, China's trade not only with the United States but with the world at large grew impressively, and its trade ratio jumped to 8. It continued to climb in successive years, reaching 13 by 1988—a high but probably unsustainable level, since China, while significantly more open than in 1979, remained considerably less so than most other economically successful countries. Not only was China's trade growing, it was becoming more diversified, less dependent on commodities and therefore less volatile. US-China trade mirrored China's worldwide success, tripling from 1983 to 1988 to a two-way total of over \$13 billion.

Investment accelerates

Investment has been a comparable success. Despite very real problems and frustrations, foreign investment—responding to the reforming environment—followed a similar pattern to the changes in trade, increasing in amount and changing in composition. But investment, like trade, also responds to the real environment, not to rhetoric or policy statements. This is why the promulgation of the Joint Venture Law in 1979, while attracting attention, did not by itself bring about much foreign investment. It took the 1983 Joint Venture Implementing Regulations to convince foreign investors that China was serious about creating an attractive investment environment—and after that, investment began to take off. But these first foreign investors saw opportunities almost exclusively in hotels and extractive industries. The amounts invested were impressive, but these projects largely served other foreigners. Reform had not progressed enough to allow foreign investment to be integrated into the Chinese

economy. This period of investment is thus known as "Phase I."

The next stage of reform, which was heralded by the announcement in 1986 of the so-called "22 Articles on Foreign Investment" and their subsequent implementing regulations, opened up to foreign investors the possibility of investing profitably in production for China's domestic economy. Over the past three years, investment by Americans—the largest foreign investor group in China—shifted dramatically from tourism and extractive industries to manufacturing. In 1987-88 US investment in manufacturing joint ventures continued to accelerate: In 1988 the number of new US investment contracts doubled to a total of close to 600 with a commitment value of almost \$3.5 billion. That pace continued in 1989, and other nations followed similar patterns. Total new foreign investment commitments in 1988 approached \$5 billion, and earlier this year it was estimated that the figure for 1989 might exceed \$8 billion.

Open attitudes boost economy

The reasons for the boom were not just the reform of the investment regime but the improvement in the overall environment and in changing attitudes in China on how to foster economic development. Increasingly, Chinese officials reflected the view that sound economic policies will likely produce the same positive results, whether in China or Korea, Thailand, Japan, the United States or Eastern Europe, and that such policies should therefore not be stigmatized as "foreign," "Western," or "bourgeois." Conversely, they seemed to recognize that wrong economic policies will produce disastrous results anywhere and anytime, regardless of geography, culture, or ideology.

Because policy change was being accompanied by these attitudinal changes in China, companies began to see encouraging improvement in the business environment. The seemingly perennial problems in foreign exchange availability, labor management, local sourcing of high-quality components and material, and bureaucratic interference in the operation of the enterprises noticeably improved and in some cases were even solved altogether.

Companies also saw that economic

reform was increasing productivity and reducing costs in all sectors of the Chinese economy, including foreign joint ventures and wholly owned enterprises. Joint ventures, which had delayed expansion because their products produced in China were not sufficiently competitive in world markets to allow them to balance foreign exchange through exports, began to reconsider. Some even predicted that foreign investment in China was about to move into Phase III investment, producing not just for other foreigners in China (Phase I) or for the Chinese domestic market (Phase II) but for both the domestic and the international markets. By the beginning of 1989, American and other foreign companies were no longer wondering whether they should do business with China—but rather, were asking where, how, and to what extent they should be active in the China market.

Profits—not politics—decide

These are not the questions foreign companies are asking themselves today. They are deeply troubled, and we need to address this frankly and openly. In troubled times it is vital to keep open lines of communication, maintain a long-term perspective, and earnestly address problems that arise. Relations have been damaged; there is no doubt about that. The questions are for how long, and what can be done to get back on the track we were on in May.

Let me emphasize here a few general points. American business leaders do not make business decisions on the basis of politics, moral outrage, or ideology, but on a pragmatic calculation of risk and reward. This does not mean that companies will do business with a country regardless of its policies or actions. On the contrary, if companies perceive that risk in a particular country has increased and the potential for reward has declined, their more negative view of that country will tend to persist long after the moral outrage of legislators and journalists has faded. At the same time, American business executives have no interest or desire to interfere in the domestic affairs of China or to tell the Chinese government how to run the country.

Premier Li Peng, in a September 1 interview with a *Le Figaro* correspondent, put it accurately and succinctly

when he said that to ascertain whether foreign businesspeople are going to continue to work with China or not, one has to consider whether the regime is stable and whether China's policy has changed. "If those two basic conditions are met, the businessmen and capitalists will return. They are interested in profits, not ideology at all."

Those are indeed the questions. Foreign businesses will make decisions based on their assessment of China's business environment. In May that assessment was positive: China was perceived as stable—not because there was an absence of dissent and unrest (other countries with little foreign trade and no foreign investment can boast of that kind of stability)—but because society, both government and people, seemed to share a commitment to a continuing process of reform and liberalization. Foreign companies reacted favorably, not only because of the improvements in the business climate which they witnessed in 1986-88, but also because of the further improvements they were confident would be made in 1989, 1990, and beyond.

Foreign confidence wanes

Foreign companies are less confident now. They welcome Chinese government statements assuring the world that China's policies of reform and the opening to the outside have not changed, but at the same time they wonder about the frequent references in Chinese government statements and commentaries to foreign plots and subversion, and the official rhetoric that seems to view everything foreign with suspicion.

But even if this mixed rhetoric does not mean an impending change of policy, foreign business executives realize that the mere preservation of existing policies is not enough. They recall that while the current policies of reform and opening to the outside have been in existence since 1978, significant improvement in the environment has been evident only in the last few years.

There are two important reasons for this improved business climate. First, there was follow-through by the Chinese government. The enunciation of policies was followed by a flood of new laws, regulations, and bureaucratic structures that translated rhetoric into reality.

Second, reform and the opening to the outside were seen not as one-time events but as a continuing process. It seemed that each passing month brought some new improvement. Foreign companies gained confidence about projecting this trend into the future.

Foreigners regarded these developments as credible evidence of a commitment by a united Chinese leadership to a more open economy in which rational economic decisions could be made with increasingly predictable results. Foreign businesses do not need, expect, or hope to encourage capitalism in China. They flourish, and believe Chinese enterprises do as well, when they are responding to market forces rather than to less predictable and sometimes arbitrary bureaucratic decision-making. But they fully realize that market forces, in a socialist economy, will remain a bird in a cage. They hope only that the bird will neither starve to death nor perish for lack of fresh air and exercise.

Do these comments reflect a peculiarly American point of view? I do not believe so. If businesspeople are non-ideological and non-political and make decisions on a pragmatic business basis—and I believe this is the case—then similar companies

when faced with the same business environment will tend to make decisions in more or less the same way whether they are Americans, Japanese, or Europeans. Recently, for example, a company executive told me that they did not intend to proceed with a planned project in China because of perceived changes in the business climate. When I asked if the company was concerned that the project might be picked up by a third-country competitor, the executive laughed and said, "We're not going ahead because the project would not make money. I doubt that our competitors want to lose money any more than we do."

Companies need convincing

And so we are back to the basic questions: Is the business climate in China such that foreign companies can make money? Does investment still make sense? If so, in what industries and for which markets? Will sources of supply and quality control be reliable? Will productivity continue to increase or will it slip? Will the bureaucracy help or obstruct the operation of enterprises?

It may be a while before companies complete their reassessments, but I am confident of two conclusions. First, that as the history of this recent

period has shown, reform and commerce reinforce one another. Reform has increased trade and investment and just as clearly, increasing trade and investment have encouraged further reform. The liberalization, over the past 10 years, of American controls on technology sales to China is a clear illustration of this dynamic. I am sure Chinese officials could cite comparable examples on their side.

If companies become convinced that China is continuing on the track of economic reform, modernization, and openness, foreign business will want to be here. But if they conclude that the environment has fundamentally changed, companies will be reluctant to risk capital—for a wise man does not fight against impossible odds. Second, the fundamental strengths of the Chinese economy remain unchanged. The question is only whether China's attitudes and recent policy direction will continue. The answer to that will be clear only after foreign companies have observed consistency of policy and behavior over time. Once foreign confidence is regained, the prospects for continued growth in the economy and in China's mutually beneficial commercial relations with the outside world should be bright indeed.

Puzzled by China's new business environment ? . . .



Import restrictions, an anti-corruption campaign, and tax investigations all reflect China's drive to recentralize and regulate foreign trade. Recent announcements that up to 40% of China's existing foreign trade corporations may be denied trading privileges highlight the importance of China's central and provincial trading entities, all carefully covered in *A Guide to China's Trade and Investment Organizations*.

Seventy entries detail organizational background, contact names and addresses, including telex and fax numbers, along with concise analyses of these bureaucracies' interactions.

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Jiangsu's New Wave in Foreign Investment

After a slow start, cheap labor and bureaucratic reform lure investors

Richard Pomfret

Far from the political upheavals in Beijing, Jiangsu Province has seen extremely rapid growth in foreign investment since 1986 and will probably continue to outperform most other provinces in attracting foreign funds. Generous investment incentives, low wage rates, and other favorable circumstances in Jiangsu explain the trend: Jiangsu offers lower wages than Guangdong, proximity to Shanghai, a relatively well-trained labor force used to factory conditions, an outward-oriented provincial administration, a strong industrial base, and the best internal transport network in China, as well as major ports.

Before 1986, when a set of investment incentives was implemented, Jiangsu had few approved foreign-invested ventures and little pledged foreign capital. With the implementation of the incentives, however, pledged direct foreign investment grew at a 200 percent annual rate in 1986-88, from \$48 million (including investment in cooperative ventures) to \$302 million, outstripping even Guangdong's annual foreign investment growth rate (see table).

The 1987-89 boom in Jiangsu's direct foreign investment formed part of a national trend, but Jiangsu's growth in both numbers of approved joint ventures (JVs) and pledged foreign investment was faster than the national rate. Pledged direct foreign investment in JVs nationwide increased from \$1.375 billion to \$3.1 billion in 1986-88, or just over 60 percent annually.

The pace of JV approvals in Jiangsu accelerated during the first four months of 1989, although political events in May and June cut short the trend. Foreign companies evacuated their expatriate workers on June 3-4, although many expats returned

A JIANGSU PROFILE

A population of 63 million puts Jiangsu behind Sichuan and Henan as China's third most populous province, but the gross provincial product—10 percent of the national total—and industrial output—12 percent of the national total—are second to none. Wuxi and Suzhou rank fourth and fifth among China's cities in industrial production, and Changzhou, Nanjing, Nantong, Lianyungang, and Xuzhou also rank as important industrial centers.

The province has significant regional inequalities. Three-fifths of the population lives north of the Yangtze River, but this area produces less than one-third of total output, and its economy is more agricultural. The agricultural areas in southern Jiangsu contain the richest rural counties in China.

Jiangsu's exports have grown from \$0.4 billion in 1978 to \$2.3 billion in 1988, ranking fifth among China's provinces and accounting for 6 percent of China's total exports. Thus, the Jiangsu economy has opened significantly during the 1980s, but is not as export-oriented as those of Guangdong, Liaoning, or Shanghai. Jiangsu's exports are primarily industrial products, with some diversification during the 1980s out of textiles and clothing and into other manufactured goods.

Richard Pomfret is professor of international economics at the Johns Hopkins University School of Advanced International Studies and spent the 1988-89 academic year at the Hopkins Nanjing Center. This article includes research to be published in November by Longman (Hong Kong) as the book Equity Joint Ventures in Jiangsu Province.

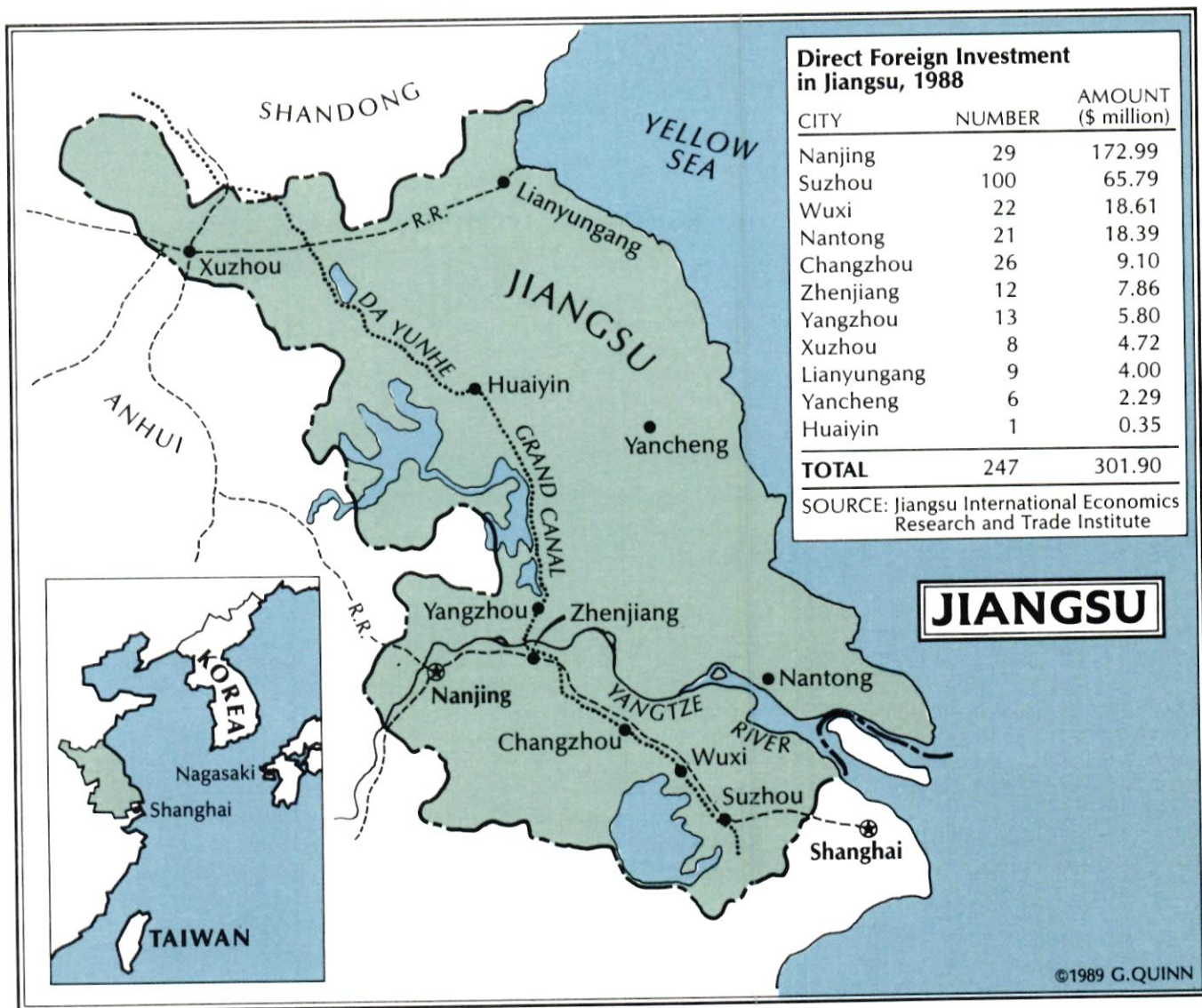
only weeks later. Large, already approved JVs are going ahead, even when—as with Amoco Chemicals—the project has completed only the feasibility study. For small JVs, business continued with little disruption in June.

Thus, existing JVs seem likely to carry on, and the boom in direct foreign investment will continue with the momentum built up by approved but not yet operational JVs. The big question mark concerns what will happen to new approvals, as potential investors balance recent economic success against the new political uncertainty. Nevertheless, Jiangsu's outward-looking administration and other advantages should continue to put the province ahead of all but Guangdong and Fujian in attracting foreign investors.

Off to a slow start

Before 1984 foreign investment had minimal impact on Jiangsu's economy. A single pharmaceuticals JV (which did not begin operations until 1987) accounted for Jiangsu's large 20 percent share of the \$29 million national total for pledged foreign investment in 1982. Actual foreign investment remained modest up to 1986, and joint ventures contributed less than 1 percent to the province's exports, though increasing export potential was one of the State's primary goals in promoting direct foreign investment.

China's first direct foreign investment boom in 1984 and the first half of 1985 passed Jiangsu by. This was not because the provincial economy was insulated from China's economic reforms; foreign trade grew rapidly and agricultural reform progressed quickly in southern Jiangsu throughout the 1980s. Before 1986 foreign investment in China (apart from hotels and other tourism-related JVs)



mainly took two forms: small export-oriented JVs were concentrated in Guangdong, often with Hong Kong partners familiar with the language and local conditions and with marketing labor-intensive exports, while more capital-intensive JVs involving existing Chinese factories were concentrated in Beijing, Shanghai, and Tianjin. Jiangsu, with its light-industrial base, attracted a few of both types of JV but offered no particular incentive for either.

Up until 1986 JVs in Jiangsu were located mainly in Nantong and Lianyungang, which had both been designated open coastal cities in April 1984, and the established industrial heartland of southwest Jiangsu, which encompasses the cities of Wuxi, Suzhou, and Changzhou (see map). These early JVs included a number of profitable small service businesses whose JV status allowed them to import machinery and automobiles unobtainable in China and

thus create local monopolies. These businesses included taxi companies, drycleaners, and restaurants, and two larger tourism projects (both in Nantong, approved in 1985). The manufacturing JVs were in practice oriented towards the domestic market even if there was a promise of future exports; the first approved JV was an import-substitution plywood project, and the largest ones approved before 1986 were a brewery (\$6.5 million foreign investment) and two pharmaceutical ventures (\$6 and \$9 million foreign investment). The aim of attracting export-oriented JVs had scarcely been achieved; in 1985 one JV exported \$5 million worth of work shoes and another exported \$0.6-0.8 million worth of gloves, while exports from the remaining JVs were negligible.

Relaxing the rules

The provincial investment incentives announced in November 1986

provided the spark for growth of direct foreign investment in Jiangsu by going beyond the national incentives introduced after October 1986 (known as the "22 Articles on Foreign Investment"), which provided tax breaks, capped fees levied on JVs, and offered other investment inducements. The local tax exemptions and land-use fees regulations appear to be more generous in Jiangsu than in any other province. Perhaps more important in attracting direct foreign investment, the approval process was decentralized and simplified, allowing, for example, local approval of JVs with up to \$3 million in investment. Special privileges went to export-oriented JVs, and the approval process was smoothed and speeded. One Hong Kong investor completed the whole process of approving his clothing JV within one hour in March 1989, even faster than the company could have been registered in Hong Kong. After approval,

a JV would be left to itself, with success depending upon being able to earn a foreign exchange surplus from which profits could be repatriated by the foreign partner. As a result of these incentives, in 1987 the pace of JV approvals picked up, and in 1988 it accelerated further, a trend that continued in the first five months of 1989.

The small, export-oriented JVs approved after 1986 initially concentrated in the established industrial centers along the lower Yangtze River (*see* table), where each city except Nanjing averaged less than \$1 million per JV in pledged foreign capital. In Nanjing, for example, at least 29 of 46 JVs approved between January 1987 and the end of March 1989 are small and export-oriented, with registered capital varying from \$100,000 in a woodcarving JV to \$1.5 million in a jewelry JV, and \$1.6 million in a knitting JV; the foreign share is typically 50 percent. Of the 29, 19 had Hong Kong partners, although some may hide some Taiwan links (only one of the JVs has an acknowledged Taiwan partner). There are four US and one Canadian partners, of whom at least three are overseas Chinese, two Italian partners (both in shoe JVs), a Japanese-partnered clothing JV, and a French-partnered cosmetics JV. Most of these JVs became operational within 12-18 months of approval, and the

time lag has been shortening. Though many experience problems with material inputs, energy supply, quality control, or incompetent (or dishonest) partners, some of the JVs established in 1988 were realizing high returns a year later and expected to pay back the initial investment within 2-4 years. The range of goods produced is wide—candy wrappers, sports shirts, latex gloves, plastic floor tiles, toys, electric hotplates, leather goods, chopsticks, and arts and crafts, to name a few—and the foreign partner's knowledge of a specific export market niche often provided the key to success.

Seeking low labor costs

Most of the JVs in Jiangsu are the small, export-oriented type that have flourished in Guangdong and are now being moved into locations with lower wages. In the mid-1980s increasing wage rates in the Shenzhen Special Economic Zone (SEZ) and elsewhere in the Pearl River Delta were reducing the attractiveness of these locations for export-oriented foreign investments. Jiangsu offered lower labor costs; by the end of 1985, wage costs were approximately three times higher in Shenzhen than in Nantong, while average productivity was only 50 percent higher; in Guangzhou wages were over 60 percent higher than in Nantong, and productivity was lower.

Most of the over 300 JVs approved in Jiangsu since November 1986 are based on the export of labor-intensive manufactured goods and involve \$0.5-1 million in foreign capital. The foreign partner brings export marketing expertise to the venture, and a majority of foreign partners are Hong Kong-based, though these ventures also include other Overseas Chinese investors and North American, European, Japanese, ASEAN, and Australian partners.

The early JVs making work shoes and gloves paved the way for these relatively small manufacturers, with Nantong Rikio's work shoes JV—the second JV approved in Jiangsu—beginning operations in 1983 with \$528,000 capital from the Japanese partner. The Kunsheng Sworn glove JV in Suzhou began operations in 1985, also with a Japanese partner, with \$780,000 in foreign capital. Other early examples were Nanjing Skipper Marine Electronics, which began in 1980 as a contractual agreement and then converted to a JV in 1985, with the Norwegian partner pledging \$210,000, and Suzhou International Spectacles Co., which opened in 1986 with the Italian partner investing \$210,000. All these businesses exported their products successfully and appear to have been profitable for the foreign investor. Skipper's Chinese managers reported that the original investment was paid back in four years. San Ford Fashion, a Nanjing clothing JV which started in 1986, did even better, repaying the original investment in less than two years, despite problems with quality control.

Geographical dispersion has continued within Jiangsu, as the most labor-intensive activities head to rural counties in the south or to the more backward northern part of the province. The first of these northern companies, Huai Hai Leather in Xuzhou, involved a US company seeking to relocate its activities from Taiwan, where rising wages were reducing the competitiveness of its leather goods. The JV was helped by Xuzhou's situation on the main railroad line and its tradition as a leather industry center, and after initial difficulties meeting international quality standards, leather briefcases and snakeskin purses were being exported via the foreign partner's Hong Kong office (25,000 briefcases were shipped from

EQUITY JOINT VENTURES IN JIANGSU

	Number approved	Percent of national total	Pledged foreign investment (\$ millions)	Percent of national total	Number becoming operational	Actual foreign investment (\$ millions)
1979	0		0		0	0
1980	0		0		0	0
1981	2	7.9	2	6.1	0	0
1982	1	3.4	6	20.7	0	0
1983	1	0.9	0.15	0.1	2	2
1984	20	2.7	17	1.6	5	8
1985	33	2.5	33	1.6	11	11
1986	38	4.3	37	2.7	30	17
1987	71	5.1	67	3.5	N/A	40
1988	247*	6	302*	10	N/A†	N/A

* 1988 figures include cooperative ventures but these appear to have been few and small
 † By year-end 1988, over 175 JVs were operational

SOURCES: *Almanac of China's Foreign Economic Relations and Trade, Jiangsu Economics Yearbook*; unpublished data from Jiangsu Province Commission for Foreign Economic Relations and Trade

JIANGSU PROJECT PROFILE: HOECHST CELANESE IN NANTONG

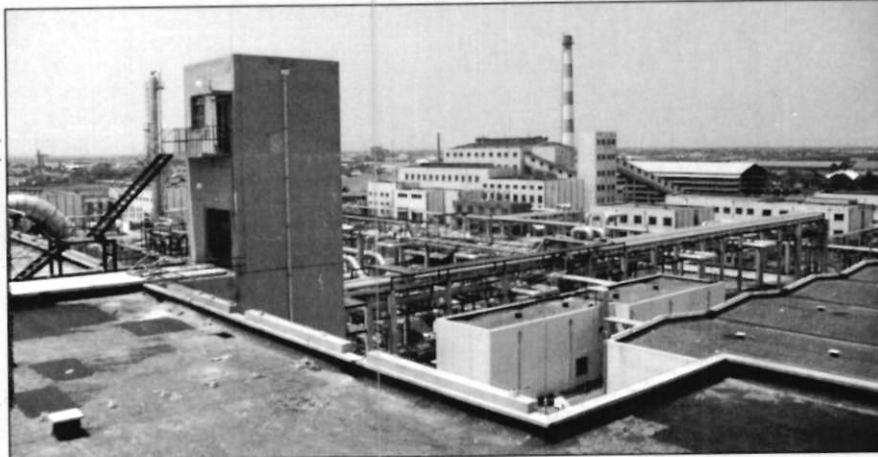
Unexpected costs and miscalculated export potential dragged many of Jiangsu's early, export-oriented joint ventures into debt. Companies could not find high-quality inputs, had little control over erratic energy supply and quality control, and found Chinese partners often lacking in marketing expertise. Thus, when Hoechst Celanese began to consider a manufacturing operation in China, the company shied away from export operations and framed a deal that was virtually immune to unpleasant surprises.

The company formed a joint venture with a bureaucratically powerful partner, the Jiangsu branch of the China National Tobacco Corp. (CNTC). CNTC holds a national monopoly over the tobacco industry and will use all the joint venture's annual production of cellulose acetate tow. CNTC will also provide enough foreign exchange to offset expatriate salaries and costs of imported materials. Even with all these advantages, however, the Nantong venture experienced its share of problems before construction was completed in summer 1989.

With the contract signed in 1987, the Nantong Cellulose Fibres Co. Ltd. brought Celanese, a US chemicals company acquired by the German firm Hoechst AG in 1987, together with CNTC to make cellulose acetate tow for cigarette filters. China, which has an estimated 200 million smokers and represents a growing market for cigarette sales, imports all its acetate tow, since it produces none of the cellulose fibres that are essential for cigarette filters. Concerned about the health risks smoking presents but loathe to part with the tremendous tax revenue the tobacco industry produces, China has settled on the tactic of adding filters to more of its cigarettes. Thus, while in 1984 only 5 percent of China's cigarettes were filtered, now 30 percent have filters, and China is aiming at a 50-60 percent filtration rate in the near future. The Nantong joint venture therefore represented an important import substitute, saleable in foreign exchange.

The Chinese side chose the Nantong site partly for proximity to three major endusers, in Nantong,

Photo courtesy of Hoechst-Celanese



The Nantong facility now employs about 450 people and is poised for expansion to double capacity.

Shanghai, and Nanjing, says Richard Stofan, vice president and general manager of Hoechst Celanese Filter Products Division. Though Hoechst Celanese had no say in the site selection, the company was pleased with Nantong, which had been singled out for accelerated economic reform as one of China's 14 open coastal cities. Nantong also boasts a moderate climate and decent transport routes over the Yangtze River and on a relatively well-developed network of roads. The city is also building its own deepwater port facilities.

Start-up

Construction of the Nantong facility, capitalized at \$26.4 million with Hoechst Celanese contributing 30 percent, was contracted to a Chinese engineering firm and presented "problems in communication," says Stofan. "Everybody had to learn. We didn't know the Chinese systems, and the Chinese didn't know the American systems. It's tough to build a plant when your contractor does not routinely update construction schedules and completion forecasts." Supply of high-quality parts for construction posed persistent difficulties, which Hoechst Celanese could solve only by importing certain pumps, valves, and other items unavailable in China. Energy supply was frequently insufficient, so the plant needed its own electrical co-generation capability, and Hoechst Celanese also had to work hard to find Chinese engineers, as Nantong's employment rate is extremely high. Hoechst Celanese eventually brought two groups of trainees, totaling 31 people, to the

company's Narrows plant for a training program that met with conspicuous success, according to Stofan. "We would love to have any one of those Chinese trainees come to work permanently in Virginia."

Finding American staff willing to work in the Nantong plant was not easy, since Nantong has no Western community and few of the amenities of North American life. However, Hoechst Celanese relied on a group of employees, including some who had grown accustomed to expatriate life through postings to plants in other countries, to fill the four full-time expatriate positions at the Nantong plant, along with four project engineers who were in China during the period of plant construction. Life away from home is eased by annual home leave, three rest and recreation periods per year, and additional hardship pay.

Expansion plans

With production only recently underway, the joint venture, employing about 450 people, is already considering additions to capacity, in order to incorporate upstream cellulose acetate production. Such additions would demand greater economies of scale, requiring the venture to boost annual production by as much as 100 percent, to 20,000 tpy. Though the company is concerned about China's political stability, the joint venture operates far from the urban centers most affected by dissent. At a time when other foreign-invested companies suffer from poor cash flow, and many are retrenching, expansion talks signal bright prospects for this joint venture. —ASY

Xuzhou in 1988, although about 4,000 of them were rejected for quality reasons). More JVs were established in Xuzhou, Yancheng, and Huaiyin in 1987-89 in activities requiring unskilled labor (especially textiles and clothing and electronics). One \$13 million JV, approved in 1989 but not yet operational, hopes to utilize the land in northeast Jiangsu for cattle ranching, exporting beef to Japan and Hong Kong, but all the rest are small-scale manufacturing JVs taking advantage of the low wage rates in the region.

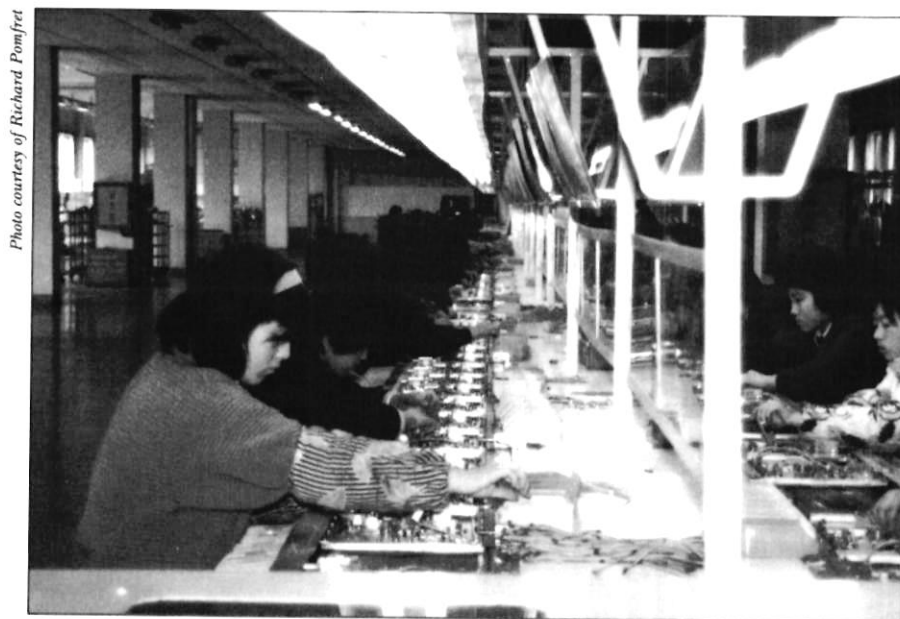
Building on township enterprises

Although most foreign-invested projects were concentrated in southern Jiangsu, by 1988 many of the small JVs being approved were in the rural counties surrounding the cities rather than in the manufacturing centers themselves. In these rural areas, many of Jiangsu's township enterprises, numerous and fairly prosperous because of the province's agricultural wealth, became partners to joint ventures. These township enterprises might involve as the Chinese partner the local authority or a rural factory, or even a single individual. The phenomenon was most pronounced in the Suzhou and Wuxi regions, rich agricultural areas where disposable income has increased rapidly since the agricultural reforms began in the late 1970s.

Zhangjiagang County (Suzhou) dramatically illustrates Jiangsu's success in building business on earnings from agriculture and the subsequent boom in township enterprises. The first JV in Zhangjiagang was approved only in 1988, but by June 1989 the county had approved 45 JVs, of which 14 were operational. The average pledged foreign investment is just under \$1 million, and in the operational JVs totals less than \$0.5 million. Some 35 of the approved JVs have Hong Kong partners, while other partners are from the United States, the United Kingdom, Italy, Macao, and Singapore. The operational JVs make clothing, plastic goods, cigarette lighters, dog chains, travel necessity kits, and other light industrial products.

The good earth

Jiangsu has attracted the JVs not only with lower wages and a relatively sophisticated bureaucracy but also with more general benefits. Southern



Increasing wage rates in Guangdong are attracting more labor-intensive manufacturing ventures, like this TV circuit board assembly plant, to lower-cost Jiangsu.

Jiangsu's farmland is China's richest and most productive, yielding a surplus that enabled Jiangsu to establish a manufacturing base—particularly in Wuxi and Suzhou, which are China's fourth- and fifth-largest industrial cities after Shanghai, Beijing, and Tianjin. Southern Jiangsu also benefits from proximity to Shanghai in transport and other support services and has a relatively well-trained workforce and good infrastructure, including good financial services and communications. Transportation is well-developed, with the Yangtze River serving all the major industrial centers, and the Beijing-Shanghai and Lianyungang-Urumqi railroads cutting through the province north-south and east-west. The province also benefitted from the late 1980s upsurge in direct foreign investment from Taiwan and South Korea: Lianyungang attracted attention from South Korean investors because of its proximity, and many Taiwan residents still retain links to Nanjing, Jiangsu's provincial capital and the Kuomintang capital before the 1949 Communist takeover.

Attracting big JVs

Along with the post-1986 wave of export-oriented ventures came larger projects oriented toward the domestic market. These JVs do not export much, but they meet the second goal of China's foreign investment policy by transferring technology to Chinese factories, and they

dominate the value of direct foreign investment for Jiangsu: The Suntory brewery and the Sino-Swedish and Warner-Lambert pharmaceuticals JVs, for example, accounted for almost one-third of the \$78 million actual direct foreign investment up to the end of 1987. The relatively few hotel and tourism projects in Jiangsu—such as the Nantong Hotel and Sun Hai Tong JVs (both approved in 1985 with \$14 million pledged foreign investment between them) and the Wuxi Grand Hotel—also account for a large share of actual foreign investment. In 1988-89 five more large projects were approved, all oriented toward the domestic market: the Philips electrical and Dongfang chemicals JVs in Nanjing, each capitalized at almost \$200 million, and the Hoechst Celanese venture (see box) in Nantong, Schindler Suzhou Elevators, and the Amoco Chemicals JV in Yangzhou, capitalized at \$35, \$20, and \$17 million respectively. These larger JVs are more likely to have non-Hong Kong partners; US firms have been particularly active, although the largest foreign investor is a Dutch company (the other very large JV has Hong Kong-registered, but China-backed, partners).

Jiangsu's handful of large JVs suffered at the outset from the inexperience of local officials. As a result, the pre-1986 JVs experienced severe problems and none has reached planned capacity output. Medium-size JVs (those that are

capitalized at \$3-6 million) approved before 1986 suffered from the same problems that beset the early big JVs, most stemming from poor project selection or an ill-advised choice of partners. Miscalculation of costs and of export potential handicapped the two largest early JVs in Nanjing, Pearl Mineral Water and Suwei Artificial Leather, and neither has managed to export its product, so that Pearl is operating at well below capacity and Suwei is saddled with a foreign-exchange debt that earnings will never offset. Both are highly capital-intensive projects (approved capital is \$25-45,000 per worker, compared to less than \$10,000 at successful Nanjing JVs, such as San Ford Fashion or Goulds Pumps), in which China would not be expected to have a comparative advantage over other countries, and in neither case did the foreign partner have export-marketing expertise. The foreign partners' main interest was in selling machinery to the JV.

Profiting from experience

Since 1986, the Chinese authorities have gained savvy in screening

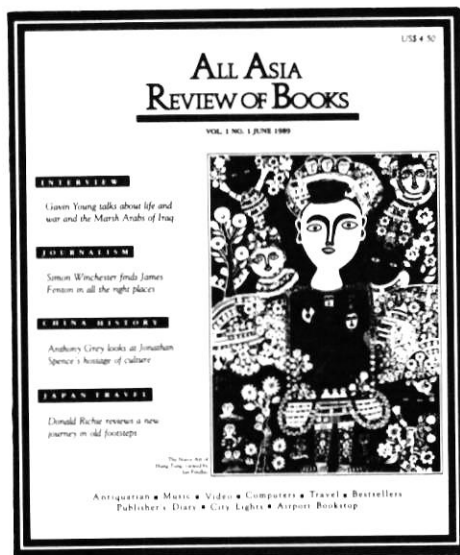
potential losers and stepped up their commitment to potentially strong JVs. The large JVs approved since mid-1986 have been more effectively selected, and though it is too early to assess their success, most have achieved short-term goals. The Goulds Pumps JV in Nanjing introduced more modern technology in deep well pumps into China and, since production is labor-intensive, the pumps can be exported as well as sold domestically. Other large JVs indirectly provide exports by producing international-quality inputs that were previously unavailable in China. The Suvi Woollen Mill, a Sino-Australian JV, for example, makes high-quality yarn for the clothing industry. Nanjing International Container Terminal Services is the first port management JV in China; by introducing modern container-handling services to Nanjing port, this Sino-US JV should reduce transport costs for exporters.

Input procurement and electricity supply continue to pose difficulties, but the authorities are now doing their best to ensure reliable supplies to the large JVs. Similarly, these JVs

have little problem obtaining foreign exchange, even if their sales are primarily domestic. If potential exporters buy the product, prices may be set in foreign exchange. More commonly, however, receipts are in renminbi (RMB), and the JV exchanges currency at a swap center or makes an arrangement with an institution that has access to foreign exchange, such as the Bank of China, as a minority shareholder. There is also a new determination to keep JVs at arm's length from the established domestic factory, to avoid conflicts of interest which hampered some of the early JVs; formerly, some Chinese partners used the JV to upgrade their own factories, sending the worst workers to the JV and using JV funds to upgrade facilities and import equipment that would be used by the whole factory and not just the JV portion. In sum, the authorities select generally sound projects and then use their control over the economy to ensure the JV's profitability, typically at a rate of 15-20 percent. Thus, the initial success of the joint ventures seems likely to continue. 完

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我会活动

Council President Discusses US Business Concerns with Chinese Leaders



MOFERT Director Zheng Tuobin explains China's foreign trade policy to Council President Roger W. Sullivan in Zhongnanhai, the Chinese leaders' compound in Beijing.



Council President Sullivan visited member companies in Shanghai, Guangzhou, and Shenzhen. Here he is shown visiting the Squibb Intercontinental pharmaceuticals joint venture in Shanghai.

Council President Roger W. Sullivan visited China from September 29-October 7 to speak at a symposium commemorating the 10th anniversary of the China International Trust and Investment Corp. (CITIC) and to explore the current business climate in China (see p. commentary). Sullivan met with several of China's senior leaders in Beijing, including Premier Li Peng, Vice Premier Tian Jiyun, Deputy Secretary General of the State Council He Chunlin, and Minister of Foreign Economic Relations and Trade Zheng Tuobin. Following the meetings in Beijing, Sullivan traveled to Dalian, Shanghai, and Shenzhen to meet with member companies and provincial officials.

In all meetings Sullivan expressed concern over the rhetoric foreigners are hearing from official Chinese sources, which hints at far-reaching changes while at the same time asserting that the basic policies of reform and opening to the outside will never change. This policy confusion reflects continued division within the leadership on funda-



Sullivan and Shanghai Foreign Investment Commission Director Ye Longfei (left) and Minhang development zone director Lu Youming view a model of the zone.

mental issues, some of which may be resolved at the upcoming Party Plenum expected to be convened within the next several weeks.

Although all member companies reflected unease over the uncertain business environment, their specific concerns varied widely. Companies manufacturing for export reported no serious problems, but joint ven-

tures seeking to sell in the Chinese domestic market pointed out various worrisome signs, such as moves to impose price or profit controls on their ventures. The growing foreign-exchange shortage, the continuing credit squeeze, and the anti-foreign tone of official rhetoric are also causing concern.

Tourism Delegation Seeks Chinese Commitment to Rebuild Industry

The Council's Travel and Tourism Committee sent a delegation to Beijing September 19-21 to meet with China's top tourism officials to exchange views on the state of China's tourism industry and discuss rebuilding the American tourist market to China. The delegation successfully conveyed the problems American companies are having marketing China, and gained a better understanding of the obstacles to recovery—namely, lack of coordination between various Chinese tourism organizations, Chinese lack of understanding of American marketing timeframes, and the diminished revenues and structural weakness of the Chinese economy.

The delegation first met with Liu Yi, chairman of the National Tourism Administration (NTA), as well as the heads of the pricing, promotion, international, and hotel departments of NTA. After explaining that most American tour operators are now operating with reduced levels of staff and finances, the delegation asked NTA for promotional support in the form of printing and mailing brochures, etc., and to ensure significant price discounts across the board in 1990.

Liu Yi, citing the substantial losses—estimated at \$1.3 billion in 1989—that China's tourism industry has suffered, claimed that China is in no position to offer US companies additional promotional funds, but said that price discounts were a possibility. The delegation proceeded to stress pricing issues at the rest of its meetings.

In a congenial meeting with the China International Travel Service (CITS), CITS President Wang Erkang told the delegation that CITS would discount its service charge (not the package price) 30 percent through March 1990, and 20 percent from April-August. This discount, however, would probably be offset by price increases in domestic air travel by CAAC. Wang said that CAAC had been instructed by the State Council (which recently announced domestic transport price hikes for Chinese from 60-120 percent) to give travel services good rates, but that negotiations had thus far yielded no results.

The delegation therefore explained to CAAC Deputy Director General Ke Deming that price in-

creases would only hurt recovery of China's tourism industry, which provides CAAC with much needed hard currency, and that CAAC should cooperate with other tourism units and reduce prices in 1990. Ke responded that CAAC has already reduced its fares on tourist routes by 20 percent through the end of the year, and that decisions to alter prices are made in conjunction with government plans to rationalize China's pricing system and develop China's airlines. It therefore appears that 1990 price increases were originally supposed to have been imple-

mented in 1989 according to plans drawn up last year, but were not implemented because of the impact of the political turmoil.

After meeting with the Beijing Tourism Administration and joint-venture hoteliers in Beijing, the delegation concluded its visit by meeting with Vice Premier Wu Xueqian, chairman of the State Tourism Committee, in Zhongnanhai. Wu conceded the need for greater cooperation between Chinese tourism units and agreed to submit the delegation's concerns to the State Tourism Committee.



Delegation leader David Parry of Academic Travel Abroad stressed US tour companies' commitment to rebuilding the China travel market in a talk with Vice Premier Wu Xueqian in the Zhongnanhai compound.

Lawyers and Importers Discuss Dispute Resolution

The Council's Legal and Import committees held a joint meeting in New York City October 10 to discuss dispute resolution in China. Two attorneys started off the proceedings with presentations on the legal aspects of dispute resolution in China.

Chen Chidi, a US-based attorney for the China International Trade and Investment Corp. (CITIC) and a registered arbitrator for the China International Economic and Trade Arbitration Commission (CIETAC) outlined the salient features of China's arbitration system, highlighting the unique procedures that characterize commercial dispute resolution there. Significantly, new procedures have been introduced to expand the purview of CIETAC and bring China's arbitration procedures more in line with international standards. These developments are welcome, as the general increase in business activity and the decentralization of foreign

trade have led to a rapid increase in arbitration cases. This phenomenon has further accelerated in the aftermath of Tiananmen, as importers contend with delays and other problems.

Stephen Soble of Goodwin & Soble described the documentary requirements of China's arbitration system, and what can be done to protect commercial interests before a dispute develops. Because Chinese arbitration panels assign great weight to each party's "intent" as well as the final signed contract, it is important to keep thorough, up-to-date notes of all meetings, discussions, and agreements.

Boris Shlomm, president of Amicale Industries, concluded the meeting by providing a detailed review of his company's experience resolving a dispute regarding the import of cashmere from Ningxia—a process that took three years.

Telecommunications: China's Uphill Battle to Modernize

Bureaucratic wrangling and lack of funds present formidable obstacles to expanding the system

Ken Zita

After a generation-long lag, China is preparing to enter the Information Age. Telecommunications has been designated a national strategic priority since 1985, and government interest is steadily growing. The nation's modernization efforts demand that every aspect of the telecommunications sector, from efficient daily communications and component manufacturing, to system engineering and design, and network management and finance, be brought up to date.

Despite the staggering scale of the effort, China has high hopes for its telecommunications expansion. The State knows the shortcomings of its domestic industry and understands the importance of both moving its own research and development (R&D) talents into the marketplace and acquiring technology and research methods from abroad. But China is keen to avoid the "branch plant syndrome"—assembly rather than true R&D—that characterizes other newly industrialized countries in Asia, notably Hong Kong and Taiwan. Furthermore, China wants to acquire foreign technology but keep its own R&D independent and developing. To be successful, considerable organizational reform in the telecommunications sector is needed.

Telecommunications in China is crippled by three structural weaknesses. First, there is little vertical integration of local and toll services, skewing economies of scale in capital investment and revenue collection and leading to technical inconsistencies among regional networks. Second, R&D and telecommunications manufacturing are split helter-skelter between two rival entities, the ministries of Posts and Telecommunications (MPT) and Machine Building and Electronics Industry (MMEI),



and the competition between them strains already scant resources. Third, State funds—especially foreign exchange for imports and joint ventures—are extremely limited, and impending financial reforms in telecommunications will sharpen the crisis.

One phone, 500 callers

The shortcomings of China's telecommunications network are well known. Despite an increase in switching exchanges from 6.2 million in 1979 to 14.9 million in 1988 and steady improvements in calling service, nationwide telephone density is

only 0.75 per 100 population. In the countryside density falls to 0.17, or one phone for every 500 residents. Both figures are well below the developing world's average density of three telephones for every 100 people. Most of China's 7.8 million telephone stations are in offices, and public access is limited: Only officials with deputy director status (or who have special political connections) are entitled to private telephone service.

China hopes to raise the number of telephones to 33.6 million by the year 2000. Analog service is expected to be extended to the smallest towns, and digital switching and transmission corridors are slated to link provincial capitals and big cities; fiber and sophisticated switching systems will upgrade phone networks in urban centers; and national high-speed data and management information system networks are being overlaid on existing facilities to meet the information transit needs of special customers. Because China's own manufacturing capabilities are limited, equipment imports play an important role in the network's expansion. China manufactured only about 1.4 million central office (main or public switch) lines in 1988, for example, 90 percent or more of which were analog technology.

To date, China has been reluctant to import analog technology, largely because of the desire to protect its own manufacturing enterprises and to ensure that foreign exchange is spent only on digital machines. Budgetary constraints may force at least a partial reassessment of this approach. Since 1985, donations of some 500,000 lines of older generation crossbar and step-by-step switching technology have been accepted from Japan's NTT, Singapore's Telecommis, and Hong Kong Tele-

Ken Zita is senior market planner at AT&T Network Systems, International Business Development, where he is responsible for market and strategic planning in China and Taiwan. He is author of Modernizing China's Telecommunications (The Economist Publications, 1987) and numerous business and academic articles on China and the realignment of the global telecommunications industry.

phone, apparently with success. The market for sales of used equipment is soft, however, since suppliers are reluctant to provide operating system, source code (the software that controls switching exchanges), and extensive training on product lines that are being discontinued. Other opportunities may exist for transmission equipment.

Footing the bill

As is common in the Third World, China's telecommunications modernization effort is sharply hindered by lack of capital. A severe shortage of foreign exchange curtails imports, and with no appreciable rate base or internal generation of funds, capital formation is among the industry's greatest challenges. Only about 0.864 percent of the State's fixed investment—\$1.6 billion during the current Seventh Five-Year Plan (FYP, 1986-90)—is committed to telecommunications, one-third the proportion recommended for developing countries by the International Telecommunications Union. By the year 2000, cumulative spending on the public telecommunications infrastructure may reach \$21.7 billion, for an annual investment growth of about 11 percent. An estimated additional \$2.5 billion may be spent on private—or, as the Chinese prefer to call them, "dedicated"—national networks, which are financed, planned, and operated independently of MPT by the ministries of and Railways (MOR), Coal, Petroleum, Water Power, and the People's Liberation Army (PLA). Premises or local area networks, such as in office buildings or hotels, are developing rapidly as well. It is estimated further that an additional block of capital—perhaps \$1-3 billion—will be contributed by private investors to local network development by the end of the century. Total telecommunications plant and administrative expenditures to 2000 could approach \$30 billion.

Decreasing State support

A monumental shift is afoot in financing PTTs, the local bureaus of the MPT. MPT is reducing its dependence on debt by making local operators responsible for their own borrowing. In the past, Beijing covered up to 60 percent of local network costs; this proportion will be drastically reduced in some areas to

A monumental shift is afoot in financing: MPT is reducing its dependence on debt by making local operators responsible for their own borrowing.

as little as 10 percent in the forthcoming Eighth Five-Year Plan (FYP, 1991-95), with loans making up the balance. Though the plan has not yet been set, it will likely *not* be affected by Beijing's apparent recentralization plans, as the central government simply does not itself have the funds to underwrite its much-vaunted telecommunications development goals.

The transition from appropriation to loan will slow local expansion. Just when plant costs are projected to soar, subsidies from the State will be cut, and a new cost—capital—will be added to the local load. The result will be clear: telecommunications operators in China are going to go sliding into debt. With the central bank restricting money supply to curb inflation, the newly needed credit will be even more difficult to obtain. As a prominent telecom official has commented: "This is a contradiction for which we have no solution."

Traditional sources of telecommunications financing—domestic loans, fees, and local investment—present special difficulties in China and cannot be counted on to fill in the gap left by decreased State support. Local planners, nervous about their impending reliance on borrowed money, are wary of becoming openly dependent on the Bank of China (BOC). MPT bureau officers say they cannot rely on the BOC to renew existing loans, let alone to ensure up to a fivefold increase in borrowing in the near future. MPT bureaus must continually haggle with the bank over loan commitments, extensions, and terms of payment.

Borrowing terms, moreover, are unattractive, as low-interest loans do

not exist in China. The only options are preferential loans, at 6 percent over 10 years, made available by the Construction Bank of China; and Bank of China loans at 8 percent over three years, committed by the Industrial and Commercial Bank.

PTTs are likely to get short shrift when looking for money, as individually they will not have the same bargaining clout as the ministry as a whole. Talks are underway with BOC to lengthen payback periods for all projects, but no fast action is anticipated.

Tapping foreign funds

In contrast to China's unattractive borrowing opportunities, foreign governments are offering bilateral and development loans at extremely favorable rates. Terms of government-sponsored concessional loans and mixed-credit packages average 2-5 percent with payback over 6-30 years and may offer a 10-15 year grace period. France, Japan, and Sweden have ensured their suppliers' healthy market shares by aggressively employing concessional financing (*see p. 26*). With the cost of telecommunications infrastructure so great and Chinese buyers so poor, soft loans have become a *sine qua non* of most network sales. However, in the aftermath of the June 4 upheaval, all the OECD countries froze their lending programs. Canada has been the first to break ranks, in support of projects for Northern Telecom, and other nations' vendors have begun to quietly pursue contracts, as if funding would shortly be resumed. Chinese buyers, meanwhile, are attempting to "twist arms," according to one company executive, to apply pressure on foreign governments to reinstate normalized—that is, subsidized—commercial ties. US-based exporters, notably AT&T and Motorola, cannot expect much reprieve from the temporarily closed soft-loan window, since the Chinese expect that concessional financing will soon be fully restored. For many PTT bureaus, the chance to use foreign subsidies is irresistible; as much as 20 percent of Guangdong's capital in the early 1990s may come from abroad.

Multilateral development loans have not been employed in China's telecommunications sector to date, but prospects may change. Both the World Bank and the Asian Develop-

ment Bank will likely investigate telecommunications projects in China as the international political tide shifts, and the Chinese seem inclined to make use of non-aligned bank funds.

Bureaucratic battles

Telecommunications equipment manufacturing in China is a fragmented—and sometimes bitter—competition between MPT, the national long-distance carrier and manufacturer of selected products, and MMEI, the State Council's favorite son and a highly subsidized research center for components and software. The principal result of the competition is that despite formidable engineering and labor resources, China can report few economies of scale and only poor synergy among research and development, product definition, and manufacturing.

The current strategic framework for industrial development in the information sector was formulated by the Group for the Revitalization of the Electronics Industry (ELG), a council of high-level technocrats within the State Council, during the group's short-lived tenure from 1985-88. Under the tutelage of Li Peng, the ELG set the strategic path and development priorities for five electronics industry subsectors: computers, telecommunications, software, integrated circuits, and sensors. Though functionally disbanded and its members reassigned to previous work units (only a skeleton staff remains), the ELG has left an indelible mark on the industry's future.

The ELG's conceptual recommendations, such as limiting the number of foreign electronics suppliers and targeting specific technologies for exploration and growth, are given tangible form by the State Planning Commission (SPC) and the State Science and Technology Commission (SSTC). The SSTC recommends how R&D funding should be spent, while the SPC actually controls budgets. In late 1984, the SPC sought to ease the rivalry between the MPT and MMEI by parceling specific R&D and development tasks to each organization. The compromise made the MPT China's primary *user* of telecommunications equipment, while MMEI was viewed as the primary *manufacturer*.

This demarcation is deceptively neat. The MPT manufactures a great deal of telecommunications equip-

ment and will continue to do so in the future. It currently commands the central-office and PBX manufacturing sector and is a vested stakeholder in optical electronics and line multiplexer equipment. MPT manages China's only operational digital switching facility, the Shanghai Bell Telephone Co. joint venture, with Alcatel NV. MMEI, on the other hand, makes approximately 90 percent of all telecommunications components, from mechanical relays and printed circuit boards to capacitors, transistors, and integrated circuits, and is slated to boost central office production at two new facilities, Germany's Siemens and Japan's NEC. A further distinction between the two ministries is that MPT systems are installed almost exclusively in the public network, while MMEI's equipment is sold chiefly to the military and private networks.

Under SPC/ELG guidance, a program has evolved to support "leading" research institutes that pursue key development projects. The MPT's Research Institute No. 1 in Shanghai, for instance, is slated to become China's foremost (domestic) PBX design center; MMEI's Factory No. 738 in Beijing is destined to be the core for new research in large switches. Similar assignments—in some instances more than one—have been made for all strategic technologies: lightguide fiber (MPT in Wuhan and Shanghai); satellite earthstations (MMEI in Nanjing); PCM (MPT in Chongqing); application-specific integrated circuits (MMEI in Nanjing and Beijing), and so on. Leading research and manufacturing sites are all reported to have ample budgets, access to foreign exchange, highly qualified staff, preferential taxes, and, frequently, permission to license technology from abroad.

Assignment of government-sponsored leading enterprises and factories contrasts sharply with the dominant industrial infrastructure in China. Ministries and municipalities have historically encouraged local self-reliance, a strategy that surrendered manufacturing efficiency to community rule. Crossbar switch factories, for instance, can still be found that in addition to switches, build assembly-line machine tools and test equipment, postal delivery bags, sewing machine motors, household lamps—whatever was once

needed or profitable.

Leading research and production centers are meant to encourage R&D and factory-floor specialization, coordinate talented personnel, and dissolve ancillary activities. If pursued with conviction, the "leading site" strategy may establish better linkage between research, competent factory management, and production, by investing intelligently in organizations most likely to meet with technological and commercial success.

Responsibility for actually implementing ELG/SPC policy rests largely with MMEI, the delegated workhorse of China's electronics boom. MMEI, however, has no clear bureaucratic mechanism to coordinate planners, R&D facilities, and factories in large-scale projects. Sector planning is rare and inefficient where it exists. The ministry can encourage limited association among affiliated factories (which are managed largely as independent enterprises), but it lacks the managerial infrastructure to marshal major development efforts; no single point of strategic control exists within MMEI to harness scattered resources. Planning decisions are often made according to strict financial considerations—that is, who has foreign exchange—and not, in line with SPC "leading site" recommendations, according to carefully considered research and manufacturing efficiencies.

A case in point is a joint R&D and planned manufacturing venture for a small central office exchange between Italtel, the Italian national supplier, and MMEI Research Institute No. 54 in Shijiazhuang. Following ELG's advice, the State Council limited the number of urban central office ventures to three. These are with Alcatel at Factory 520 under MPT; Siemens at Factory 738 in Beijing; and NEC at MMEI factories in and near Tianjin. Feeling left out of the market, Italtel appealed to the government by proposing a joint project to design and eventually manufacture a small *rural* central office exchange. The Italian government made available a soft loan to underwrite the project, thus effectively maneuvering through restrictions established by the central government bureaucracy. In this way, a fourth switching venture agreement was consummated without violating

established rules.

The MPT's manufacturing is managed by the Posts and Telecommunications Corp. (PTIC), a wholly owned subsidiary which tightly controls 27 factories and 100 affiliates. MMEI's more than 1,000 factories, by contrast, were fully divested in the mid-1980s, with only R&D and overall strategic and production planning guided by Beijing.

Misplaced competition

China's emerging industrial policy for information technology calls for the commercialization of basic research combined with limited strategic alliances with foreigners. Telecommunications manufacturing abilities, however, have been hindered by several deeply rooted biases in Chinese science and technology:

• **Basic research holds high status; applied science does not.** The result is that China has impressive theoretic-

cal potential, but little process-oriented development skill.

• **Basic research advances do not effectively lead to product innovation.** There is no adequate product development cycle—from conception to approval, prototype, testing, and production—for important developments. With only fledgling technology management, good ideas often never leave the lab.

• **China lacks formal mechanisms to diffuse innovations.** Chinese technical advances and transferred foreign processes and products often stay within the group that first adopted them, leading to reduplication of research efforts, wasted capital, and limited market penetration.

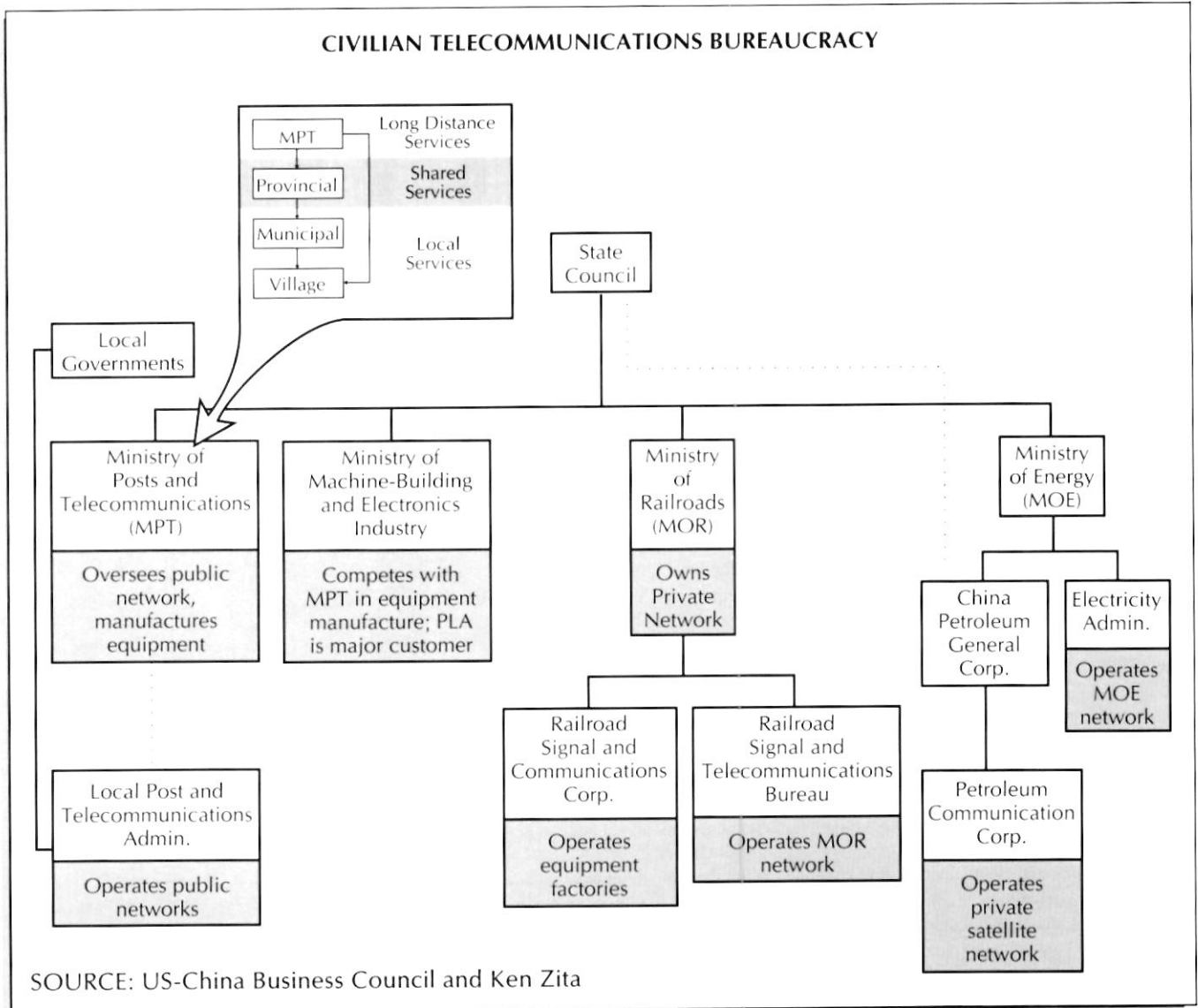
• **Trained personnel are allocated inefficiently.** Due to vertical segmentation of industries and long-standing government policies regulating worker assignments, the R&D environment is not conducive to the

cross-fertilization of expertise. The problem is compounded by increased competition and protectionism among independent research institutes privatized over the last few years and the imprecise parameters of China's nascent intellectual property law.

MPT monopolies

Public telecommunications services are managed by MPT, which has exclusive responsibility for all the international and domestic long-distance (inter-provincial) calling. Regional and local networks are planned by highly autonomous local bureaus of the MPT, although Beijing monitors networks in politically important minority regions, extremely poor areas, and along the nation's borders.

MPT is the only agency in China authorized to carry long-distance traffic, making for extremely high



call charges and the sluggishness of a monopoly. No competitor to MPT is expected to be approved by the State Council any time soon, and certainly not before 2006, when Britain's Cable & Wireless Plc franchise expires on international calls originating in Hong Kong. A new carrier, AsiaSat, is being established within China to provide nationwide telephones and television. Jointly owned by MPT, the China International Trust and Investment Corp. (CITIC), and Cable & Wireless, AsiaSat is slated to lease capacity to the domestic toll market, but only MPT will be authorized to collect revenues.

Strategies for the national network are devised in the MPT's department of planning. The long-range planning division devises the national plan, the planning institute crafts workable directives, and the import planning department sets line-item priorities for major negotiations with foreigners. Via its research academy, the ministry also supports an important policy and econometric think-tank known as the Research Center for Technical Economics.

Several ministries besides MPT—notably Coal, Petroleum, Railways, and Water and Power, as well as the PLA—have since at least 1976 owned and operated their own nationwide dedicated systems to accommodate internal communications. And since 1979, a number of additional systems have emerged: the Ministry of Broadcasting operates an extensive microwave and satellite network to carry TV signals, and the SPC and the Bank of China are attempting to establish real-time links among primary commercial and banking centers in all 30 provinces. Smaller networks are employed by a number of other organizations.

'Trickle-down' services

Local telephone service throughout China is monopolized by a provincial or local authority; usually a provincial telecommunications authority, for instance the Guangdong PPT, has chief responsibility for local network development and financing throughout the region. Affluent and relatively sophisticated cities are building modern networks based on the latest foreign technology, while poorer regions make do with the basics. The government hopes to spearhead advances in selected regions to raise the overall capabilities

The telecommunications sector in China is undergoing profound realignment. Power over some operations is being decentralized to local authorities, State funding is being cut, and technological modernization has resulted in gross disparities between the information "haves" and "have nots."

of the network, catalyzing cultural and commercial development—technological "trickle-down" with Chinese characteristics. Suburbs of cities with big construction budgets will benefit, though most areas will have to wait. Even with Li Peng's stated attempt to rationalize the economic disparities between the coastal provinces and the interior, network growth will occur fastest in the east.

Network stratification poses important social and economic questions: Who will benefit from the new technology? In a macroeconomic sense, any municipality that can afford imported equipment can proceed immediately with network modernization. Other regions must compete for an ever-shrinking share of direct government spending, attempt a "middle-road" course for network development based on domestic analog technology (if production is available), or simply postpone development of the local telephone infrastructure—implying economic and cultural isolation. Rural network development, for instance, has none of the fanfare and little of the potential associated with the bustling digital expansion in the cities. Before 1949, telephone service in the hinterlands was nonexistent. Today, rural areas are still considered poor country cousins: At year end 1987, only about 3.09 million lines served a rural population exceeding 800 million.

Information technology presents special difficulties to China's concept of distribution of public resources. Though the State has been effective in providing health care, housing, and transportation, China simply cannot afford to provide everyone with a telephone. The MPT does not share the Western goal of "universal service," and capital constraints will probably prevent this from becoming a viable development policy before the end of the century. The MPT aims instead to upgrade services for business and government.

Slim profits

Though telecommunications is typically a hugely profitable business, making money has constantly eluded the Chinese. Long-distance services generate the bulk of MPT's revenues and more than 40 percent of its profits. Local services contribute little to the bottom line: telex is just barely profitable; data transmission is losing money; fax has not yet matured; and feature group dialing (Centrex), teleconferencing, and other value-added features remain ambitious projections—and only in big urban centers.

The MPT provides most of the financing for the national network, including long-haul cable and microwave routes, satellite earth stations, and tandem switching centers. Additionally, the MPT meets up to 70 percent of the cost of combined local/toll switching centers or cross-provincial transmission lines, with the local telecommunications authority putting up the remainder. Service revenues are distributed in the same proportions. By investing in combined local/toll equipment, the MPT ensures consistent trunking characteristics and maintains a presence as an equity shareholder in local network development.

More significantly, MPT makes available quotas of hard currency so that local PTTs can convert renminbi (RMB) to foreign exchange at the official rate. When MPT underwrites capital allotments through quotas, it automatically assumes an active role in contract negotiations and system selection.

The operating bureau retains international and domestic long-distance revenues, which are taxed by MPT at year end as part of total earnings. Since international calls are typically paid to the local operator in

foreign exchange and taxed by the ministry in RMB, however, the ministry essentially takes a loss with each international call. If the international call originates in a joint-venture hotel, the local PTT is also paid in RMB, thus denying even the local operator much-needed foreign exchange.

Annual income tax on PTTs averages 20 percent, though some regions—especially minority areas—are tax-free. Profits tax on PTTs is 10 percent. This rate, the same as that levied on MOR, compares with 55 percent typically collected from other industrial enterprises in China; the lower bracket was established to accommodate high infrastructure costs and service rates that are politically capped by the State Pricing Commission. Taxes may, in the future, be managed by local agents, with local governments taxing profits from local operators, provincial governments taxing profits from intraprovincial services, and so on, in order to more efficiently recycle funds to where money is made. Some rationalization of international call revenues can also be expected.

Irrational fee assessment

Many regions seek to increase the internal generation of funds by charging new subscribers exorbitant installation fees to finance plant expansion; high fees effectively pay for the “last mile” cost of the network, or the lines and other equipment needed to reach new customers. In Beijing, for example, the cost to initiate new service is about ¥5,000—nearly five years’ salary for an average worker. Such costly access charges may address a PTT’s short-term capital needs, but they obscure long-term strategic interests: A telecommunications operator’s strongest source of revenue and highest potential for gains lie in services. Instead of squeezing new customers dry, Chinese PTTs would do well to encourage wide penetration of telephones and fund infrastructure expansion through a wider base of value-added fares, particularly privately leased lines. Some areas, such as Guangdong, are striving to make initial connection charges affordable by tariffing installations on a sliding scale according to economic ability or contribution to the community.

A more fundamental problem for



Telephone density in cities is rising, but the countryside lags far behind.

sustainable network financing is that local service tariffs bear little relationship to cost. Rates for basic telephone service are consistent everywhere in China, varying according to a peculiar calculus based on the concentration of lines in the local network. Pricing services according to the presumed value rather than actual cost, however, warps the payback mathematics of capital plant investments. While administratively simple, the rate-calculation method obscures qualitative distinctions between different types of technology; 10,000 lines of imported digital equipment cost a PTT three or four times as much as 10,000 lines of domestic analog equipment.

China’s PTTs also lose money on unfavorable depreciation rates. Telecommunications equipment depreciation is calculated at the same rate as all State assets—7 percent over 15 years. Compared to the industrialized world, these are extremely unattractive terms. Some minor relief is on the way. The fixed rate is expected to be raised by MPT to 8 percent, and a special schedule for stored program-control equipment introduced. Digital exchanges and transmission systems will be assessed at 8-9 percent over 12 years. Even these improved, preferred terms fall far short of those offered many joint ventures, for which plant and equipment depreciation rates may be 18 percent over five years. It is possible

that by the mid-1990s depreciation rates will be brought into line with the reality of the emerging digital infrastructure, when planners hope that a 10-15 percent scale over 7-10 years will be introduced.

PTTs also need to pay closer attention to the variable rate scales inherent in different classes of service. For example, in Shanghai a standard local trunk earns the telecommunications administration \$3.34 per month; a PBX trunk earns \$19.35. Similarly, business services, such as leased and facsimile lines, IDD, cellular radio, and Centrex equipment should be promoted as soon as the local economy can sustain demand.

Creative fundraising

In the 1990s MPT bureaus in larger cities may seek direct local investment by selling bonds and non-transferable public shares. The idea is to diversify fund-sourcing throughout the local economy and to cushion dependency on State banks. A first step in raising local capital might be to sell preferred long-term bonds, a strategy that has proved effective in telecommunications development in Brazil and Thailand and in postwar Germany and Japan. With expanding budget power, local governments may find incentive (and permission) to boost public telecommunications spending by offering municipal utility bonds. PTTs might also demand that big customers with special network needs buy a PTT bond as a condition for service.

To prepare for local money markets, local PTTs will need to become organized more as corporations than as ministry departments. Incorporation would not necessarily imply private enterprise. Rather, to meet the financial challenges that lie ahead, PTTs will need to establish stable organizational structures capable of diversified borrowing, debt management, and near- and long-range business planning. Before State patronage can give way to profit and loss responsibility on the management level, local PTTs must master the process of efficient fund-generation.

Taking on formal shareholders may also help curb corruption; payoffs for network favors are common. With publicly tendered shares, some “gifts” to PTT bureaus may be made in the form of lent capital—that is, as

investments that can be employed directly in network expansion. Graft and private profiteering will continue, but a legitimate investment structure may be established to better channel illicit funds. Such a step would also help clarify management goals. Conflicts often arise between the needs of the business and the obligations of personal relations; business efficiency in the telecommunications sector is not yet strictly organized.

The viability of these proposals depends largely on the direction of the central government's political and economic reforms, and mid-term prospects are not known. In the long term, however, without selling bonds or shares, PTTs will be strapped for cash and hamstrung between escalating capital costs and strategically unsound reliance on debt.

Mixed prospects ahead

The telecommunications sector in China is undergoing profound realignment, reflecting broad changes in Chinese politics and economics. Power over some operations is being decentralized to local authorities, State funding is being cut, and technological modernization has resulted in gross disparities between the information "haves" and "have nots."

The MPT in Beijing faces a difficult dilemma. While it is China's supreme telecommunications authority, the MPT is not a nationwide monopoly, and its influence over local networks is inconsistent. Beijing needs to relinquish authority to provincial planners on matters of system design and concentrate its own resources on expanding the national plan. While MPT provides important technical guidance to provincial PTT bureaus, its discretionary—some say arbitrary—control over import duties and foreign exchange investment credits, and its power of veto over major network projects often frustrate local planners. Unfortunately, MPT appears to be having difficulty strengthening its planning role just when long-range direction and leadership are needed most. Without coherent strategic guidance from Beijing, local telecommunications expansion could falter from competing tactical plans, uneconomical and administratively inconsistent management structures, and conflicting technical protocols.

Yet prospects for telecommunications reform in China are not altogether grim. With increased decentralization local authorities will be forced to assume greater responsibility for managing their money, ostensibly improving business efficiency. After an initial period of confusion—and perhaps even panic—as funding from Beijing is withdrawn, local PTTs may become a driving force in the establishment of municipal capital markets. If so, telecommunications infrastructure development may become more directly aligned with community modernization than with policies set in Beijing. If local money markets do not develop, the current financial crisis of MPT bureaus will persist. Regardless of the financial course taken, to achieve even rudimentary network modernization, PTTs are being

forced to borrow, either from domestic institutions and investors or from abroad. The current political tendency toward recentralization suggests a preference for State-coordinated indigenous capital, although the borrowing policy for the Eighth FYP remains to be seen. Foreign money is apt to figure large.

Like all bureaucratic transformation in China, industry change will come slowly to telecom. The MPT's management style is extremely conservative, and old-guard factions will resist experiments in investment and marketing reform. Nevertheless, MPT has a number of forward-thinking pioneers within its management ranks. The question is who will pay for telecom development. Until foreign soft loans are fully restored, telecommunications sector expansion will be on hold. 完

Funding fall-offs slow down a busy market

Keeping Telecom on Hold

Jeffrey Sprafkin
Ross O'Brien

Reduced State investment and levels of foreign financing have slowed development of telecommunications in China and limited immediate opportunities for foreign companies in this competitive sector. Despite these setbacks and unclear prospects, however, most companies continue to be attracted to the long-term potential of the China market.

In March 1989, the Ministry of Posts and Telecommunications (MPT) announced that total MPT (including local bureaus, or PTTs) investment in telecommunications would decline from roughly \$540 million in 1988 to \$270-450 million. China's investment in telecom (in-

cluding private networks) in 1988 totaled \$720 million and was expected to reach \$886 million in 1990. Estimates now put total 1990 spending at no more than \$700 million.

Despite the funding cutbacks, however, MPT is determined not only to meet the goals set forth in the Seventh Five-Year Plan (FYP, 1986-90) but to surpass them. For example, MPT plans to add 1.5 million subscriber lines to the national network, bringing the total to 13.5 million by 1990—25 percent above the original projection. The ministry also anticipates adding 32,000 long-distance lines, placing the new 1990 target at 100,000 lines, 10 percent over the original projection. Automatic switching in long-distance circuits is to increase to 40 percent of the system, in contrast to the 22 percent in 1987.

Other goals for 1989 include installation of 800,000 local lines, 600,000 of which are to be made operational. Also to be installed are 30,000 lines of automatic long-

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distance switching, of which 20,000 are to be put into operation.

Coping with cutbacks

In order to meet its lofty goals with half as much investment, MPT has modified its investment strategy, with changes in three main areas designed to make up the slack. In light of the recent halt to foreign financing in the wake of the Tiananmen Square incident, however, the scheme is unrealistic. MPT is unlikely to attain aims that were considered ambitious even before the current slowdown.

First, "non-essential" construction will be eliminated. This refers primarily to expansion of MPT's plants and buildings. Building and plant construction projects currently underway are estimated to cost \$0.8-1.07 billion. Most will be stopped, and even those deemed essential will find their budgets reduced. As these projects are supplied primarily by domestic sources, the reductions should have little impact on foreign companies.

Second, MPT plans to acquire more used equipment to modernize its network, thereby obtaining relatively modern technology more cheaply. The Fujian PTT in March reached an agreement with the Hong Kong Telephone Co., which will transfer gratis 438,000 lines of previously dismantled analog switching equipment. Similarly, the MPT has already purchased used transmission equipment from two US analog microwave routes slated for replacement. The NEC 6G-2400-500 and Collins MAR-6C systems will be used to renovate 10 existing microwave trunks in China, linking major communications hubs. Purchase and installation will cost \$37 million; the equipment cost around \$200 million when newly purchased in 1985. Although second-hand sales may slightly diminish demand for new technology in the microwave market, it should not have much of an impact on demand for foreign technology in the sector as a whole. The strategy is a viable one for the Chinese, who receive fairly modern equipment at a good price, and acceptable (if not enthusiastically received) to foreigners, who see future opportunities to upgrade the used systems.

The most important change in MPT's strategy is heavy reliance on foreign grants and loans to meet its targets. Today, however, the willing-

TELECOM TERMS

Analog route: a series of microwave transmitters and receivers in a path employing analog technology, which makes its connection mechanically, with moving parts

CPE: Customer Premise Equipment. This term encompasses telephones, fax machines, switching consuls, and other hardware used by customers

Digital switching: a system for routing calls by assigning a pulse or code to each connection and thus sending calls at varying intervals along a line

FO terminal: terminals using fiber optic cables, which transmit signals in light pulses

KTS: Key Telephone System, a small business communications system with call transferring, call forwarding, and other features built into the telephone itself

Line multiplexer: A device for combining several communications lines sharing one circuit. May be analog or digital

PBX: Private Branch Exchange. A "dedicated" telephone exchanges in an office building, hotel, or other place requiring multiple lines. A PBX offers features such as auto call distribution and call waiting

PCM: Pulse Code Modulation. The process by which signals for calls are divided according to pulses to be received. Also called digital carrier service

Trunk: a path of cables or radio transceivers connecting two central exchanges over which incoming lines are switched

Brand names for digital switching products:

NEAX61: produced by NEC of Japan

EWSD: produced by Siemens of Germany

AXE: produced by Ericsson of Sweden

E10 and S12: produced by Alcatel, based in France, and its divisions, including Alcatel CIT in France and Alcatel SEL in Germany

ness of foreign governments to provide concessionary financing can no longer be taken for granted.

Since June 4, all projects financed

by foreign loans involving more than \$10-15 million in capital investment have been placed in jeopardy by sanctions and worldwide reproval following the crackdown. For the most part, Western governments have suspended development loans to China, stalling many projects. Should foreign support be withdrawn entirely, China will no longer be able to keep these projects afloat. France, Japan, and Sweden have together committed some \$400-500 million during the current Seventh FYP, while Canada, Italy, Spain, and the United Kingdom have initiated more modest programs (*see list*). In 1987, foreign loans accounted for 12 percent of total telecom financing.

Some governments have already begun to take steps to allow new soft loans to China. In Canada, an \$84 million loan earmarked for a Northern Telecom project to provide digital switching equipment to Hunan, Shaanxi, Yunnan, and Hebei provinces was approved in August 1989—the first major foreign loan for telecom development since the violence in Beijing, and Canadian officials recently decided to proceed with the loan despite public outcry following the Tiananmen incident. The Canadian International Development Agency (CIDA) has tabled all of its grant decisions, however, thereby slowing a satellite network project underway by Spar Aerospace.

The Swedish government has frozen soft loans from BITS, the Swedish international development agency. Funds for Ericsson's \$27 million contract to install AXE switching equipment in Jiangsu are accordingly being withheld until the government decides to unfreeze or discontinue the loan. Ericsson is pressing ahead with installation, however, and may start searching for other financing options if the issue is not resolved soon.

Japan's Overseas Economic Cooperation Fund (OECF), the major Japanese supplier of loans to the sector, has continued to fund projects already underway, but is holding off on any new projects.

Despite the wariness of foreign financial institutions about reentering China, suppliers still have confidence in the market and apparently have not altered their commitment to China. Some might believe that their bargaining power with the Chinese has improved in the medium-term, as

China will now have to work harder to find investors and pay a higher price for loans.

Producing locally

Before June 4, competition between foreign suppliers in China's telecom markets was fierce. Bilateral market shares in 1985, the last year for which complete statistics are available, show Japan supplying 37.1 percent of China's telecom imports, North America 21.2 percent, and European Community countries 23.3

percent. More recent trends indicate that North American sales have improved marginally, while European and Scandinavian sales have risen significantly, as earlier strategic soft loan investments have begun to show results. Japanese companies have also demonstrated significant growth, especially in switching markets.

In order to increase their competitiveness, major telecommunications suppliers are now becoming involved in technology transfer and local

production schemes to build up market share.

Alcatel BTM's early partnership with MPT in the Shanghai Bell Telephone Manufacturing Co. joint venture, for example, assured the System 1240 a slot in China's digital switching market. Similarly, recent local production pacts by NEC and Siemens with MPT are expected to guarantee places for NEAX61 and EWSD technology in China's long-term network plans. Ericsson and Fujitsu are also expected to look to

Foreign Soft Loans to China Telecom Projects 1984-89

Country	Project	Value of contract funded by soft loan (\$millions)	Year	Comments
Belgium	Shanghai Bell Telephone Equipment Factory	10	1984	Belgian government co-investment in Bell Telephone Co. switching equipment joint venture (all money concessional)
Sweden	Shanghai Telex Machine Factory	2.2	1984	Loan for technology transfer by Philips Sweden and factory upgrading
Belgium	Shanghai Bell Telephone Plant	11	1985	Equipment and parts purchase by Shanghai Bell Telephone equipment joint venture
France	Beijing Telephone Network, Phase I	66	1985	Contract with Alcatel for 100,00 lines in 14 exchanges, plus trunk circuits, optical fiber cable, and terminals
Japan	Shanghai, Guangzhou, and Tianjin Telephone Networks	135	1985	OECF commitment for 150,000 lines worth of equipment (actual contracts may not have come out to such a high value). Loans have been effectively tied
Sweden	Liaoning Telephone Network, Phase I	21.8	1985	Contracts with Ericsson for switching systems and digital microwave communications in 4 cities; covers a total of 68,000 subscriber lines
Italy	Chongqing Telecommunications Equipment Plant	15	1986	To support transfer of Italtel pulse code modulation (transmission) technology
Sweden	Liaoning Telephone System, Phase II	14.3	1986	
Canada	Jiangxi Telephone System	6	1987	Contract to Northern Telecommunications for switching systems
Norway	Guangdong Power Network Microwave Communications	4.7	1987	Concessional portion in form of grant; contract to A/S-NERA
Norway	Beijing Marine Satellite Earth Station	8.2	1987	
Sweden	Tianjin No. 2 Cable Plant Upgrading	2.7	1987	To support technology transfer for polyolefin-sheathed telephone cable by Kabmatic Company
France	Beijing Telephone Network, Phase II	103	1988	Contract with Alcatel and Cables de Lyon for 155,000 lines in 10 exchanges plus 12 satellite exchanges, trunk circuits, optical fiber cable and plastic cable

local production to safeguard their future market shares. In PBX, 10 license and joint-venture deals between local and foreign partners have been struck over the last year or two.

Cut-rate prices

Aggressive pricing policies have become a feature in nearly every telecom market. In switching markets, Japanese suppliers NEC and Fujitsu have cut prices to the bone, figuring on sacrificing short-term

profitability for long-term market share. Canada's Northern Telecom has also reduced its prices significantly. PBX markets are equally cutthroat, with locally produced digital systems selling for a fraction above the cost of imported kits. What's more, digital PBX supply will be restricted to 10 local production plants and Shanghai Bell by 1990, and Philips—which has gained the market lead with strong sales of its imported Sopho—has established joint ventures with three of the 10

local production slots to lock in future market share. Among the top five digital PBX suppliers, NEC is the only one that hasn't lined up local production.

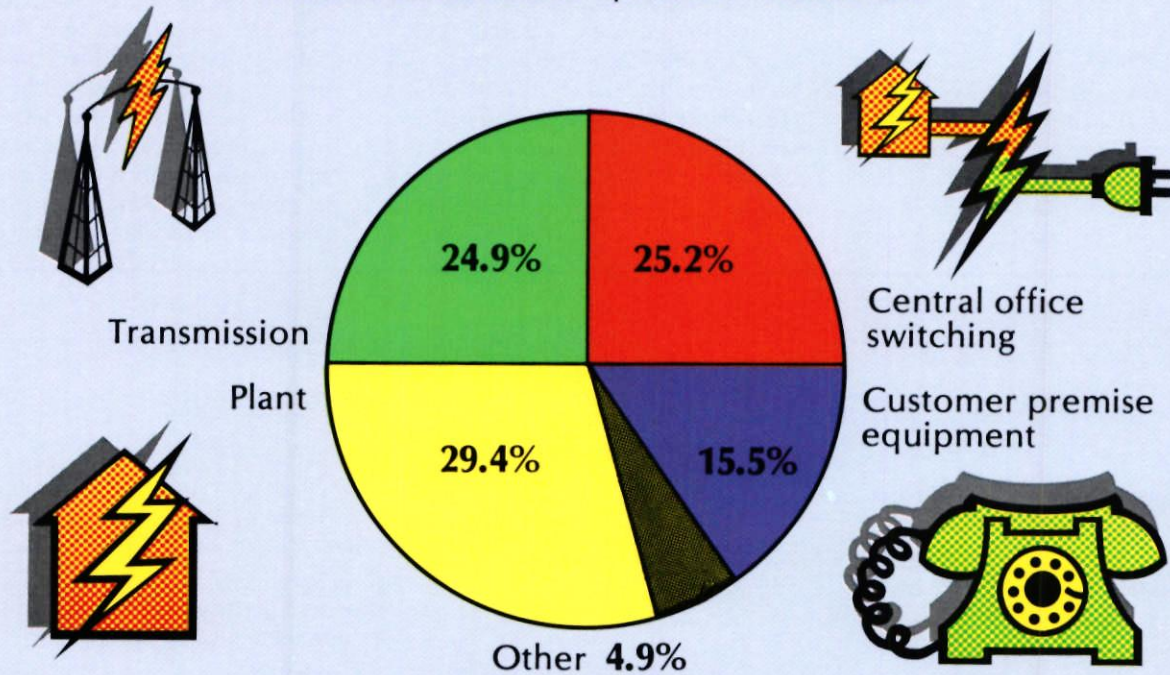
In the switching market, Alcatel's local S12 production and dual S12 and E10 marketing efforts have given the company the lead in the digital market. NEC and Fujitsu have established important beachheads in coastal markets such as Fujian, Tianjin, and Guangdong, giving them a firm grip on second- and third-place

Country	Project	Value of contract funded by soft loan (\$millions)	Year	Comments
Netherlands	Yangtze Optical Fiber and Cable Company	22.7	1988	Mixed credit for Dutch part of investment in Philips Optical Fiber and Cable joint venture in Wuhan
Netherlands	Suzhou No. 1 Wire Communications Factory	7	1988	For technology transfer of Philips digital switchboard technology and factory upgrading
Norway	Guangdong Power Network Microwave Communications	1.9	1988	New contract for A/S NERA (followed similar 1987 contract)
Spain	Hubei Telephone Network	20	1988	Contract to Alcatel Spain to cover 43,000 lines, 18,000 trunk lines, and cable and transmission equipment for several cities
Sweden	Liaoning Telephone Network, Phase III	13.5	1988	Loan promised for Ericsson Equipment for 50,000 lines switching and 300 long distance lines for Dalian, Liaoyang, and Benxi in 1989
Sweden	Guangdong Telephone Network, Phase I	33.4	1988	Covers contract with Ericsson for switching system for 131,000 local lines in several cities and digital microwave transmission
Germany	Shandong Switching, Phase II	10.0	—	Germans appraised project in 1988 for future loan, to be offered after 1989
Canada	Shanghai Television Tower	40	1989	Chinese media announced in 1989 that facility would be bought from Canada using mixed credits
Canada	Telephone Systems in Jiangxi, Shandong, Hebei, and Shaanxi provinces	50	1989	To finance all or part of Northern Telecom sale of 300,000 lines worth of switching equipment in 1988
Germany	Shandong Telephone System, Phase I	20	1989	Loan promised in 1987-88 for 25,000 lines of switching equipment in various cities and microwave transmission equipment
Spain	Zhejiang Telephone System	15	1989	Contract with Alcatel Spain for a reported 50,000 lines
Sweden	Chongqing Telephone Network	12.1	1989	Announced that China would import 40,000 lines of switching systems from Ericsson in 1989

SOURCE: US-China Business Council

TELECOMMUNICATIONS EQUIPMENT MARKETS, 1988

Total Market: \$720.7 million



SOURCE: Pyramid Research Estimates

supplier slots respectively.

NEC and Fujitsu have shown even greater strength in China's transmission markets. Widespread digital contracts have given NEC more than 43 percent of China's microwave market. The supplier has also racked up strong FO terminal sales, but faces keen competition from Fujitsu and Alcatel.

While local MPT and Ministry of Machine Building and Electronics Industry (MMEI) factories have yet to gain a major share of digital microwave and FO markets, local industry is becoming an important source of cable and line carrier equipment for both PTTs and private networks. A local PCM system licensing agreement has given Alcatel an inroad into carrier transmission markets.

KTS and hybrid suppliers face few entry barriers in China's growing CPE market. Although local factories supply some 90 percent of the KTS and a large share of the under 200-line PBX market, a number of Japanese and Asian suppliers have dropped their prices and begun to use Hong Kong platforms to penetrate this fast-growing segment of the CPE market.

As China's risk rating rises among bilateral and commercial lenders, foreign-exchange shortages are likely to pose an even greater setback to PTTs. Countertrade and buyback strategies could thus become critical to future telecom trade. Japanese and Eastern European suppliers could be well-positioned to profit from an increase in countertrade.

In the meantime, the southern coastal provinces—Fujian, Guangdong, and Zhejiang—are in the best position to continue telecom modernization due to their political and economic distance from Beijing. The export industries in these areas are likely to provide some foreign exchange, or at least commodities for countertrade. In addition, some provincial governments are trying to streamline telecom project approval as much as possible in order to attract new funds. Under a new ordinance passed by the Shanghai municipal government, for example, future petitions from overseas suppliers interested in setting up production and trade projects will be reviewed and responded to within 30 days.

While the future of central government plans to rationalize equipment

supply to local production ventures remains up in the air, local production ventures with buyback options could gain competitive advantage. Suppliers like NEC and Philips, which have established local production in both telecom and non-telecom product areas, would benefit the most from buyback strategies.

For other suppliers, Hong Kong could lose some of its stability as a platform for China trade, as the 1997 reunification date draws closer. CPE suppliers, however, especially those without local production facilities, will probably find that Hong Kong is still the most effective channel for China sales.

Telecom suppliers across the board are eager to get back to business in China and are convinced that market opportunities outweigh the threat of continued social unrest. Most are confident that frozen loans and aid packages will thaw by the first quarter of 1990. Once the first major project breaks the ice, the pressure will increase on suppliers and their governments to respond to the competition. Before then, however, telecom development in China will be minimal.

完

BOOKSHELF

书刊介绍



Intellectual Property Law in the People's Republic of China, by Laurence J. Brahm. Hong Kong: Longman Group (Far East) Ltd., 1988. 142 pp. \$145

hardcover.

This book repeats the successful and straightforward format that the Longman Group has used in previous volumes on technology transfer, taxes, equity joint ventures, and contract laws in China. Like these earlier works, it breaks little new ground and offers no new perspective on the topics covered. Its strengths derive from the comprehensive, point-by-point treatment of an important and rapidly developing aspect of business in China and the legal framework within which it is conducted.

The book is organized into three broad sections covering trademarks, patents, and copyright. Within each section, the author anchors the discussion in the cultural and ideological framework in which the law was developed. For instance, he offers many observations about the idiosyncracies of the Chinese language that have generated a singular brand of trademark law. Homophones, extremely common in Chinese, may be permitted, because the visible differences in the written characters are sufficient to avoid confusion. However, different combinations of characters with similar meanings may be adjudged to be similar trademarks that are likely to confuse consumers, and thus not permitted.

The book provides practical information on the application and filing process, investigation and enforcement of infringement, and existing laws and regulations. However, the section on copyright is already dated, with discussion focusing on the most current draft copyright law available at the time of publication,

in September 1988. A more recent draft copyright law with substantial modifications has been circulated, dated November 1988. The reader is cautioned to check periodical sources to ascertain the most up-to-date status of each of these evolving areas of law. —Richard Brecher



Dealing with the Chinese, by Scott Seligman. New York: Warner Books, 1989. \$12.95 softcover.

Most people who do regular business in China know the Chinese penchant for protocol and the importance of expressing gratitude to hosts and deference to high officials. But do they know that a Chinese may feel slighted if seated too close to the door, or if a foreigner presents a namecard using only one hand? Will they feel hopeful if a Chinese negotiator nods sympathetically to a proposal, and do they imagine that the high rank of a foreign visitor to China will ensure kid-glove treatment?

This book sets straight the misguided and offers a veritable "Miss Manners" guide through business encounters with the Chinese in all their excruciating formality. Chapters lead the business traveler through each stage of negotiations in China, from making contact with Chinese organizations from afar, meeting face to face, holding banquets and giving gifts, negotiating a business deal and following through, to hosting a Chinese delegation in the United States. Along the way Seligman describes principles on which the Chinese system of protocol rests. "Face or *mianzi*, the regard in which one is held by others or the light in which one appears, is vitally important to the Chinese," notes the chapter entitled "Some Basic Cultural Differences." "Causing someone to lose face, through dressing someone down, failing to treat him

or her with respect, or insulting someone results in a loss of cooperation and often in retaliation." Foreign businesspeople would do well to write this principle on index cards to carry always in their breast pockets in China.

Dealing with the Chinese makes perfect airplane reading, not because it deserves brief attention but because its general tenets are easily absorbed: For example, in China, Westerners are well-advised to keep temper and other unseemly passions tucked away out of view, by maintaining the appearance of calm during negotiations, by eating and drinking moderately, and avoiding revealing dress. This book, designed for quick reading, is dressed for success, with numbered "recaps" summarizing the main points of each chapter for the busy executive, plenty of subheads, a glossary of terms, index, and recommended reading list. Seligman writes in a smooth, entertaining style that flows effortlessly throughout this compact book. And though he is often repetitive, he avoids the smug generalizations that are the major pitfall of the "explaining the Chinese" genre. He offers insights into Chinese culture with the proviso that the observations are surface takes and not philosophy. This book could help foreigners increase their comfort level in China and possibly save much embarrassment. —ASY

China's Rise to Commercial Maritime Power, by Irwin M. Heine. New York, NY: Greenwood Press, 1989. 175 pp. \$39.95 hardcover.

As a history and explanation of China's maritime shipping policy, this book has no equal. Never before has so much information been gathered, sifted, and presented so well. The author even provides brief summaries of 40 countries that currently have maritime agreements with China. An additional chapter focuses on China's relations with interna-

tional maritime organizations. Tables at the end of the volume show the structure of China's merchant marine, foreign trade, and maritime accords, and the book also includes a glossary and bibliography. China traders and academic libraries with strong China collections will find this book an informative and useful addition to the shelf.

The amazing growth of China's maritime shipping from the ravages of the 1949 revolution to 1987, when China ranked fourth in world shipbuilding, is readably recounted in this volume. China's phenomenal success is due to its strong policy of self reliance in shipping, along with its increasingly active participation in world trade.

The expansion of China's merchant marine is reviewed in detail along with the organizations that oversee maritime policy: the Ministry of Communications, China State Shipbuilding Corp., China Ocean Shipping Corp., and their affiliates. These few organizations tightly control all aspects of maritime policy, including shipbuilding, freight rates, port construction, and more. This

concentration of authority, according to the author, is the key to China's success.

The political steps taken to move China toward its goal of self-sufficiency began in the 1950s with maritime agreements concluded with Communist-bloc countries, and later, when China entered the United Nations, it was given the opportunity to sign even more bilateral agreements. This, in turn, increased China's foreign trade. The author notes, however, that despite this rapid growth, shipping still cannot keep pace with foreign trade, and China's ports are badly congested.

—Jennifer Little



China Trade and Price Statistics, 1988, compiled by the State Statistical Bureau. New York, NY: Praeger Publishers, 1989. 214 pp. \$65.00 hardcover.

This reference guide is the latest collection of statistics on domestic and foreign trade, prices, and tourism in China. Originally published by Oxford University Press, it is now

issued by the China Statistics Archives at the University of Illinois, which publishes *China Statistics Monthly*—the single most authoritative source of Chinese statistical information.

The new publishers have changed the format to resemble *China Statistics Monthly*, improving the organization and making it much easier to read. All statistics are arranged in time-series tables from the early 1950s through 1987. The introduction comes complete with brief explanatory notes on the statistical topics covered as well as a tabular guide with footnotes to help the reader decipher the statistical information.

Although foreign trade statistics are available elsewhere, information on prices and consumption can be difficult to obtain. This volume is essential for anyone researching purchasing power, consumption of major products, cost of living, and other hard-to-get numbers. The guide will prove invaluable both to businesspeople tracking trends in the China trade and to academic specialists.

—KES

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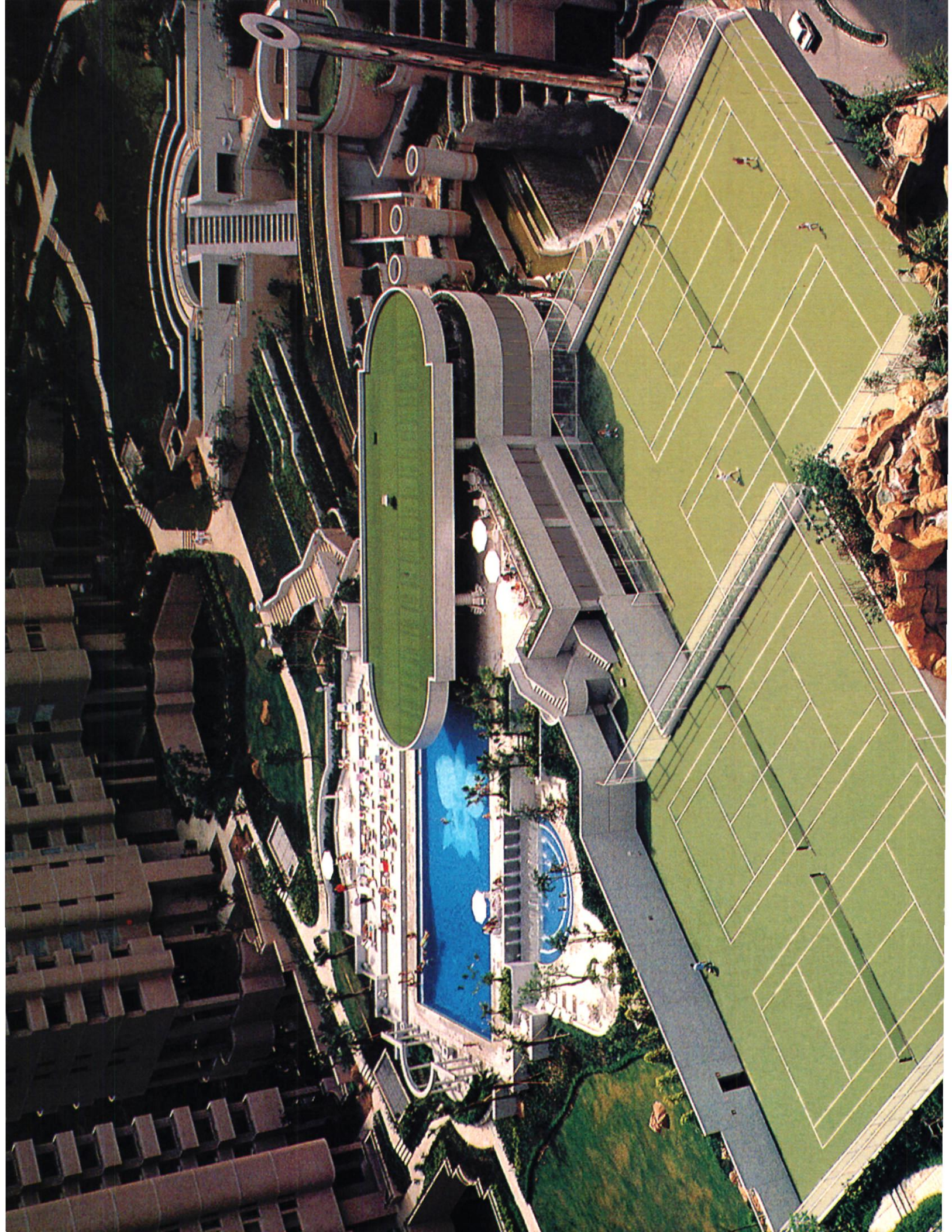
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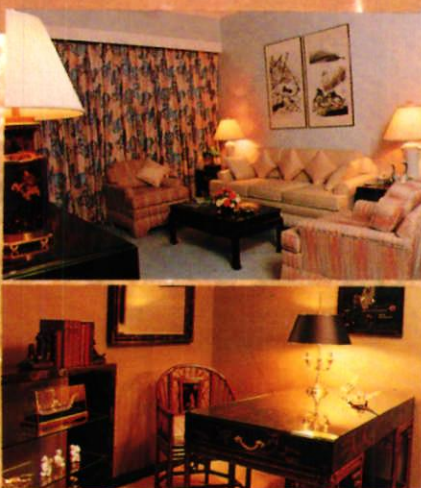
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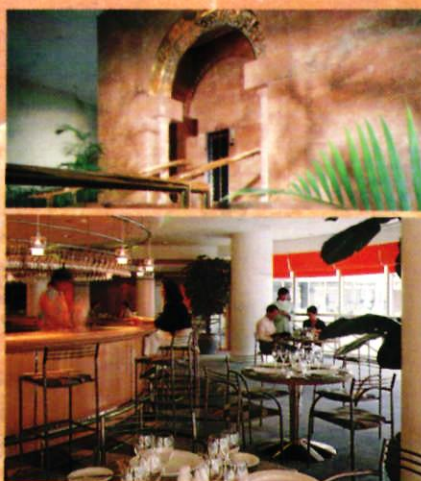
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Sunday Drivers—All Week Long

The pleasures and perils of owning a car in China

Laurence W. Bates
Andre T. Goldstein

Mobility can make or break expatriate life in China, which is subject to the strain of one-day weekends and frequent business-related banquets on weeknights, as well as lack of privacy in the hotels or apartment houses where foreign businesspeople normally are housed. Purchasing a car to facilitate evening and weekend getaways has become increasingly attractive, especially in Beijing, where distances are great, taxis—already expensive—are generally available only at hotels, and suburbs offer a wide range of leisure activities. Within easy driving distance of Beijing are Fangshan County and the Marco Polo Bridge to the southwest; the Fragrant Hills, Tanzhen Temple, and many other temples and historical sites to the west; the Great Wall, Longqingxia, Miyun Reservoir, and the Ming Tombs (including a golf course and shooting range) to the north; Chengde to the northeast, and Tianjin to the southeast.

Car use has grown steadily in the last decade, with the number of vehicles on China's roads tripling in 1980-88. According to the Beijing Administrative Bureau of Traffic Control (BTC), Beijing has 300,000 passenger vehicles, of which 5,000 are registered in the names of foreign individuals or their employers. In addition, many foreign representative offices either hire vehicles long-term, together with their drivers, or register cars reserved for expatriate use in the names of foreign joint ventures. Many expatriates, however, are unfamiliar with the regulations of personal car use and the options they have when considering a purchase.

Deals for wheels

A potential car owner must first

decide whether to buy an imported, Chinese-made, or foreign venture-produced car, then determine if it would make sense to buy the vehicle directly or in an employer's name. Taxes are often roughly the same, regardless of whether the foreign company or its employee buys a car, so the issue may be one of convenience. Generally, simple economics—especially taxes—dictate the choice of a domestic or imported car (*see chart*), since importing a car may incur taxes of almost 300 percent of the car's cost. Even bringing one's own used car to China is taxable by Customs at 60-80 percent of the car's value, in addition to taxes imposed by other authorities.

The cheapest Chinese-made car is the Beijing 212 Jeep, its military-green color making it resemble a vehicle of the People's Liberation Army. The jeep sells for \$4,300, plus a vehicle purchase surcharge (VPS) of 10 percent. The VPS, assessed at rates of 10 percent on domestically produced cars and 15 percent on imported cars, was enacted by the State Council in 1985 to subsidize construction of new highways. Generally, Chinese cars must be bought directly from the manufacturer, since China has yet to open dealerships.

Next cheapest are imports, providing the purchaser is exempt from most import taxes. A plethora of taxes have been imposed in the 1980s, ostensibly to curb consumption of imported luxury goods and to

Laurence W. Bates is an attorney based in Beijing with the international law firm of Paul, Weiss, Rifkind, Wharton & Garrison. Andre T. Goldstein until recently was based with Paul, Weiss in Beijing as a legal assistant. Both have Chinese driver's licenses and occasionally drive their firm's car for personal use.

relieve the traffic congestion that followed a burst of imports by State enterprises in the early part of the decade. The real impetus for the taxes, however, may be a desire to protect substantial Chinese and foreign investments in the infant joint-venture automobile industry. The most recent of these taxes—a flat-rate import consumption tax—took effect on April 11, 1989.

The most economical choice of imported cars would be the Polski Fiat 125P or the Polonez, apparently the most popular imported cars for Chinese private owners, currently priced at ¥55,510 and ¥66,510 respectively (\$15,000 and \$18,000), excluding the 15 percent VPS. Though technically illegal, foreign buyers usually can purchase these cars in renminbi (RMB) at a higher-than-official exchange rate or negotiate a considerable reduction in the US dollar price. China currently imports 8,000-10,000 cars of these two types each year as part of a barter-trade deal. As part of an inter-governmental agreement, the cars are exempt from many import taxes.

Joint-venture advantages

The easiest cars to maintain and repair are those produced by joint ventures in China. Shanghai Santana, for example, maintains 30 service centers throughout China, and parts, without import taxes, are relatively inexpensive. In Beijing, moreover, many foreign residents prefer joint-venture cars, because heavy import taxes are unavoidable in the capital, and some people find the Polish imports uncomfortable to drive.

Three major producers now form China's joint-venture market: Shanghai Volkswagen Corp., a venture between Volkswagen AG and Shanghai Automotive Factory which produces the four-door Shanghai

Santana; Beijing Jeep Corp. Ltd., a venture between Beijing Automobile Works and Chrysler Corp. which makes the AMC Beijing Jeep; and Guangzhou Peugeot Automobile Co., which makes a mid-size station wagon called the Guangzhou Peugeot 505. The cost of these three vehicles ranges from \$21,500-\$27,350, not including the VPS tax.

Two other foreign-designed cars produced in China are the Audi 100 four- and five-cylinder sedans assembled from knocked-down kits in Changchun, Jilin Province, costing \$40,000 for the four-cylinder and \$47,000 for the five-cylinder model, and the Daihatsu Charade 730 compact minivan, assembled from kits in Tianjin, priced at \$25,000.

Registration

Registration formalities for a newly purchased car are generally straightforward. The first step is to obtain a Chinese driver's license, which in Beijing is accomplished by presenting a valid foreign license together with a photograph, health certification from a Chinese medical authority, and evidence of residence in China. The only slight inconvenience is that the Office of Motor Vehicles (OMV) within the BTC retains the foreign license until the Chinese license is turned in. In Shanghai, the driver is required to take a basic examination either orally or in writing, in English or Chinese. Traffic rules in both cities are published in English- and Chinese-language booklets obtainable at the OMV. The owner of a new vehicle should then present an original receipt of purchase to the People's Insurance Company of China (PICC), which will issue a temporary, seven-day insurance policy covering both damage to the insured car and third-party liability for losses to person and property.

With the temporary insurance policy in hand, the owner may get the new car inspected for a small fee at a center authorized by the OMV. If the car passes, the OMV will issue a license plate (black in Beijing, indicating that the vehicle is owned by a foreigner) and official registration. The entire registration process, after obtaining proof of purchase, can generally be completed within one week. Immediately thereafter, the owner is required to pay road maintenance tax, based on the vehicle's weight, to the local Ministry of

Photo courtesy of Laurence W. Bates



Beijing-based foreigners may drive to a few nearby resorts, including Chengde and Beidaihe, but must get special permission for other inter-city travel.

Communications bureau and a license plate tax to the local taxation bureau.

Insurance

Since June 1, a new regulation promulgated jointly by the Ministry of Foreign Affairs, PICC, and the Public Security Bureau (PSB) makes registration contingent on purchasing at least ¥20,000 (about \$5,400) in third-party liability insurance for all foreign-owned vehicles (including those owned by diplomats). Vehicle owners may want to consider buying more third-party coverage, especially as premiums are inexpensive: ¥500 per year, for example, gives ¥100,000 of coverage, and ¥650 per year yields ¥600,000 of coverage.

In addition to third-party liability coverage, loss or damage coverage for the insured's own vehicle is available at premiums beginning at 2 percent annually of coverage value and varying with the desired deductible. This insurance generally will not cover losses arising from war, military action, insurrection, and the like. In Beijing, the basic insurance policies apply only to accidents occurring within Beijing or Tianjin municipalities, although extended temporary coverage is available for travel to Hebei Province (in which the summer resort Beidaihe and the scenic city Chengde are located) and other places open to foreigners. In addition, policies are available for

broader geographic regions, but foreigners must obtain explicit permission from the Public Security Bureau for inter-city car travel to all but a handful of resorts near Beijing or Shanghai—and such permission is difficult to get.

Some companies permit employees to drive a company car for personal use, but employers may hesitate on two counts: Companies fear that in the case of a serious accident, heavy liabilities will be levied against them, because they are perceived as having deep pockets. Second, many employers are wary of the adverse publicity that would ensue if an employee had a bad accident in the company car. Chinese lawyers say there is no legal basis for demanding heavier damage payments from a foreign company than from an individual. On the other hand, Chinese employers are normally expected to pay compensation for accidents in which their employees are involved. A foreign company could deal with this problem by requiring its employees to take out extra third-party liability insurance coverage before driving a company car, and in fact, this type of coverage—in minimal quantities—is now required by Chinese law.

Many foreign companies have no policy at all regarding use of the firm's car, although some that permit their employees to drive include in their policy statements clear instructions on the driver's expected con-

duct in the event of an accident.

On the road

Having purchased a car and completed registration and insurance formalities, the new car owner can simply drive away—with a few words of warning. Buying gasoline may be the first roadblock, since it is usually available only with ration coupons. In practice, however, foreigners may buy gasoline at two locations in Beijing near the Jianguomenwai and Sanlitun diplomatic complexes, where the ration coupons are sold on demand. Gas stations are fairly convenient on major roads, but foreigners need special coupons or permits to buy gas outside Beijing. Gasoline will probably not be refused to the hapless foreigner in an emergency, however, although some debate (in Chinese, of course) may be required.

Foreign drivers must also be on the alert for unusual driving habits and road configurations. In China, cars, trucks, motorcycles, bicycles, pedicabs, animal-drawn carts, and pedestrians compete for limited road space, and widespread awareness of traffic regulations is not well developed among pedestrians, to say the least (see *The CBR*, March-April 1989, p. 34). It doesn't help that traffic

lights are routinely out of service during power cutoffs. Perhaps the greatest difficulty the foreigner may face is complex routing regulations imposed in the past two years to alter the flow of traffic in Beijing: One-way streets are rife, legal left turns rare, and rush-hour rules Byzantine in their complexity.

The driver must also be aware of certain roads which, usually for military reasons, are off limits to foreigners. Road markings may not always be visible, leaving day-trippers prone to disappointment when they drive dozens of miles toward a promising site, only to discover that the crucial final stretch is off limits. Detailed maps are not readily available, even to Chinese, presenting a challenge to the expatriate driver, who must assemble a mental map based on trial-and-error journeys into the countryside. Travel from Shanghai to the nearby cities of Hangzhou, Nanjing, and Suzhou can be an equally difficult adventure.

Night driving poses particular challenges in China, where trucks may drive with only one headlight working or none at all, high beams are turned up as a matter of course to warn approaching vehicles, and normal beams tend to settle in the eyes of

the oncoming driver, making it impossible to see pedestrians or bicyclists on the right. The danger is increased by an almost universal nonchalance about speed limits on rural roads. Now, in the center of Beijing, nighttime drivers must also be prepared for sudden stops and checks by martial-law troops.

What to do in an accident

Accidents are, unfortunately, not unusual in China. In 1988 Beijing's BTC recorded 228 motor vehicle accidents in Beijing involving foreign drivers or foreign-owned vehicles, resulting in 111 injuries and five deaths. Although traumatic, accidents are now handled according to a relatively standardized procedure, and Chinese officials claim no foreigner would be permanently expelled from China because of an automobile accident, as occurred at least once to a high-ranking diplomat in the late 1970s.

Chinese concepts of liability, however, differ substantially from American ones. Often the Chinese authorities hold the driver of a motor vehicle automatically liable in an accident involving a motor vehicle and a pedestrian or bicyclist. If liability is split, Chinese police will unilaterally determine the apportionment, adding up total damages, including medical fees, bicycle replacement costs, and lost income, and divide this sum in accordance with the apportionment of liability. This contrasts with traditional procedure in the United States, where a driver who, for example, hit a jaywalking pedestrian while driving at an excessive speed would be able to argue in court against being assigned any liability at all, because of the pedestrian's negligence.

The driver must follow three sometimes contradictory rules in the case of an accident: assist the injured, remain at the scene so as not to destroy the evidence, and notify the PSB. In practice, large crowds that gather around the scene of an accident will automatically draw the attention of the PSB and prevent the driver from leaving the scene. And in the event of serious injury to a pedestrian, obtaining medical assistance should take precedence over the requirement not to move the motor vehicle.

The PSB immediately conducts an investigation of the accident, measur-

TAXES ON PASSENGER VEHICLES IMPORTED BY FOREIGNERS INTO BEIJING

(all percentages based on vehicle's CIF value)

	Joint venture*	Joint venture employee	Representative office	Representative office employee
Customs Duty	120%	—	120%	200%
Import Adjustment Tax (IAT)	80%	—	80%	—
Consolidated Industrial and Commercial Tax (CICT)	5%	—	5%	—
Local CICT surcharge	1%	—	1%	—
Vehicle Purchase Surcharge (VPS)	15%	15%	15%	15%
Special Import Consumption Tax (SICT)	¥40,000			
Road Maintenance Tax (RMT)	¥80 per ton per month			
License Plate Tax (LPT)	¥120 per year			

* Joint ventures in Beijing are exempt from Customs Duty, IAT, CICT, Local CICT Surcharge, and SICT if the imported vehicles were contemplated within the original investment made by the parties, except for taxi fleets owned by hotel or office joint ventures, for which the normal taxes apply to all imported vehicles.

SOURCE: Laurence W. Bates

ing skidmarks to determine the speed at which the vehicle was traveling, questioning witnesses, and obtaining a statement from the driver. If the driver does not speak Chinese, he or she should immediately call a friend who does, since a signed transcription of the driver's statement to the police will be required before leaving the station. The PSB will ultimately issue a report assessing the relative liability, which PICC usually does not challenge. In many instances, PICC does not even contact the PSB official who prepared the report. To demonstrate humanitarian concern—and also give the PSB a good impression before it issues the liability report—the driver should probably visit the injured pedestrian or bicyclist in the hospital.

Before receiving the police report and within 10 days of the accident, an insured party should submit a claim to PICC, which will compare the report against the PSB's for inconsistencies. Since PICC assesses damages itself to vehicles, a car owner should undertake repairs only at centers specifically authorized by PICC. Many foreigners have said that although PICC usually pays claims in a reasonable amount of time, it is not

Registering a new car is fairly easy: The first step is to turn in a foreign driver's license for a Chinese permit, along with a photograph, health certificate, and evidence of residence in China. In Shanghai, the driver is required to take a basic examination either orally or in writing, in English or Chinese.

receptive to negotiation on the amount of payment. Likewise, the PSB seldom listens to criticism of its apportionment of liability—although many foreigners are so relieved to settle their cases, they prefer not to challenge the PSB.

Backseat driving

If the prospect of owning or driving a motor vehicle seems daunting, or if it is practically impossible, an expatriate may consider hiring a driver for his or her personal car. Another option is hiring a taxi long-term, with the terms of hire to be negotiated directly with the driver. A personal driver may be hired through the Foreign Enterprise Service Corp. (FESCO), at a cost of about \$200-250 a month, plus personal accident insurance to cover the driver's injury or death.

One option now apparently available is to rent a car on a daily, weekly, or monthly basis. First Rent-a-Car Co. of Beijing claims to offer this service at rates of about \$55 per day, to any foreigner with a valid Chinese or international driver's license. The OMV, however, claims that since the international driver's license has no validity in China, and that since a non-resident cannot obtain a Chinese driver's license, First Rent-a-Car is probably not technically permitted to rent cars to tourists. PICC confirmed the OMV's position.

Despite the tribulations of car ownership in China, the freedom of mobility is well worth the trouble. 完

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Unisys Crafts a High-Tech Partnership

Reto Braun

In the process of establishing a cooperative venture to manufacture and market computers in Yunnan Province, Unisys Corp. encountered a set of problems that high-tech companies have come to expect in China: shifting parameters in the business and regulatory environments, lack of marketing sophistication on the part of the Chinese partner, weak infrastructure and high costs, and, in some cases, inadequately skilled labor.

Now, five years after entering the partnership, Unisys is facing a greater challenge, brought on by economic retrenchment following the political unrest. The May-June protests themselves caused little disruption at the factory, Yunnan Electronic Equipment Factory (YEEF), because of the factory's distance from Beijing and the relatively few orders it had to fill in the capital city. Tightening of economic controls may have mid-term effects, however. Following the Tiananmen incident, the Ministry of Machine Building and Electronics Industry (MMEI) asked YEEF to revoke the factory's contract with its management company, the Beijing-based Stone Group Corp., because of Stone's involvement in the protest movement. The venture must now manage itself. In addition, individual export licenses for US technology and equipment are now necessary, since plans to implement a distribution license system were canceled following the imposition of trade sanctions directed against China's military. High-technology equipment is carefully scrutinized to determine if it has military applications. Orders may also slow, as China's economy retrenches. In the banking industry, the main customer for YEEF workstations, purchasing appears to

be on hold, pending an expected reshuffling of State spending priorities. However, in May YEEF received its biggest order yet, for workstations valued at ¥24 million (\$6.47 million) to be supplied to the Bank of China.

Despite political unrest and economic uncertainty, this order still stands and is keeping the factory busy, suggesting that retrenchment has not kept all Chinese buyers from following through on purchases. In fact, projects prioritized by the Chinese government seem to be proceeding smoothly.

Moving into the market

Burroughs and Sperry—the companies that merged in 1986 to form Unisys—began selling equipment to China in 1979. The companies established Chinese subsidiaries—with offices first in Beijing and then, in 1985, in Shanghai—supported from Hong Kong. Unisys began considering a cooperative venture while making numerous direct sales of major mainframe computer systems to high-profile institutions: Air China (formerly CAAC), large oil-exploration sites, banks, government ministries—especially the Ministry of Aeronautics and Astronautics, the Academy of Sciences, and large, mostly State manufacturers. As of yearend 1988, the total installed value in China of Unisys equipment was approximately \$70 million. While making these sales, Unisys still needed a way to market microcomputer-based workstations in China without incurring the costs that

Reto Braun is president of the Pacific, Asia, and Americas Division of Unisys Corp. This article was adapted from a March 16, 1988 speech at Duke University.

direct marketing to such geographically dispersed customers would entail. Unisys also anticipated correctly that foreign regulatory pressures would add to the difficulty of importing finished microcomputers into China. Thus, the company concluded that a local assembly, manufacturing, and marketing arrangement would be the most effective way to get access to the market.

The arrangement would also allow a Chinese partner to obtain advanced technology from a reputable company, along with the advantage of marketing a "foreign" product that would appeal to Chinese consumers more than a wholly domestic one. The cooperation is a partnership without equity participation—Unisys sells parts and provides testing equipment and training, while YEEF supplies labor, facilities, sales, and service.

After considering proposals from several interested factories, Unisys selected as its venture partner YEEF, a modern, efficient factory equipped with US and Italian manufacturing technology and located in Kunming, Yunnan's capital city, at the terminus of the old Burma Road. Under the agreement concluded in 1984, the US company would supply microcomputers in a two-phase program, first importing complete sets into China and testing and distributing them from the Yunnan site. Later, when the Yunnan operation had grown large and experienced enough, Unisys would import microcomputers in kits to be assembled and resold. Such an arrangement would allow China to strengthen its computer capability, while Unisys acquired a position in the Chinese market without the expense of building a manufacturing plant.

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Unisys has made sales in China to banks, manufacturers, oil-exploration sites, and government ministries.

About two years elapsed between initial discussions and the first shipments of microcomputers. Considerable time was needed to select a Chinese partner, and then Unisys had to overcome several bureaucratic hurdles. High-tech activities in China require supervision, monitoring, coordination, and permission from several State agencies, in YEEF's case including the State Science and Technology Commission, the Administration of Computer Industry, and the State Economic Commission. The Unisys negotiations involved four entities: YEEF; a provincial trading authority; the China National Instruments Import and Export Corp. (INSTRIMPEX), a State trade authority for high-tech matters; and a State-run consulting organization. Although these organizations generally cooperated with one another, negotiations were time-consuming. For example, special coordination was required to avoid conflict with a Chinese competitor, so products

would not be duplicated.

Clearing export hurdles

US export-control policies and regulations, designed to protect national-security interests, also posed difficulties for Unisys's early export operations to China, and recent months have seen a further tightening of controls. The microcomputers that Unisys wanted to export—the company's B25 family of intelligent workstations—had been developed three or four years earlier, were well-established in domestic and Far Eastern markets, and fell under the Green Line of equipment that may be freely exported to China. The difficult regulatory issue was tracking the product's endusers, whose identity is one of the cardinal issues involved in granting a US export license to products destined for communist countries. With a large mainframe sale, Unisys could clearly identify the organization that would use the system—even many of the individ-

uals who would use it. But in this case, YEEF planned to resell Unisys micros throughout China to buyers whose identities could not be known in advance. This was potentially a serious stumbling block to obtaining a US export license.

The following solution was worked out with the export control authorities in Washington, DC: First, the factory had to agree to sell the product only for civilian applications. Second, the factory was required to record the identity of each Chinese purchaser and periodically report it to Unisys. Unisys would make the lists available to Washington in turn. This solved the export problem for the moment, but Unisys still had to get its export license through the Coordinating Committee on Multilateral Export Controls (COCOM)—adding at least two months to an already lengthy licensing process. Finally, in July 1985, Unisys had the required clearances, including the US export license. The first shipment of com-

puters arrived in Yunnan in September 1985.

Identifying endusers enabled Unisys to avoid some of the long delays experienced by other high-tech companies in June, when the Bush Administration banned sales to the Chinese military and sales of technology on the State Department's Munitions Control List. Because Unisys could prove its product reached no military endusers, it was not subject to the ban, which affected some other non-military high-tech equipment. The export-approval process has slowed down, however, and Unisys has experienced some delays.

In August, Unisys entered a new stage of the project and will soon be exporting completely knocked-down, state-of-the-art microprocessors for YEEF to assemble. Permission to export this complex technology required further discussion with the US export-control agencies.

Positioning the product

Marketing Unisys microcomputers in China posed several difficulties. To begin with, Chinese managers at times overestimate their readiness for a high-tech venture and underestimate the rigors of production, quality assurance, marketing, and use and maintenance of advanced products. China's infrastructure, skills, and technical education are uneven and at times inadequate to support high-technology goods. The company also experienced some problems of quality control in initiating local production. For example, workers tended to be ignorant of the damage done to computer chips by static electricity. They handled equipment carelessly, and the factory did not enforce proper grounding procedures for assembly line workers to protect components from damage.

More important, Unisys came to realize that the Chinese partners lacked modern marketing experience and know-how. Positioning a specific microcomputer in the marketplace relative to both imported and locally produced offerings was, indeed, a new challenge for the Chinese partners, who were unfamiliar with market mechanisms and promotional techniques.

Unisys workstations are rather sophisticated and cannot be compared

or confused with personal computers, which cost much less. For example, one of the product's key features is its ability to handle clusters of workstations, as in a large banking system. To accurately position and sell the B25 requires a marketing organization capable of articulating the difference between a stand-alone personal computer and a sophisticated workstation. A well-developed and informed customer base is also needed. In 1988 the venture profited from its management company, Stone, which had a considerable sales network of 100 sales offices.

Unisys and YEEF marketing personnel have now been brought together to achieve a balance of local market knowledge and expertise in the product itself as well as marketing techniques, which were virtually unknown on the Chinese side. Unisys has also involved the YEEF group in marketing workstations into some large mainframe system installations.

Language and logistics

Unisys found that many of the Chinese coming to US locations for training understood far less English than was required. Fortunately, Unisys employs many Chinese expatriates able to handle interpretation and translation, but training time had to be extended as much as 50 percent to allow for interpretation. The language problem was somewhat exacerbated by insufficient technological preparedness.

Doing business in China, and particularly Yunnan, posed major logistical problems, because the rural telephone system is woefully inadequate (*see p. 18*), and time differences exacerbate the communications problems. Until just recently, the factory managers had to travel across town to a provincial office in order to send or pick up telexes from Unisys in the United States. Progress is being made, however. Recently YEEF management announced that permission had been granted for the installation of a telex system at the factory. Even though the telex communicates only as far as the Unisys Beijing office, it represents an important step forward.

Changing ground rules

Throughout its experience in

China, Unisys has experienced rapid and sometimes arbitrary changes in the rules governing business. During the two years in which Unisys discussed, negotiated, and signed the agreement, for example, the Chinese authorities decided that adequate local capability had been achieved for manufacturing 8-bit microcomputers and stopped permission for imports of 8-bit systems. The YEEF microcomputer was a 16-bit machine, so Unisys continued with its plans, but before long, imports of fully assembled 16-bit systems were also restricted. Luckily, YEEF and their Unisys counterparts had anticipated this development and developed a plan for early progression to the assembly of parts and subassemblies—rather than the importation of assembled units—as a next step of technology transfer.

Soon the company heard reports that the Chinese were on the verge of adopting a much stricter policy attaching punitive duties to the import of 8- and 16-bit subassemblies. Pressured to use as many locally produced components as possible, Unisys now had to go back to Washington, DC to work out a basis for a manufacturing (parts and components) license. The application was approved in good time, reflecting what was then a steady liberalization of US export controls for China.

Still other unpredictable changes make the YEEF venture more challenging. First, the authorities have regularly tightened or eased the supply of foreign exchange to the factory and have altered the criteria and conditions for obtaining it. Second, significant changes in duty rates during the course of the YEEF project have affected both the cost to the factory of importing Unisys equipment and its resale prices. These factors in turn have caused delays in YEEF's ability to obtain letters of credit, without which it cannot receive shipments. This often resulted in either high inventories or none at all, an expensive way to schedule a plant.

While policies and regulations appear to change arbitrarily, however, Chinese officials are not intractable. In early 1985, for example, China became alarmed at the large quantities of personal computers flooding the market. Suddenly, a 40 percent

"adjustment duty" was imposed on microcomputer imports. Since the Unisys contract had been signed with YEEF in 1984, Unisys protested to Beijing and succeeded—after well over a year—in obtaining for the YEEF partner a 50 percent reduction in both the adjustment surcharge and the usual 15 percent industrial and commercial tax for 1986. That at least erased the unexpected disadvantage imposed on the young venture.

Moving too far too fast

Even before the current manufacturing program for 16-bit microcomputers has reached its full strength, the Science and Technology Commission, which is roughly equivalent to the US Office of Technology Assessment, has pressured the State Council to discontinue all 16-bit programs and move to 32-bit systems. However, 16-bit systems will have a significant role in China's market for some time to come. The pressure to upgrade comes less from a realistic assessment of needs than from a reflexive tendency to insist on the latest technology for its own sake. In

China, this tendency has resulted in wasted resources in a wide range of industries, where the newest technology is often too sophisticated for the labor force and infrastructure already in place.

All these changes—from 8 bits to 32 bits, and from complete units to partial units to components and parts—have occurred in roughly three years. This rate of change is not compatible with the complex process of assimilating technology, nor with the development of markets, nor, above all, with the simple business requirement of getting a reasonable return on investment. Investments in tooling and training for rapidly changing, successive levels of technology cannot quickly be recovered, much less turn a profit. High-tech businesses require high capital-to-labor investment and need to amortize expensive tooling and training, requiring greater market stability than a company selling consumer products might need. Chinese workers and officials must learn to allow more time for the maturation and reasonable progress of their tech-

nical and business infrastructure.

Steps to stability

After its rough start, the YEEF venture has found its niche selling to the computerized banking market. Unisys has several strong foreign competitors in computers, but none that specializes in workstation applications. Despite China's economic and political troubles this year, 1989 total sales are not expected to be far off plan. Sales in 1990 may begin slowly, however. The US export-licensing process will doubtless remain lengthier than it was before June, while in China, political wrangling over spending priorities may put buying plans on hold. But unless China freezes its banking modernization, which seems unlikely, the YEEF venture should show strong sales of workstations. The real question is not whether sales can be maintained, but whether China's economy and regulatory environment, as well as US and COCOM export regulations, will make it feasible for Unisys to diversify into new areas of China's computer industry.

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The ABCs of Going to School in China

Children need not leave the US educational environment behind

Julie Ann Dakin

Families moving to China have two persistent worries: Will school-age children come home after two or three years away and find they have fallen many grades behind their classmates in schoolwork? And will they miss the routines and activities of their hometown schools? But parents leaving for China need not fear their children's education will remain in suspended animation during the family's time abroad. Several excellent international schools now educate English-speaking children in each of the three major cities in China where most expatriates reside: Beijing, Shanghai, and Guangzhou.

Families moving to small communities in remote areas will find other educational programs available for their children. Some communities have small schools; the Shenyang American Academy, for example, in 1988-89 had four students attending classes in a two-room apartment in Shenyang. For brief periods, children may study at home using books and course assignments brought from school districts at home, or they may follow correspondence courses, such as the Calvert System. These options, however, may require parents or other expatriates hired as tutors to take the place of a teacher and more formal schooling environment.

Although the foreign community in China remains smaller than before June 4, many families have returned and are picking up where they left off. Enrollment at the International School of Beijing, which administrators had expected to drop after the June violence by 50-100 students, to about 200, stood at 284 students in September. The Shanghai American School had 39 students enrolled, as expected, and the American

School of Guangzhou had 35 students.

Education, American-style

The International School of Beijing, the Shanghai American School, and the American School in Guangzhou are all independent, coeducational day schools that generally follow an American curriculum, including basic courses in reading, math, science, and social studies from kindergarten through the eighth or ninth grade. Computer education has also become part of each school's curriculum, and students use computers in the classroom and in computer labs. Each school incorporates activities and curricular material relevant to students of various nationalities and which also reflects the Chinese culture in which the students live. Schools offer regular classes in art, music, drama, physical education, and Chinese culture and language. Bigger schools, such as Beijing's, naturally provide the most varied academic programs and activities.

All instruction and textbooks in the three international schools are in English, and most of the texts are purchased in the United States. Non-native speakers of English may have to take an English as a Second Language (ESL) proficiency test before being admitted to the school, and the principal makes the final decision to admit or reject an applicant depending on the ESL test results, the child's age and previous education, and the number and

needs of other children in the classroom. While each school has an ESL teacher on staff, the time available for individual students is limited. Parents often hire tutors to assist non-native speakers of English with their school work and to provide additional language instruction. Beijing has many different schools available for children of various nationalities, but the situation is more difficult for foreign children elsewhere; Shanghai, for example, has educational programs in only three languages: English, Japanese, and German.

Classes in international schools tend to be small, making for a demanding learning environment and allowing students to get individual attention. In 1988-89 Shanghai American School's smallest class had five students and the largest 12. Class sizes at the International School of Beijing averaged 16-18 students, with a limit of 22 per class, and each class has an aide available to the teacher. Such low student-teacher ratios allow students to receive a great deal of personal attention, leading them to perform better academically than students in classes of 30-40 in US public schools.

Experienced expatriate staff

As enrollment has grown and schools have expanded their facilities, staffing has also increased, and schools are demanding higher qualifications for their teaching staff. Currently all full-time teachers are certified and experienced; only part-time positions are occasionally filled by non-certified teachers. At the Beijing school in 1988-89 14 faculty positions were filled by overseas hires contacted through education conferences such as the European Council of International Schools or the

Julie Ann Dakin, M.Ed., was principal of the Shanghai American School in 1988-89 and has worked for many years as a teacher and counselor in US elementary schools.

International School Notebook

Beijing

International School of Beijing

Jiangtai Road

Dongzhimenwai 100004

Beijing, China

Principal: Richard Chesley

Enrollment: 284 students

Grades: pre-kindergarten-grade 9

Staff: 28 full-time, eight part-time teachers

Tuition: Pre-kindergarten (half-day program):

\$3,000; Kindergarten-grade 9: \$6,250

The International School of Beijing recently moved to a large new building at the Lido Centre on the outskirts of Beijing, where facilities include 22 classrooms, two music rooms and a drama room, an art room, two science labs, a library, computer lab, home economics room, and a gymnasium. ISB offers special instruction to non-native speakers of English and to children with learning disabilities.

Shanghai

Shanghai American School

c/o American Consulate General, Shanghai

Department of State

Washington, DC 20521-4100

Principal: Michael Williams

Enrollment: 39 students in pre-kindergarten-grade 8

Staff: seven full-time, four part-time teachers

Tuition: Pre-kindergarten (half-day) \$4,000;

Kindergarten-grade 8 \$9,000

The school is in a newly renovated two-story building at the No. 3 Girls' Middle School in northwest Shanghai, with 10 classrooms, a computer and science laboratory, an art room and an audio-visual and music room, a library, and a room for physical education as well as shared use of a track and field and gymnasium.

Other schools in Shanghai:

- a German school operated by Shanghai-Volkswagen at the Yandang Apartments for 6-8 children. Contact Gunter Plombeck at the German consulate

- a Japanese elementary and a junior high school with 85 students last year aged 6-15 and studying with Japanese teachers. Contact Yasushi Okuyama, 6464 Xin Humin Lu, Shanghai

Guangzhou

American School of Guangzhou

c/o US Consulate General, Box 100

FPO San Francisco 96659-0002

Principal: Norm Aune

Enrollment: 35 students in kindergarten-grade 8

Staff: Two full-time, nine part-time teachers

Tuition: \$8,500

Operating from three classrooms, an office, a library area, and two smaller rooms for music and art at the Garden Hotel Office Tower, the school was established in 1981 by the business community and the US consulate. In 1988-89 the school's 32 students included 16 Americans and eight Japanese, and nine of 10 staff members were American.

Other schools in Guangzhou:

- a French school with 17 students last year, operated by Peugeot International

Other Regions

- **Shenyang American Academy:** With four students in 1988-89, this school operates out of a two-bedroom apartment adjacent to the US consulate. Tuition is \$7,000 for kindergarten-grade 6, \$8,000 for grades 7-8

- **Shekou International School:** Three full-time teachers worked last year with 13 students at this school, which was founded for the children of oil-company employees and is supported by the ACT (Agipe, Chevron, and Texaco) conglomerate. Tuition varies with enrollment

For more information:

- **The US Department of State Office of Overseas Schools** also has information about schools throughout the world. Contact Dr. Edward Mannino, director of Overseas Schools, or Dr. Vince McGugan, assistant regional education officer for East Asia

Home Study

- **The Calvert School** offers a program of study by correspondence at costs from \$215-598 per year. Address: 105 Tuscany Road, Baltimore, MD 21210

Teacher Overseas Recruitment Conference, with housing, travel, and other benefits provided in the employment package. Overseas hires allow schools to fill specialized positions and maintain continuity in educational programs. The schools in Shanghai and Guangzhou recruit only an administrator-teacher couple from abroad, while all other teachers are recruited locally, often from among spouses of people already employed in China. Locally hired teachers earn \$18,000-23,000 per year without housing or travel allowances, and those able to accept either a part-time or full-time schedule or willing to consider a job assignment outside of their specialty will find many opportunities for employment in China's international schools.

Seals of approval

Three main indicators of quality can guide parents concerned about the education their children will receive at an international school in China: accreditation and affiliations, standardized test scores, and reports from former students. The Shanghai, Beijing, and Guangzhou international schools have received accreditation from the US-based Western Association of Schools and Colleges, based on an evaluation by a team of visiting educators who review the school's academic programs, inspect facilities, and examine the library, classroom, and teaching resources. Accreditation must be renewed every few years. The schools also belong to various international educational associations, such as the East Asia Regional Council of Overseas Schools, fostering communication with other international schools in the region and providing conferences and workshops for teachers and administrators. Information and teaching materials are regularly provided to the schools by the US State Department's Office of Overseas Schools, which can also help parents select a school abroad.

Perhaps a more accurate reading comes from scores on the Iowa Test of Basic Skills, administered annually to grades 2-9 at the three schools, indicating that students from international schools in China score at or above grade level in courses in every area of the curriculum, including math, science, reading, and social studies. Feedback from students who have returned to the United States

after attending schools in China also indicates a fairly easy and positive adjustment. The Shanghai American School sends "exit questionnaires" to non-returning students to be filled out after entering a new school, with questions about social adjustment, academic placement, and overall adjustment to a new community. The academic results to date have been very positive, with all children placed at grade level and many with more advanced skills than their US peers.

Children leaving China sometimes have difficulty adjusting to larger schools at home, which can seem socially overwhelming. However, while overseas, many learn to make friends quickly. Younger children tend to make the social re-entry more easily; teenagers may feel more out of touch with their peers.

Cross-cultural perspectives

The three schools are enriched by the international makeup of their student bodies, with 32 nationalities represented in Beijing's 1988-89 enrollment of 292 students, while Shanghai American's 49 students in 1988-89 encompassed 12 nationalities. Students at the school can thus exchange ideas, values, and customs with classmates from around the world, while special studies and holiday observances focusing on a particular nationality develop awareness and sensitivity to similarities and differences among cultures. School-organized celebrations, geared toward the majority American students but involving traditions from other cultures, also draw the international community together and provide children with the months of holiday anticipation and preparation which they associate with holidays at home. Studies and celebrations focusing on a particular nationality help students develop awareness of the similarities and differences among cultures.

Every student participates in the Chinese history and culture program and takes classes in the Chinese language. To supplement classroom learning, schools arrange field trips to cultural or historic sites and invite guest speakers, artists, and performers. The Beijing school has a large and well-developed Chinese culture program that includes extended study trips outside Beijing. Many families choose to supplement the school's Chinese studies with private lessons in Chinese language, art,

and music.

Even with private lessons, most foreign students will find that their school in China offers fewer extra-curricular activities than would an American school. Beijing International has organized several clubs and holds four major sports meets throughout the year. The smaller schools offer few extra-curriculars, however, with offerings dependent on the interests and skills of community volunteers.

Students with a particular skill, whether in sports, music, or art, often make an easier adjustment coming to a new school in China, since they can make an immediate contribution. Parents can help their children adjust by volunteering at the school to organize activities, such as sports teams, field trips, or guest lectures.

Problems away from home

Students who need tutoring or other special assistance will find limited resources available in China. Schools have few teachers trained in special education, and diagnostic tools and teaching materials geared to students with disabilities are scarce. Parents of a child with exceptional needs should thoroughly investigate the local school before coming to China and evaluate whether resources are adequate.

Some students may have no disability, but their academic progress has been hampered by frequent moves, and they are unable to adjust to yet another change of academic program. Other students develop insecurities and emotional difficulties from the demands of repeated readjustment to new environments. Parents may travel often, leaving the children with caretakers, while strained family relationships or job frustrations are magnified overseas, and the resulting tensions can affect a child's performance in school. Parents who enjoy being in China, seek extracurricular activities for their children, and make contact with the foreign community do much to promote their children's happiness, while parents who dislike China may find their discontent reflected in their children.

Boarding and home study

China's international schools do not offer educational programs throughout high school—the Beijing

school goes through grade 9, and the Shanghai and Guangzhou schools stop after grade 8. Teenagers, who tend to be highly concerned with their social environments, may also want to attend bigger schools. Thus, parents of older children must make difficult decisions about their schooling. Japan offers the closest boarding schools for a family based in China; Hong Kong's high schools are for day students only. Some parents may decide to send children to boarding schools or have them live with friends or family while attending day school in the United States to provide more exposure to extra-curricular activities, arts or sports programs, better access to laboratory and computer facilities, or a wider range of social contacts.

Completing school work through correspondence may be the best option for a younger child without access to a more formal school or one who is reluctant to live away from home. Calvert School Inc. in Baltimore, MD offers correspondence courses to students in all subjects from kindergarten through grade 8.

Students receive books, materials, lessons, and tests from the Calvert School and send back work for grading and comment. Students receive certificates indicating completion of a certain grade after finishing the required coursework. The work is designed to fill a school year, though those working independently may complete a course ahead of schedule.

Weighing alternatives

Occasionally families choose to enroll their children in Chinese schools, though the coursework would be very difficult for children with no formal training in speaking, reading, and writing Chinese. These schools also tend to use highly traditional teaching styles. For adaptable children, however, immersion in the Chinese educational system can help develop language skills and enable them to make friends with Chinese peers.

For some foreign families in China, selecting a school is not easy. US corporations and government organizations almost always pay tuition at international schools for the children

of their China-based employees, but self-employed foreigners may find the \$4,000-9,000 tuition far too costly. For other parents, a posting to a remote location may mean choosing between separating the family, with children living and attending school in Beijing, Shanghai, or Guangzhou with one parent, and isolating children at home. Very young children may attend Chinese nursery schools or stay with nursemaids, learning Chinese fast enough to enjoy Chinese playmates. But older children and adolescents need both academic challenge and the company of their peers.

Contrary to what parents might fear, the education a child receives in an international school in China may be even better than US schooling, with smaller classes, individualized instruction, good resources, and qualified teachers. Parents planning to live far from China's expatriate centers, however, must carefully weigh the benefits of their children's exposure to a new culture against the dangers of loneliness and longing for home. 完

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The Balance of Payments After Tiananmen

Can conservative leaders maintain the export momentum China needs?

David L. Denny

The political crisis of Beijing's spring and its bloody aftermath will increase pressure on China's already tight balance of international payments. Reduced foreign-exchange income from tourism, bond sales, and other decreased capital flows will no longer offset the large merchandise trade imbalance of 1988-89 that resulted from 1988's inflationary economic policies. As a result, China is not likely to increase imports during the government's transitional "readjustment plan" period (1989-91) that will bridge the last year of the Seventh Five Year Plan (FYP) with the first two years of the Eighth FYP.

China does not face imminent financial crisis, however, unless it is unable to avoid a repetition of last spring's upheaval. Increasing repayments of earlier debt obligations, combined with payments for the sharp increase in 1988 and 1989 trade deficits could produce short-term liquidity problems. However, China's financial position and foreign-exchange reserves remain strong enough to weather the current storm. In fact, in the months following the Tiananmen incident, the yawning trade deficit has narrowed dramatically; exports and imports were nearly balanced in the third quarter. Foreign-exchange reserves appear sufficient to cover the anticipated net deficit on current and capital accounts during the remainder of 1989 and 1990.

China's longer-term economic future depends on a wide array of plausible political scenarios. On one hand, liberal economic and political reformers could regain power, leading to a gradual restoration of confidence in China's open international economic policies. On the other hand, it is more likely that the conservative trend will deepen, cutting short important domestic and

international reforms and weakening China's ability to earn foreign exchange, attract foreign capital, and support growing imports in the 1990s.

Between the two extreme scenarios lies a plausible—if inelegant—middle road. This strategy, which current Chinese policy-makers clearly favor, envisions increased control over many important aspects of the domestic and international economic sectors. Economic reforms would not be negated but modified, curtailed, and in a few cases, eliminated.

If China keeps to this political middle road in the Eighth FYP (1991-95), a modest export growth rate of 5-7 percent will be sufficient to maintain international creditworthiness and support a 5.5-7.5 percent import growth rate in the early 1990s. At about 6 percent growth, 1995 imports would top the projected 1989 figure by about \$25 billion. Nevertheless, this dramatic decline in import growth rate—from 14 percent in the 1980s and 17.6 percent between 1978 and 1988, the decade of reform—would represent a significantly reduced role for foreign participation in China's economic strategy.

Before Tiananmen: growing debt

Even before June 4, Chinese and foreign analysts had noted that China would soon need to significantly increase exports or reduce the growth of imports (*see p. 55*). International debt—allowed only during the last decade—was growing rapidly (*see p. 55*). Even more troubling, the system for deciding which organizations could undertake foreign debt was in disarray. Local governments and industrial enterprises had obtained loans and bond financing, but no one, in or out of China, was quite

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NEW FOREIGN DEBT STATISTICS

As this article goes to press, a Chinese official has released new information on China's debt that includes more detail than had ever before been made available.

This article's statistics and analysis were not changed to reflect the new numbers, for two reasons: First, while the Chinese statistics are a welcome addition to our knowledge of China's international economic situation, details are not yet available on the data's sources and definitions. The series covers only four years, where a longer series would be useful to test the internal consistency of the debt series with the rest of the information about the balance of payments. In addition, in releasing such statistics, Chinese officials in the past have appeared to omit some types of debt that would be included according to standard Western economic practices.

Second, although the recently released statistics on debt seem somewhat low, they are not greatly out of line with those used for this analysis. Debt statistics used in this article rely primarily on series data issued by the Organization for Economic Cooperation and Development (OECD) and the Washington-based Institute of International Finance, which uses the OECD series but modifies them with information from the Bank of International Settlements, the World Bank, Commercial Bank, and other sources. —DL

sure how much of the debt enjoyed the "sovereign risk" backing of the central government.

China's finances were far from crisis, however. In the short term,

CHINA'S BALANCE OF PAYMENTS: 1982-88

(\$ millions)

	1982	1983	1984	1985	1986	1987	1988
I. CURRENT ACCOUNT	5,827.0	4,486.6	2,511.3	-11,416.5	-7,037.8	301.3	-3,802.0
Merchandise (net)	4,249.3	1,989.4	14.4	-13,122.3	-9,140.2	-1,660.3	-5,313.3
Exports (FOB)	21,125.2	20,706.5	23,905.3	25,108.3	25,755.8	34,734.4	41,054.0
Imports (FOB)	-16,875.9	-18,717.1	-23,890.9	-38,230.6	-34,895.9	-36,394.7	-46,369.3
Services (net)	713.2	827.4	521.7	622.4	1,749.2	1,951.2	1,254.9
Tourism (net)	777.2	887.3	982.0	936.1	1,222.4	1,458.6	1,613.9
Shipping (net)	38.6	-93.0	-172.2	-365.5	-362.5	-340.1	-533.2
Investment Income (net)	377.6	1,157.7	1,533.4	840.7	-23.5	-214.6	-161.0
Gratis Transfers	486.9	512.1	441.8	242.7	376.6	225.0	419.5
II. CAPITAL ACCOUNT (NET)	206.4	648.9	239.9	6,709.4	5,251.1	6,003.1	7,132.2
Long-Term Capital	406.3	1,170.6	1,608.2	4,439.1	7,545.8	5,792.3	7,056.0
Private Investment	385.3	543.1	1,123.4	1,030.6	1,424.2	1,669.4	2,343.7
Bond Borrowings (net)	40.8	20.3	83.0	763.5	1,607.2	1,051.0	876.2
Official Borrowing and Bank Loans	513.4	785.7	936.9	1,219.4	3,213.3	1,157.9	3,894.7
Short-Term Capital	-199.8	-521.7	-1,368.4	2,270.3	-2,294.7	210.8	76.2
III. CHANGE IN RESERVES	-6,324.9	-4,787.0	-1,857.3	4,672.6	2,030.8	-4,843.8	-2,236.1
IV. ERRORS AND OMISSIONS	293.7	-349.6	-890.7	35.5	-248.7	-1,481.9	-1,094.1

SOURCE: *Balance of Payments Statistics*, Vol. 39, Yearbook, Part 1, 1988, International Monetary Fund; *China Economic News*, September 11, 1989
NOTE: Negative signs attached to changes in foreign exchange reserves indicate increased reserves

China faced a cash-flow problem caused partly by the 1988-89 trade deficit but exaggerated by an impending bulge in repayment obligations on international loans coming due in the early 1990s. In the longer term, policy-makers recognized the need to reduce the trade deficit to allow normal capital inflows to finance the long-term merchandise trade deficit.

The latest data on China's trade and balance of payments through the first half of 1989 support the prevailing view that despite these troubling problems, China remained in solid financial shape. In 1988, China suffered a deficit of \$5.3 billion on merchandise trade account. About \$1.5 billion of the 1988 deficit was offset by income from services (largely due to net tourist revenues) and gifts (gratis transfers), leaving a current-account deficit of \$3.8 billion. An inflow of over \$7 billion in foreign capital was more than enough to offset the 1988 current-account deficit, and over \$2 billion was added to China's foreign-exchange reserves.

The capital inflow consisted mainly of a net gain of private foreign investment worth \$2.3 billion and another nearly \$2 billion from multilateral loans (primarily from the World Bank) and bilateral aid (mostly from Japan's Overseas Economic Cooperation Fund or OECF). Private

and governmental capital—which are both ideal for China since they carry either no repayment obligation or repayment at very low interest rates—was sufficient to offset the current-account deficit, while other capital inflows (bonds and commercial loans) allowed China to build its foreign-exchange reserves.

The picture worsened somewhat in the first half of 1989. At an annualized rate, China seemed to be facing a current-account deficit of about \$10-12 billion, up more than

100 percent over the 1988 figure. While preliminary first-half 1989 financial reports indicate that long-term capital inflows would probably have exceeded the \$6-7 billion level of recent years, China's balance of payments problems were becoming serious.

Conservative financial policy

Despite these problems, China's fundamental financial position is still sound. For example, China's total debt amounts to \$40-50 billion,

CHINA'S DEBT IN INTERNATIONAL PERSPECTIVE

		Debt: exports	Debt service ratio	Months of foreign exchange cover
China				
1987		0.923	11.22%	4.8
1988		0.949	9.49	4.3
1989		0.962	10.76	2.7
1990		1.000	11.79	2.1
India	1986	3.600	38.57%	3.7
Hungary	1987	2.379	N/A	3.7
Korea	"	0.905	36.36	0.9
Mexico	"	4.555	47.55	5
Philippines	"	2.832	27.71	1
Poland	"	4.568	N/A	2.6
Brazil	"	4.303	35.19	2.5
Malaysia	"	1.115	19.52	4.8

SOURCE: OECD publications, IMF *International Financial Statistics*, and Institute of International Finance estimates.

READJUSTMENT PERIOD'S POTENTIAL IMPACT ON BALANCE OF PAYMENTS

(\$ billions)

	1988	1989	1990	1991
I. Current Account	-3.8	-7	-5	-2
Merchandise	-5.3	-7	-4	-2
Exports	41.1	46	49	53
Imports	-46.4	-53	-53	-55
Services and other income	1.5	0	-1	0
II. Capital Account	7.1	3	2	4
III. Change in Foreign Exchange Reserves	-2.3	5	2	-2
IV. Errors and Omissions	-1.1	-1	-1	0

SOURCE: David L. Denny

NOTE: Negative signs attached to changes in reserves indicate *increased* reserves

roughly comparable to annual foreign-exchange earnings from exports of goods and services. A debt-to-export ratio of 1:1 is well below the danger zone, which starts with ratios of 2:1 or more. The main problem with the debt is less its total size than its structure and recent growth. China has always tended to emphasize short-term debt, which carries higher repayment obligations. Moreover, much of the debt has been denominated in yen, whose appreciation against the dollar has greatly increased the real cost of China's repayment obligations, since most of its foreign-exchange income is denominated in depreciating dollars.

Nevertheless, Chinese officials have expressed the fear that the growth of debt signifies their loss of control over local governments and organizations that have been borrowing from abroad. Encouraged by the World Bank and International Monetary Fund (IMF), China has taken steps in the last 18 months to recentralize control over various forms of debt.

Such a quick response to growing debt suggests that Chinese officials take a darker, more pessimistic view of the balance of payments than warranted by the numbers alone. The reasons for China's conservative international financial policy are generally well known; they include historical experience with indebtedness, the influence of Marxist-Leninist ideology, the current leadership's

experience with pre-1949 foreign economic relationships, and the example of heavily indebted Third World countries.

The events of 1989 will only increase the official Chinese obsession with the economic and political risks of indebtedness to the capitalist world. This seems inevitable as long as senior leaders, such as Party General Secretary Jiang Zemin, blame China's turmoil on "hostile forces at home and abroad [which] created this turmoil to overthrow the leadership of the CPC, subvert the socialist system, and turn China into a bourgeois republic and an appendage of big Western capitalist powers once again."

The balance of payments contains signs that Chinese officials had lost control over an important part of the economy—which is surely disturbing to conservatives. This is most clearly revealed in the Errors and Omissions item in the balance of payments—a catch-all category for financial transfers that could not be counted or tracked down. China's current and capital-account balances for 1987 and 1988 indicate that the country received almost \$10 billion more than it used, but counted foreign-exchange reserves increased only \$7 billion, leaving about \$2.6 billion in "lost" receipts.

Although much can be attributed to inaccurate estimates of trade and capital flows, many of the lost receipts represent successful attempts

by Chinese organizations to hide foreign exchange outside of China beyond the reach of central planners.

Finally, Chinese planners also worry about their lack of control over local governments, foreign trade corporations, and national industrial ministries, which have until recently had increased authority to borrow funds beyond those needed for normal trade financing. Such decentralized borrowing accounted for capital inflows of between \$500 million and \$1 billion in 1982-86 but grew to \$2 billion in 1988.

When bilateral and multilateral financing is combined with the rapid buildup of debt by organizations with weaker links to the central government, China emerges as a substantial borrower on the international capital market. China's debt grew from only \$7.8 billion (or 69 percent of foreign-exchange reserves at that time) in 1982 to around \$45 billion (about three times foreign-exchange reserves) in mid-1989 (*see* box).

Readjustment: 1989-91

With China exerting greater control over borrowing and imports, the readjustment period will be lean for exporters to China, foreign investors seeking access to foreign exchange, and Chinese companies looking to import equipment and technologies. China's imports have experienced rapidly declining growth since mid-1989, and the growth rate for the full year will probably be around 15 percent. Imports are expected to flatten out at the 1989 projected level or dip somewhat during 1990 (*see* table 3). Exports, which have grown rapidly since the Tiananmen incident, with third-quarter growth of 18.9 percent over third quarter 1988. At the end of the first three quarters, exports were up 10.7 percent over the same period in 1988 and will probably show growth of about 11 percent for all of 1989. Because of the trends, the merchandise trade balance for the third quarter actually registered a surplus, greatly diminishing the large deficit expected for 1989.

In 1990-91 export growth may slow to 7 percent, in a cooling economy with less emphasis on foreign trade. The greater preoccupation with maintaining a non-inflationary domestic economy will also keep China from putting too much pressure on exporters. Moreover,

key exporting sectors, such as energy (coal and oil) and textiles, are experiencing shortages that will make it difficult to increase the shares of domestic output devoted to exporting enterprises. Finally, with economic reforms generally stalled, planners will be largely unable to introduce the kinds of mechanisms that might stimulate domestic or foreign joint ventures to expand exports.

Income from services is expected to decline substantially from a net balance of \$1.5 billion in 1988 to zero in 1989, dropping to -\$1 billion in 1990 before returning to rough balance in 1991. Tourism alone will account for a large share of the decline, and overall service income will decline further because of higher interest payments on outstanding debt.

Capital inflow will be reduced throughout the period but is not expected to drop off entirely. Income from bond sales will probably disap-

pear, because investors will demand higher returns, while Chinese borrowers are unlikely to accept higher rates in the current political environment. Non-sovereign entities will also find it harder to obtain financing, both because central-government approval will be more difficult to obtain and because commercial banks have become more skeptical in lending to such units.

Much of 1990's capital flow will come from committed investment funds that have not yet been utilized, meaning that much private, bilateral, and multilateral capital will continue to be disbursed over the next three years (see p. 55). While most investors have halted plans for new investments, many with projects underway will proceed, though more slowly than planned. Some new projects will also continue, particularly in offshore oil exploration—which is immune to many of the problems that affect joint ventures selling to Chinese—and investments targeting for-

eign markets. Some commercial bankers have also made new syndicated loans and are considering others, though banks will undoubtedly proceed with greater caution than before, lending largely to borrowers fully backed by the Chinese government and at higher profit margins than in the past.

Under this scenario, China would have to keep its imports from growing in 1989-91. Even if Chinese officials can prevent imports from rising, foreign-exchange reserves will probably drop to about \$10-12 billion by the end of 1990—a level that in the past has stimulated Chinese planners to introduce tight new restrictions on imports. China reacted swiftly in 1986 and 1987 when foreign-exchange reserves fell to \$11.5 billion, even though import levels were much lower than they are today.

What the future holds

Even assuming that China will

Forecasting Imports

To understand the factors that will determine China's future import levels, a simple model was constructed relating imports to the following key variables: China's exports, foreign-exchange reserves, net income from services (such as tourism), private foreign investment, and additional debt that Chinese leaders will be willing to undertake.

Net income from services and from private foreign investment are assumed to recover 1988 levels by 1991 and grow very slowly thereafter, and Chinese leaders are assumed to move quickly after 1991 to maintain foreign-exchange reserves equal to three months' worth of imports.

Export growth and foreign debt cannot be estimated as confidently, since they could vary widely depending on economic and political factors. These critical influences on future import levels are permitted to vary in the model within fairly restrictive parameters. The model allows for three different debt strategies. In the first scenario, China's foreign

1990s IMPORT GROWTH UNDER VARIOUS DEBT/EXPORT STRATEGIES

Alternative export growth rates	Alternative Debt Strategies		
	Debt = .5% of exports	Debt = 1.5% of exports	
5%	5.2%	5.7%	7.8%
7%	6.8	7.4	9.6
9%	8.4	9.2	11.6

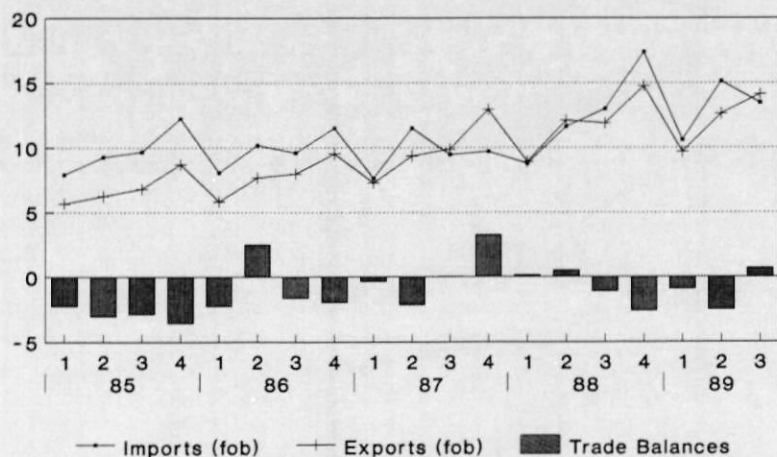
SOURCE: David L. Denny

debt would continue in rough parity with exports, as has been the case in the recent past. The second debt strategy would represent a step backward, assuming that Chinese conservatives will grow wary of high debt to foreigners. By 1995, that strategy would result in a debt equal to only 50 percent of China's exports in the same year. The third debt strategy assumes that China will continue the trend of recent years and gradually increase foreign debt to about 150 percent of exports in 1995. While none of these scenarios can be dismissed, it is most likely that China will seek to

maintain its debt at about the same level.

The model also presents three alternative growth rates for exports during the 1991-1995 period: 5 percent, 7 percent, and 9 percent. The lowest export growth rate suggests that exports will only barely keep pace with the economy as a whole and fall well below the industrial growth rate. On the other hand, a 9 percent rate is well above the projections for economic growth of the economy as a whole and seems unlikely to be attained. The most reasonable range for export growth appears to be 5-7 percent. —DL D

CHINA'S QUARTERLY MERCHANDISE TRADE (\$billions)



neither embrace a vigorous new reform program nor retreat into isolation or chaos, the implications for possible import growth vary widely. If China can expand exports by 9 percent per year and is simultaneously willing to increase foreign debt in relation to exports, imports could grow by nearly 12 percent per year. Though still less than the 17.6 percent growth of 1978-88, that rate would be impressive, resulting in 1995 imports of \$100 billion (in constant 1989 dollars), nearly twice the 1988 figure (see p. 51).

On the other hand, if exports grow by only 5 percent per year (about as rapidly as the domestic economy and well below the industrial growth rate), and Chinese officials follow a more conservative foreign-debt strategy, 1995 imports would total only \$62.8 billion, showing 16 percent growth in the 1989-95 period. Such a drastic slowdown in China's trade with foreign countries would be only the outermost manifestation of a general freeze on China's economic relationship with the outside world.

The most reasonable scenario envisions that China will maintain its current debt-to-export ratio, adopting policies that ensure an export growth rate of 5-7 percent. Under these conditions, import growth would vary between 5.7 percent and 7.4 percent, with imports reaching \$70-80 billion in 1995 (in constant 1989 prices).

This scenario implies significantly less involvement in the world economy for China, which will cease to be

the rapid growth market for goods and services it has been for a decade. But while the Chinese market will grow less rapidly, demand for imported goods and services will expand by about 40 percent or \$20-25 billion—still representing an important and growing market for exporters.

Even relatively modest 5-7 percent export growth may not be easy to obtain. Chinese leaders will have to provide appropriate incentives to exporters, which will be difficult in an atmosphere of reversion to conservative planning techniques. The alternative to such incentives is to commandeer large amounts of materials for production, which could satisfy the immediate requirements

but would stultify trade in the long term.

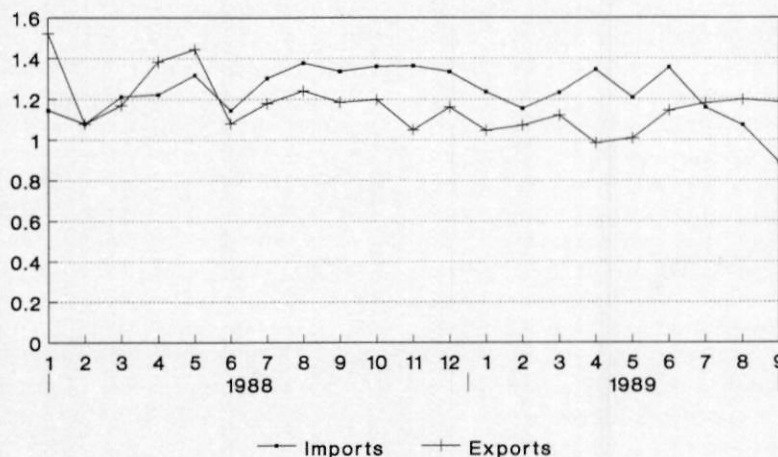
Intangible losses

The economic fundamentals of China's debt and balance of payments suggest that immediate financial crisis is unlikely. Foreign-exchange reserves, debt, and debt-servicing capability should remain within acceptable limits for the foreseeable future, with only a major cutoff of international loan capital precipitating a crisis. Such a cutoff could occur if China sees another "Beijing spring," or if a large number of Chinese units default on their loans.

But even in view of China's current financial stability, the damage inflicted by Tiananmen is very serious. Without the political turmoil, 1995 imports probably would have exceeded \$100 billion, because capital inflows would have been even higher than those that can now be assumed. But now China will be fortunate to import \$75 billion worth of goods and services by 1995. The loss of \$25 billion or more of imports in 1995—one-third of 1995's expected total—is one rough measure of the economic costs of the Tiananmen incident.

Even forgetting Tiananmen's social and political costs, the import loss greatly understates the real economic cost, because it neglects the incalculable benefits of international economic exchange for the increased efficiency and productivity of China's domestic industries. 完

GROWTH OF CHINA'S MONTHLY TRADE (Month-on-Month Comparison)





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CHINA'S BALANCE OF PAYMENTS: 1982-88

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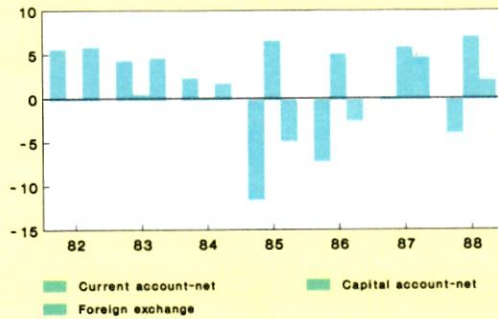
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I. CURRENT ACCOUNT	5,827.0	4,486.6	2,511.3	-11,416.5	-7,037.8	301.3	-3,802.0
A. Goods, Service, and Income	5,340.1	3,974.5	2,069.5	-11,659.1	-7,414.4	76.3	-4,221.5
1. Merchandise (net)	4,249.3	1,989.4	14.4	-13,122.3	-9,140.2	-1,660.3	-5,313.3
Exports (FOB)	21,125.2	20,706.5	23,905.3	25,108.3	25,755.8	34,734.4	41,054.0
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2. Services (net)	713.2	827.4	521.7	622.4	1,749.2	1,951.2	1,254.9
Shipping (net)	38.6	-93.0	-172.2	-365.5	-362.5	-340.1	-533.2
Tourism (net)	777.2	887.3	982.0	936.1	1,222.4	1,458.6	1,613.9
Credits	843.5	940.7	1,131.6	1,249.9	1,531.0	1,845.2	2,246.8
Debits	-66.2	-53.5	-149.7	-313.7	-308.5	-386.6	632.9
Labor Contracting	75.1	96.2	86.1	91.4	199.4	50.4	34.7
Other	-177.7	-63.1	-374.1	-39.6	689.8	782.3	139.5
3. Investment Income (net)	377.6	1,157.7	1,533.4	840.7	-23.5	-214.6	-161.0
Profits	18.8	31.0	2.1	-8.1	-15.3	7.8	-7.6
Interest	-9.9	666.0	823.3	416.3	-82.1	-279.3	-216.6
Bank Payment	368.7	460.7	699.1	432.5	73.9	56.9	63.2
B. Gratis Transfers	486.9	512.1	441.8	242.7	376.6	225.0	419.5
1. International Organizations	26.5	52.4	47.2	21.3	95.0	24.6	42.0
2. Aid and Donation	-69.6	23.5	90.2	50.8	28.2	-49.1	-39.1
3. Overseas Remittances	537.7	443.6	314.7	176.7	204.1	162.9	124.7
4. Other Payments	-7.7	-7.5	-10.3	-6.1	49.3	86.6	291.8
II. CAPITAL ACCOUNT (NET)	206.4	648.9	239.9	6,709.4	5,251.1	6,003.1	7,132.2
A. Long-Term Capital	406.3	1,170.6	1,608.2	4,439.1	7,545.8	5,792.3	7,056.0
1. Direct Foreign Investment	385.3	543.1	1,123.4	1,030.6	1,424.2	1,669.4	2,343.7
Foreign Investment in China	429.5	636.1	1,257.7	1,659.1	1,874.7	2,314.6	3,193.7
China's Investment Abroad	-44.2	-93.0	-134.3	-628.5	-450.5	-645.2	-850.0
2. Bond Borrowings (net)	40.8	20.3	83.0	763.5	1,607.2	1,051.0	876.2
3. China's Foreign Aid	-472.5	-388.0	-302.4	-103.6	145.5	152.6	-729.0
4. Official Borrowing	513.4	785.7	936.9	1,219.4	3,213.3	1,157.917	3,894.7
International Organizations	3.3	72.7	183.5	531.0	720.3	620.0	696.0
Foreign Governments	-42.0	-3.2	41.0	202.1	1,497.0	949.1	1,139.6
Departmental Borrowing	553.1	716.2	713.4	486.3	997.2	-411.2	2,059.2
5. Bank Loans	-547.6	31.0	46.1	2,170.8	1,604.9	1,665.5	670.6
6. Other (Payment for Processing, Leasing)	486.9	178.5	-278.8	-641.7	-449.3	96.0	-0.2
B. Short-Term Capital	-199.8	-521.7	-1,368.4	2,270.3	-2,294.7	210.8	76.2
1. Official Resident Sector	-162.3	-220.2	-474.6	68.0	509.2	-112.5	197.8
2. Bank Borrowing	44.2	-23.5	-8.2	2,517.0	-3,289.6	218.5	436.9
3. Other	-81.7	-277.9	-885.6	-314.8	485.7	104.7	-558.5
III. CHANGE IN RESERVES	632.9	4,787.0	1,857.3	-4,672.6	2,030.8	4,843.8	2,236.1
A. Gold Reserves	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B. Hard Currency Reserves	-6,372.3	-3,991.6	-1,665.6	4,740.6	1,358.5	-4,861.9	-2,312.1
C. Special Drawing Rights	46.4	-134.7	-96.4	-26.4	-30.5	18.1	54.0
D. Use of IMF Funding Credit	0.0	-481.1	0.0	0.0	701.6	0.0	0.0
E. Reserve Position in the IMF	0.0	-179.6	-95.3	-42.6	0.0	0.0	22.0
IV. ERRORS AND OMISSIONS	293.7	-349.6	-890.7	35.5	-248.7	-1,481.9	-1,094.05

SOURCE: *Balance of Payments Statistics*, Vol. 39, Yearbook, Part 1, 1988, International Monetary Fund; *China Economic News*, September 11, 1989

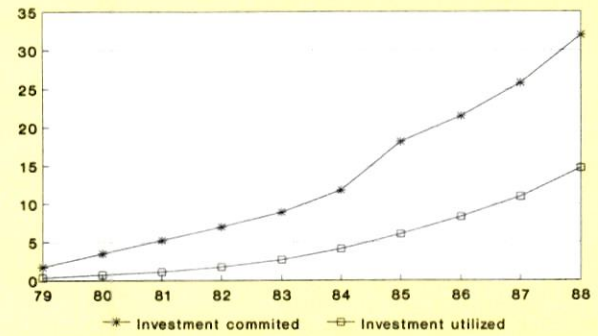
NOTE: Negative signs attached to changes in reserves indicate increased reserves

STATISTICAL HIGHLIGHTS

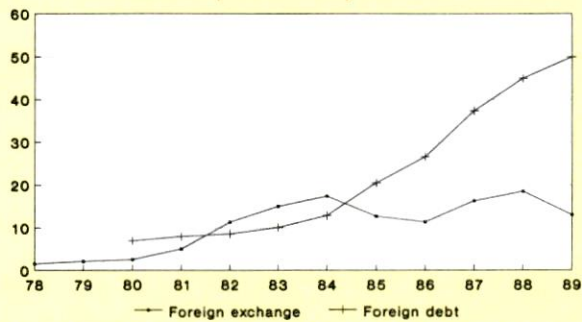
BALANCE OF PAYMENTS (\$ billions)



FOREIGN INVESTMENT: COMMITTED & UTILIZED (\$ billions)

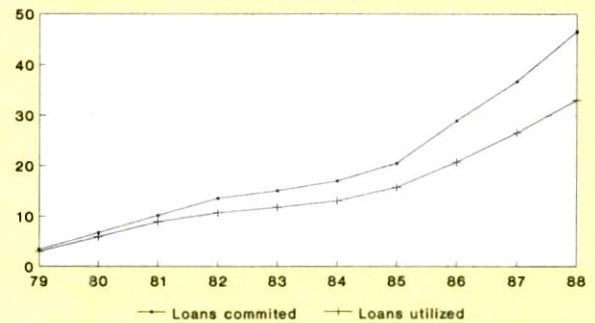


FOREIGN EXCHANGE RESERVES/FOREIGN DEBT (\$ billions)



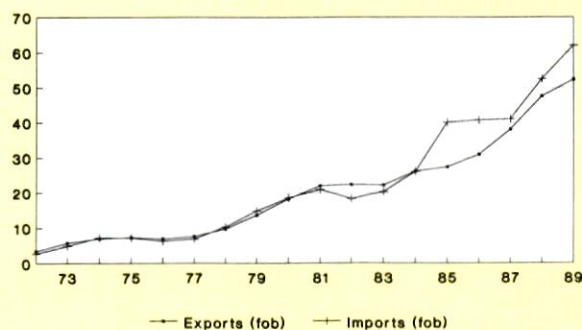
SOURCE: OECD publications, World Bank Debt Tables 1988-89, Institute of International Finance, Inc. *1989 figures are estimated

FOREIGN LOANS COMMITTED & UTILIZED (\$ billions)



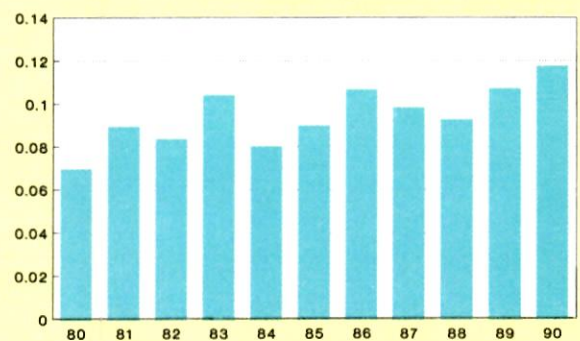
*cumulative loan totals

MERCHANDISE TRADE (\$ billions)



SOURCE: Chinese Customs statistics

DEBT/SERVICE RATIO Repayments = Export + Services income



CHINA BUSINESS

中外貿易

Joel Greene

The following tables contain recent press reports of business contracts and negotiations exclusive of those listed in previous issues. For the most part, the accuracy of these reports is not independently confirmed by *The CBR*. Contracts denominated in foreign currencies are converted into US dollars at the most recent monthly average rate quoted in *International Financial Statistics (IMF)*.

US-China Business Council member firms can contact the library to obtain a copy of news sources and other available background information concerning the business arrangements appearing below. Moreover, 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 the Business Information Center at The US-China Business Council.



SALES AND INVESTMENT THROUGH
September 15, 1989

Foreign party/Chinese party
Arrangement, value, and date reported

Agricultural Commodities

China's Imports

South Korea

Will trade 1,500 tonnes mackerel for 300 tonnes frozen yellow corvina. 8/89.

USSR/Xinjiang

Will trade mutton for 2,000 tonnes beef. 7/89.

US

Sold 100,000 tonnes wheat. \$14.25 million. 6/89.

Investments in China

NA (Japan)/Fulai Cold Storage Co., Yantai, Shandong

Plans to establish vegetable farming base to produce 30-50,000 tpy taro, asparagus, and green beans. \$5 million. 8/89.

Abbreviations used throughout text: BOC: Bank of China; CAAC: Civil Aviation Administration of China; CAIEC: China National Automotive Import-Export Corp.; CATIC: China National Aero-Technology Import-Export Corp.; CCTV: China Central Television; CEIEC: China Electronic Import-Export Corp.; CEROILFOODS: China National Cereals, Oil, and Foodstuffs Import-Export Corp.; CHINALIGHT: China National Light Industrial Products Import-Export Corp.; CHINAPACK: China National Packaging Import-Export Corp.; CHINATEX: China National Textiles Import-Export Corp.; CHINATUHSU: China National Native Produce and Byproducts Import-Export Corp.; CITIC: China International Trust and Investment Corp.; CITS: China International Travel Service; CMC: China National Machinery Import-Export Corp.; CNCCC: China National Chemical Construction Co.; CNOOC: China National Offshore Oil Corp.; CTIEC: China National Technical Import-Export Corp.; ETDZ: Economic Technological Development Zone; ICBC: Industrial and Commercial Bank of China; INSTRIMPEX: China National Instruments Import-Export Corp.; MLI: Ministry of Light Industry; MMEI: Ministry of Machinery and Electronics Industry; MOE: Ministry of Energy; MOTI: Ministry of Textile Industry; MPT: Ministry of Posts and Telecommunications; NA: Not Available; NDSTIC: National Defense, Science, Technology, and Industry Commission; NORINCO: China North Industries Corp.; SEZ: Special Economic Zone; SINOCHEM: China National Chemicals Import-Export Corp.; SINOPEC: China National Petrochemical Corp.; SINOTRANS: China National Foreign Trade Transportation Corp.; SITCO: Shanghai Investment and Trust Corp.; SPC: State Planning Commission.

Agricultural Technology

China's Imports

China Resources Artland Co. Ltd. (HK)

Will supply 10,000 cu m grade B larch gmelini/pinus sylvestris through World Bank Northern Irrigation Project. \$1.4 million. 7/89.

China Resources Machinery Co. Ltd. (HK)

Will supply urea reactors through World Bank Fertilizer Rationalization Project. \$1.05 million. 7/89.

Davy McKee Lakeland Co. (UK)/CNCCC

Signed contract to build chemical fertilizer plant in Xuanwei, Yunnan. \$1 million. 7/89.

Delkor Ltd. (UK)

Will supply phospho-gypsum belt filter through World Bank Fertilizer Rationalization Project. \$1.1 million. 7/89.

F. Peroni and Sons (Italy)

Will supply carbamate pumps through World Bank Fertilizer Rationalization Project. \$1.27 million. 7/89.

Hong Chun Development Ltd. (HK)

Will supply 5,000 tonnes normal carbon rolled steel sheets through World Bank Northern Irrigation Project. \$3.3 million. 7/89.

Nuovo Pignone SpA (Italy)

Will supply carbon dioxide compressors through World Bank Fertilizer Rationalization Project. \$6.1 million. 7/89.

Investments in China

Joint Aquatics Development Co. Ltd. (HK)

Established wholly foreign-owned Beijing Joint Biology Technology Development Co. Ltd. to produce feed additives. 8/89.

NA (Thailand)/Quanzhou Lysine Factory and Foodstuff Industry Co., Fujian

Established Quanzhou Daquan Lysine Co. Ltd. joint venture to produce 3,000 tpy lysine for feed. \$19.2 million (¥71.5 million). 8/89.

NA (Taiwan)/Taicung County, Jiangsu

Established Suzhou Xiyuan Fishing Machine Manufacture Factory to produce oxygen boosting machines. 7/89.

Roussel-Uclaf SA (France), affiliate of Hoechst AG (FRG)

Signed joint-venture agreement to establish plant to produce 100 tpy deltamethrine, an insecticide. 7/89.

NA (FRG and Switzerland)/Shouguang County, Shandong

Established pork production joint venture involving commodity pig farms, fodder processing, and slaughter. \$131.3 million (DM260 million). 5/89.

China's Investments Abroad

NA (Indonesia)/Shanghai Foreign Economic and Cooperation Co.

Signed contract to invest in 40,000 tpy calcium superphosphate plant. 8/89.

Other

Kofu City (Japan)/Chengdu, Sichuan

Provided seeds and technical aid to establish Friendship Grape Orchard. 6/89.

UN Development Program/Guangshan County, Henan

Will provide aid for goose- and duck-breeding project. \$400,000. 6/89.

Chemicals, Petrochemicals, and Related Equipment

China's Imports

Hui'an People's Association (HK)/Hui'an County, Fujian

Will set up 100,000 tpy chloro-soda plant. \$40.2 million (¥150 million). 9/89.

Hainan Zhengda Investment Co. Ltd. (HK), subsidiary of Bufeng Group (Thailand)/MOTI and Hainan

Will build 450,000 tpy capacity ethylene plant. 6/89.

Investments in China

NA (US)/Huayuan Enterprise Development Service Co. and Nanhai Oil Service Corp., Shenzhen

Established Shenzhen Nanlin International Petrochemical Plant to produce polypropylene and liquefied petroleum gas. \$200 million. Registered capital: \$30 million. 8/89.

Changhua Enterprise Co. Ltd. (HK)/Tongguling Resources Development Co., Hainan

Established a joint venture to manufacture reinforced plastic products. \$322,000 (¥1.2 million). 6/89.

Lumus Crest (US), subsidiary of Combustion Engineering Inc. (US)/Zhong Yuan Petrochemical United Corp.

Will supply pyrolysis ethylene technology for polymer-grade ethylene plant in Henan. 6/89.

NA (Taiwan)/Self-employed Chinese businessman

Established Yuda Plastics Co. Ltd. in Changzhou, Jiangsu to produce molds and other plastic products. \$350,000. Registered capital: \$245,000. 6/89.

Chinese Investments Abroad

Marine Products Co. Ltd. (Kenya)/Baoding Synthetic Rubber Factory, Hebei

Established Kenya-Baoding Industry and Agriculture Development Co. Ltd. joint venture to produce synthetic rubber. (Kenya:51%-PRC:49%). 8/89.

Ministry for Production of Inorganic Fertilizer (USSR)/Xinjiang Organic Chemical Plant

Signed agreement to establish paint factory joint venture in Alma Ata, Kazakh SSR. \$4.9 million (¥18.56 million). 6/89.

Other

Switzerland

Will provide 6 percent loan for investment in viscose fiber project in Jiujiang, Jiangxi. \$36.9 million (SFr63.14 million). 7/89.

Construction Materials and Equipment

China's Imports

ODS Co. (US)

Will supply 8,000 tonnes steel for construction of Huangpu River bridge, Shanghai. 8/89.

Elin-Union AG (Austria)

Will supply electrical equipment for drinking-water treatment plants in Harbin, Suzhou, and Nantong. \$8.6 million (AS120 million). 6/89.

Fuller Co. (US)/CTIEC

Will supply equipment and services to modernize Xinjiang Cement Plant. \$1.14 million. 6/89.

Investments in China

NA (HK)/NA, Shenyang

Established Qianjin Steel Elbow Co. to produce pipe elbow joints. \$2.1 million. 8/89.

NA (HK)/Nanjing Glass Factory

Established Nanjing Jinling Glass Industry Co. Ltd. to produce plate glass. \$32.2 million (¥120 million). 7/89.

China's Investments Abroad

Kenya/Sichuan International Co.

Will establish joint venture to produce glass. \$13 million. 6/89.

Other

Denmark/Chifeng, Inner Mongolia

Will provide loan to construct white silicate cement plant with 48,000 tpy capacity. \$4.9 million (¥18.37 million). 7/89.

Consumer Goods

China's Imports

NA (FRG)/Qingdao

Will supply equipment and technology for bicycle production line. \$2.52 million (DM5 million). 7/89.

Investments in China

SSS Co. Ltd. (Japan)/Qiqihar Ice Skates Factory, Harbin

Established Qiqihar Ice Skates Industry Co. Ltd. 20-year joint venture to manufacture ice skates for export. \$2.64 million (¥9.81 million). (JP:40%-PRC:60%). 8/89.

NA (HK)/Jiangsu Garment Import/Export Group Corp. and Yizheng Garment Factory

Established Yizheng-Xinliji Leather Garment Co. Ltd. joint venture to manufacture high-quality leather garments. \$500,000. 8/89.

Edmin Corp. (US)/Tianhua Industrial Co. and Dalian No. 1 Organic Chemical Plant

Established Dalian Edmin Leather Co. Ltd. 10-year joint venture to process high-quality leather for export. \$10 million. (US:25%-PRC:75%). 7/89.

NA (Taiwan)/Shanghang County, Fujian

Established Rongfa Shoe and Leather Co. Ltd. to manufacture 200,000 pair leather, cloth, and sports shoes per year. \$107,000 (¥400,000). 7/89.

Samsung Co. Ltd. (South Korea)

Negotiating investment in Beijing refrigerator plant. \$60 million. 7/89.

NA (HK)/Anshan Liquefied Gas Steel Cylinder Factory, Liaoning

Established Anhui Lamps Enterprise Co. Ltd. to manufacture Christmas lights. 6/89.

NA (Taiwan)/Anshan Clock Factory, Liaoning

Established Hualian Clocks and Toys Co. to manufacture musical quartz clocks, travel clocks, and electronic toys. 6/89.

NA (Taiwan)/South China Aviation Enterprises Group

Established Guohua Electrical Home Appliances Co. Ltd. in Wuhan. \$1.6 million. 6/89.

China's Investments Abroad

California International Co. (US)/CHINALIGHT

Will set up Lianming Trade Co. joint venture to market shampoo and hair lotion. (US:60%-PRC:40%). 7/89.

Electronics and Computer Software

Investments in China

NA (US)/Anshan No. 2 Battery Factory, Liaoning

Established Anshan Yitaik Battery Co. Ltd. 10-year joint venture to manufacture nickel-cadmium batteries. \$2 million. 9/89.

Fuji Corp. (Japan)/Changjiang Computer Corp.

Will establish computer printer joint venture. 8/89.

E-Tech Iez Company (US)/Xuzhou Radio Factory, Jiangsu

Agreed to cooperate in producing nickel-cadmium batteries. 7/89.

Harada Industry Co. Ltd. (Japan)

Established Dalian Harada Industrial Co. Ltd., wholly foreign-owned enterprise, to manufacture car antennae and electric cable. \$20.8 million. 7/89.

Motorola Corp. (US)

Plans to establish wholly foreign-owned enterprise to manufacture electronic components in Tianjin. \$100 million. 7/89.

NA (Japan)

Established Sikai Computer Software Co. Ltd. joint venture to conduct research. \$124,000 (¥460,000). (JP:49%-PRC:51%). 7/89.

Other

Compagnie des Machine Bull (France)/INSTRIMPEX

Set up computer software and hardware maintenance center. 8/89.

Shanghai Wang Computer Industry Development Corp., a Sino-American joint venture/Great Wall Special Iron and Steel Corp., Sichuan

Will supply advanced computer system. \$1 million. 7/89.

Electronics (Consumer)

China's Imports

BSR International PLC (UK)/Shanghai No. 3 Radio Factory

Will supply equipment and technology for manufacture of stereo products and tape recorders. 8/89.

China's Investments Abroad

Kenya/Shenzhen Electronic Group Co.

Will establish joint venture to produce television sets and tape recorders. 6/89.

Engineering and Construction

China's Imports

UBM Overseas Ltd. (UK) and Honor Industrial (HK)/Jinming Housing Corp., Shanghai

Will supply kitchen units and sanitaryware for apartment complex in Hongqiao district. \$669,000 (£430,770). 8/89.

Nishimatsu Construction Co. (Japan)

Will construct tunnels and access shafts across Huangpu River through World Bank Shanghai Sewerage Project. \$6.1 million. 7/89.

Investments in China

Yim Shing Group (Thailand)

Plans to invest in construction of 55-storey building in Shenzhen. \$100 million. 7/89.

Other

World Bank

Will provide funding for Nanchang bridge construction. \$30 million. 7/89.

Irkutsk Oblast (USSR)/General Corp. of Construction and Development, Heilongjiang

Signed cooperation agreement for 19 construction projects in the USSR. \$3.2 million (SFr5.4 million). 6/89.

Finance and Banking

China's Imports

NCR Corp. (US)/BOC

Will supply automatic teller machines to branches in Guangdong. \$3 million. 8/89.

Other

Asian Development Bank/SITCO

Will provide loan to upgrade medium and small enterprises in Shanghai. \$100 million. 9/89.

Export Credit Co. (Finland)

Will provide 10-year interest-free loans to be used to finance industrial projects involving Finnish companies. \$34.9 million. 7/89.

National Credit Bank (France)

Will provide 30-year 2 percent loans for financing seven projects. \$123.5 million (FFr830 million). 7/89.

UN Development Program

Approved five-year assistance program focusing on family planning services. \$57 million. 7/89.

Food and Food Processing

China's Imports

EDB Biological Development Co. Ltd. (Belgium)/Sida Bio-engineering Industrial Development Co. and Sichuan International Economic and Technical Cooperation Co.

Will build a papaya prolease production line. 6/89.

Investments in China

NA (UK)/Qingdao Cereal Bureau

Established Ruby Food Co. to produce Western-style cakes and pastries. 8/89.

H.J. Heinz Co. (US)

Extended Henglian Food Co. joint-venture agreement from 30 to 50 years and will increase baby-food production capacity to 12,000 tpy. 7/89.

NA (Thailand) and NA (Indonesia)/Haikou Canned Food Factory and Shenzhen Baohua Co.

Will establish joint venture to produce 10,000 tpy coconut milk. \$4 million. 7/89.

USSR

Will invest in the Moscow Restaurant in Beijing and provide chefs and service staff. 6/89.

China's Investments Abroad

Leningrad Public Catering Bureau (USSR)/Shanghai Huating Group Corp.

Established Shanghai-Leningrad Co. Ltd., 20-year joint venture, to operate the Shanghai Restaurant featuring Sichuan and Cantonese dishes. 7/89.

Machinery and Machine Tools

Investments in China

Japan-China S.C. Co. Ltd. (Japan)/Beijing Municipal Conveyor Plant and MMEI's Crane Research Institute

Established Beijing East Conveyor Co. Ltd. to produce and market hanging strip band conveyors. 8/89.

Tongda Machinery Co. Ltd. (HK)/Nanjing No. 2 Compressor Plant

Established Nanjin Sanda Machinery Co. Ltd. joint venture to produce and market small air compressors and related equipment. \$800,000. 8/89.

NA (Japan)/Dalian Economic and Technological Development Co.

Will establish a 20-year joint venture to produce metal cutting machinery. \$3.4 million (¥490 million). (JP:60%-PRC:40%). 7/89.

Mighty Enterprises Inc. (US)/Yunnan Machinery Equipment I/E Co. Ltd. and Yunnan No. 3 Machine Tools Factory

Established Yunli Machinery Co. Ltd. to produce high-speed milling machines. \$1.59 million. 6/89.

Other

Strojimport Foreign Trade Corp. (Czechoslovakia)/CMC

Opened CMC-Strojimport Technical Center to provide consulting, technical training, installation, and repair services to users of Czechoslovakian machinery. 8/89.

Medical Equipment and Devices

China's Imports

Intermed Import/Export Corp. (DGR)

Supplied medical and dental equipment. 7/89

Bioanalytical Systems Inc. (US)

Received order for equipment. \$1 million. 6/89.

Other

World Health Organization/Ministry of Public Health

Will grant \$7 million for training health personnel and setting up health-care centers. 8/89.

Metals, Minerals, and Related Equipment

China's Imports

BHP (Australia)/Hunan

Will supply 500,000 tpy iron ore in exchange for steel. 7/89.

Investments in China

NA (Canada)/Jiangxi

Established Gongjia Rare Earth Co. Ltd. joint venture to process 200 tpy rare earths. 9/84.

International Iron and Steel Far East Service Co. (US)

Will set up plant at Wuhan Iron and Steel Works to process steel slag and recover scrap steel. \$7.5 million. 7/89.

NA (HK)/Shanghai Rare Metals Refinery and Machinery Installation Co., affiliate of China No. 1 Metallurgical Construction Corp.

Established Shenli Rare Metals Co. Ltd. joint venture to recycle and refine rare metals. 7/89.

Pacific Gem Co. Ltd. (Australia)/Changle County, Shandong

Signed agreement to jointly process sapphire. \$1 million. 6/89.

Packaging, Pulp, and Paper Equipment

China's Imports

Rauma-Repula Oy (Finland)/CMC, CTIEC, and Dezhou Furniture Materials Industrial Co., Shandong

Sign two contracts to supply equipment for cotton stalk shaving board factory, and equipment for urea-formaldehyde resin production. \$11.4 million (FM50.41 million). 9/89.

Edelmann-Formall (US)

Will supply continuous forms press. 6/89.

Valmet Paper Machinery (Finland)/Dadong Paper Mill, Zhanjiang

Will supply coated paper production line. \$13.5 million (FM60 million). 5/89.

Investments in China

NA (Japan)/Jinghua General Printing Factory, Beijing

Established Jinghua Printing and Packaging Co. Ltd. joint venture to process adhesive trademarks. 8/89.

South Korean businessman/Xingfu Paper Plant, Shandong

Established Ronghua Packaging Products Co. Ltd. joint venture to produce 800 tpy vacuum coatings. \$800,000. (SK:26%-PRC74%). 8/89.

Happy Continental Ltd. (HK)/Changxin Foreign Trade Co., Tianjin

Established Tianjin Shizhou Plastic Packing Products Co. Ltd. 15-year joint venture to produce plastic film packing bags. \$800,000. (HK:30%-PRC:70%). 7/89.

China's Investments Abroad

Stake Technology Ltd. (Canada)/Guangdong Enterprises Ltd.(HK based)

Sold 25 percent share of Quebec pulp mill. \$5 million (C\$6 million). PRC contracted to purchase 25,000 tpy pulp output for five years. \$90 million (C\$108 million). 7/89.

NA (US)/Sichuan Provincial Forest Products Co.

Agreed to jointly establish forestry development company in Papua New Guinea. 6/89.

Petroleum, Natural Gas, and Related Equipment

China's Imports

Compagnia Tecnica Internazionale Progetti, subsidiary of Bastogi-IRBS SpA (Italy)/CTIEC

Will construct natural gas treatment plant in Zhongyuan, Henan. \$23 million (Lira 33 billion). 5/89.

Other

Occidental Eastern Inc. (US), Ampol Exploration Ltd., and AGL Petroleum Ltd. (Australia)/CNOOC

Contracted to explore and develop oil resources in the Pearl River Basin. 9/89.

ARCO (US)/CNOOC

Received approval to jointly develop 56 sq km area of the Yingge Sea Gasfield that has estimated reserves of 100 billion cu m. 8/89.

General Sekiyu K.K. (Japan), affiliate of Exxon

Will refine 10,000 barrels Chinese crude per day on consignment. 9/89.

Pharmaceuticals

Investments in China

ICN Pharmaceuticals Inc. (US)/China National Medical Corp.

Will establish joint venture to produce ribavirin, an anti-hepatitis drug. \$25 million. Registered capital: \$5 million. 9/89.

American Enterprise Inc. (US)/Zhejiang Tian Tai Pharmaceutical Co.

Established Sino-American Pharmaceutical Co. Ltd. joint venture to produce lincomycin. \$13.7 million (¥51 million). 8/89.

Kanebo Pharmaceutical Co. Ltd. (Japan)/China Drug Material Corp., Foreign Medical Trade Corp., and Qingdao Drug Material Purchasing and Supply Station

Established Huazhong Pharmaceutical Co. Ltd. joint venture to produce traditional Chinese medicines. 8/89.

International Economic and Trade Promotion Committee and Italian Drug Therapeutic Center, a consortium of 12 pharmaceutical factories (Italy)/Shanghai Sine Pharmaceutical Laboratory

Signed agreement to invest in renovating Sine's old factory and constructing new factory that meets GMP standards. \$38 million. 7/89.

Meiji Pharmaceutical Co. Ltd. and Wanbang Trade Co. Ltd. (Japan)/Duobin Chemical Drug Co., Shantou

Established Huaming Medicine Co. Ltd. joint venture to produce anti-tumor drugs. \$3.22 million (¥12 million). 7/89.

Other

Bio-Science Laboratory Co. Ltd. (Japan)/State Family Planning Committee, Scientific and Technological Department

Signed agreement to jointly research immunological contraceptive vaccine for three years. 7/89.

Power Plants and Equipment

China's Imports

Hydropower and River Engineering Department (France)/Yunnan Power Technology Consultancy Co.

Will cooperate to expand capacity of Ximahe Hydropower Station. \$134.3 million (¥500 million). 6/89.

Investments in China

Fengnian Wind Power Co. and Dunhuang Enterprises Co. Ltd. (US)/China No. 2 Heavy Machinery Plant and Beijing Electric Machinery General Plant

Established joint venture to produce wind-driven power generation equipment. 5/89.

Property Management and Development

Investments in China

BITIC Co. (US)/Xinya Group and SITCO

Began construction of Hailun Hotel, a joint-venture operation in Shanghai. 8/89.

Italian Building Co. (Macau)

Will build and invest in 30 residential buildings in Zhuhai's western district. \$2.6 million (HK\$20 million). 8/89.

MGM Development Co. (US)/Tianjin ETDZ

Signed 70-year agreement to lease 5.3 sq km to develop as an industrial zone. MGM will initially invest \$300 million in construction of trade center. MGM will pay \$3.25 sq m annually. 8/89.

NA (Taiwan)

Established Fuzhou Xianshi Co., a wholly foreign-owned enterprise, to develop a 25,000 sq m shopping area. \$32.2 million (¥120 million). 8/89.

Concord Camera Corp. (US)/Wan Kong Economic Development Corp., Baoan County, Guangdong

Signed 25-year agreement to lease 60 million sq ft commercial and industrial property with rights to sub-lease to other companies. 7/89.

NA (HK)/Ningbo

Signed 15-year agreement to set aside 150,000 sq m for house, apartment, and villa construction to be sold mainly to overseas Chinese. 7/89.

Xiong Delong (US businessman)

Will invest in development of industrial zone for foreign companies in Meizhou, Guangdong. 7/89.

Hong Leong International Ltd. (Singapore)/Xiamen Tourism Corp.

Signed contract to construct and operate Xiamen Harborview Hotel. \$25.52 million (¥95 million). (SGP:70%-PRC:30%). 6/89.

Li Kashing (HK businessman)

Will invest in development of Futian International Industrial Village, Shenzhen. \$384 million (HK\$3 billion). 6/89.

NA (Taiwan)/Changjiang Computer Group

Will provide production technology, construction assistance, and operational assistance for the establishment of a science zone in Shanghai. 6/89.

Ships and Shipping

China's Imports

Navstar (UK)

Sold 600 2000S Satnavs navigational systems. 6/89.

Investments in China

Habatec-Sellhorn Container Engineering (FRG) and Kenwa Shipping (HK)/SINOTRANS

Will build and operate joint-venture factories in Tianjin and Qingdao to manufacture shipping containers. \$19.25 million. 8/89.

Neptune Orient Lines Ltd., MAP Services Pte. Ltd., and Sembawang Group (Singapore)

Signed contract for first phase of project to upgrade berth to container capacity in Shekou. \$5-7.5 million. 8/89.

Courtaulds Coatings (UK)/Shanghai Kai Lin Paint Manufacturing Co., COSCO, and CSSC

Established International Paint-Kai Lin 25-year joint venture to produce marine paints and off-shore coatings. \$5.38 million. (UK:51%-PRC:49%). 7/89.

Diesel Marine International Ltd. (UK) and Hoi Tung Marine Machinery Ltd. (HK)/COSCO and Guangzhou Shipping Co.

Established Nantong Diesel Co. Ltd. joint venture to repair ship machinery and equipment. \$1 million. 7/89.

NA (US) and NA (Singapore)/Shanghai Jiading Container Factory, Shanghai Jinjiang Navigation Co. Ltd., and Shanghai CHINATUHSU

Established Shanghai Taiping International Containers Co. Ltd. to manufacture 20-foot containers. \$9 million. (Foreign:60%-PRC:40%). 6/89.

Other

Encinal Terminals (US)/Port Authority of Nanjing

Agreed to extend Nanjing International Container Terminal Services Co. Ltd. joint-venture agreement from 15 years to 25 years. 6/89.

Odessa, USSR/Shanghai

Negotiating to establish cargo service between the two ports. 6/89.

Telecommunications

Investments in China

NEC (Japan)

Planning to establish joint venture in Tianjin to produce computer-controlled telephone exchanges. \$68 million. 5/89.

Other

Canada

Approved low-interest loan for purchase of telecommunications equipment. \$83.4 million (C\$100 million). 8/89.

Textiles

Investments in China

Embry Garment Co. Ltd. (HK)

Established wholly foreign-owned enterprise to manufacture women's undergarments. \$1.4 million (HK\$11 million). 8/89.

Gunze Sangyo Inc., Tomida & Co., and Muroya Inc. (Japan)/Liming High Grade Dress Factory, Shenyang

Established Shenyang Lifu Garment Corp. joint venture to manufacture men's clothing. \$2.1 million. 8/89.

Kuwayama Economic Group (Japan)/Changsha, Hunan

Established Women's Garment Corp. joint venture to manufacture women's clothing for export. \$145,000 (¥540,000). 8/89.

NA (Taiwan)/Wujing Textile Products Co., Jiangsu

Established Renzhong Textile Co. Ltd. joint venture to produce mohair knitting wool. \$1 million. 8/89.

Taiwan businessman

Established wholly foreign-owned Huasheng Co. Ltd. in Luoyang, Henan to manufacture clothing and bags. \$300,000. 8/89.

Xinsheng Commercial Firm (HK)/Nanjing No. 2 Knitwear Mill and Nanjing International Trust and Investment Corp.

Established 10-year joint venture to manufacture knitwear. \$1.14 million. 8/89.

Weida Electronics Co. (HK)/Cangxian County, Hebei, and Nanjing

Agreed to establish Huada High-Class Adhesive-Bonded Fabrics Co. Ltd. to manufacture adhesive-bonded fabrics for export. \$560,000. 7/89.

NA (HK)/Huangshi, Hubei

Will establish joint-venture knitting company. \$4.97 million. 6/89.

Transportation

China's Imports

Elin-Union AG (Austria)

Will supply 72 sets radio transmission equipment used on locomotives and in railway stations through World Bank First Railway Project. \$1.9 million. 8/89.

Pirelli SpA (Italy)/Qingdao No. 2 Rubber Co.

Signed contract to supply equipment and technology for production of steel-belted radial tires. Asian Development Bank will provide \$30 million loan for project. 8/89.

Shinwa Tsushinki Co. (Japan)

Will supply repeaters and portable transmitters through World Bank First Railway Project. 8/89.

Steyr Co. (Austria)/China Heavy-duty Automobile Industrial Enterprise Group Co.

Will supply spare parts for trucks. 8/89.

Yamato Kogyo Co. Ltd. (Japan)

Will supply 3,000 tonnes fishplate through World Bank Fourth Railway Project. \$1.9 million. 8/89.

Hong Chun Development Limited (HK) and Villares (Brazil)

HK will supply 3,000 tonnes deformed steel bars and 3,000 tonnes spring steel bars, sourced from Brazil, through World Bank Fourth Railway Project. \$3.1 million. 7/89.

Hong Chun Development Limited (HK) and Somisa (Argentina)

HK will supply 3,500 tonnes cold rolled steel, sourced from Argentina, through World Bank Fourth Railway Project. \$2.3 million. 7/89.

Hong Chun Development Limited (HK) and British Steel (UK)

HK will supply 800 tonnes silicon steel strips, sourced from UK, through World Bank Fourth Railway Project. \$1.4 million. 7/89.

Motokov Foreign Trade Corp. (Czechoslovakia)

Will supply 2,200 Tatra-815 heavy-duty trucks and spare parts. 7/89.

Romania/CMC

Will sell 20 diesel locomotives and spare parts. \$16.2 million. 7/89.

British Rail (UK)/Changchun Passenger Coach Factory, Heilongjiang

Supplied two passenger coaches and one sleeper coach as prototypes. 6/89.

Investments in China

Dunlop International Engineering Corp. (UK)/CNCCC and Chongqing Tire Plant

Will establish joint venture to manufacture steel-belted radial tires. \$30 million. 6/89.

Westland Industrial Corp. (US)/China Enterprise Corp. and Huadi Enterprise Corp., Shanghai

Established San Hua Refrigeration Transportation Co. Ltd. to provide refrigeration transport, cold-storage, and fast-freeze processing service. 6/89.

China's Investments Abroad

Hanley Investment and Real Estate Corp. (US)/Zhejiang International Trust and Investment Corp.

Established Jinmen Industry Co. Ltd. 10-year joint venture to produce glass granules for traffic sign reflectors. (50-50). 6/89.

Other

Aviation Maintenance Foundation International (US)/Aviation Times

Agreed to co-publish AMFI/Aviation Times Executive Guide, a bilingual product and services guide to China's aviation/aerospace industry. 6/89.

Miscellaneous

Investments in China

Techma International Ltd. (HK)/Shanxi Shareholding Group, Taiyuan

Will set up joint venture to manufacture cigarette filters. \$322 million (¥1.2 billion). 8/89.

Pankoa Investments (Australia)/Integrated Farm-Industry Commerce Enterprise Co., Beijing Yuntong Advertising Agency, and Badaling Forestry Farm

Established Jing Ao Great Wall Souvenir Co. Ltd. to design and produce souvenirs. \$322,000 (¥1.2 million). (50-50). 7/89.

Acesky Ltd., subsidiary of Mitsui & Co. (Japan) and NA (HK)

Established wholly foreign-owned cigarette filter manufacturing plant in Guangdong. (JP:90%-HK:10%). 5/89.

Other

Arencos, subsidiary of Swedish Match AB (Sweden)/National Light Industry Machinery Corp. and Shanghai Match Machinery Factory

Negotiating two joint ventures to be located in Wuhan and Shanghai to produce match-manufacturing equipment. 8/89.

Motovum Group of Publishers/Shanxi People's Publishing House

Signed cooperative publishing agreement for a two-volume picture album and other Chinese cultural books. 6/89.

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