

**U.S.-China
Trade Relations,
1983:
Six Essays**

**edited
by
Daniel H. Bays**

Conference and Colloquium Series, Number Two

**Center for East Asian Studies
The University of Kansas**

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Preface

In March and April 1983, the Center for East Asian Studies of the University of Kansas sponsored a "Colloquium on U.S.-China Economic and Trade Relations." This was made possible in large part through a National Resource Center grant from the United States Department of Education.

Six distinguished scholars presented public lectures in the course of the colloquium. Since their topics complemented each other very well, and since each presentation was timely and rich in insights, the Center for East Asian Studies has proceeded to publish the essays from which the public lectures were given. In the interests of rapid dissemination of these analyses of contemporary issues, I have not recast the essays into a common mold. They are presented here much as each author wrote them. Two of the essays have sources appended, the others do not. Interested readers will find these sources useful in pursuing further some of the topics covered by Dr. Clarke and Professor Marer. Likewise, the six statistical tables at the end of Dr. Clarke's essay provide a useful reference for points made by all of the authors.

Taken together, I believe that these essays provide both an excellent overview and a series of informed in-depth studies of U.S.-China trade relations and the economic realities which underlie them. Each has the virtue of providing some historical perspective as well as a description of the present scene. And each is balanced—none of the authors has an axe to grind on his particular subject. In the course of the volume, the major economic sectors where U.S. business has the greatest interest and potential in China relations are discussed—agriculture, energy, technology transfer, and investment capital. Yet the overriding importance of political relations is also kept in mind by all of the authors, and is particularly stressed by Professor Lampton in his concluding essay. Altogether, the essays elucidate a sound basis for optimism, as well as some valid causes for concern, regarding the future of U.S.-China economic and trade relations.

I wish to thank all six authors for their public presentations and for their cooperation in providing me the written essays with which to work. Thanks are also due to John Garland, and

especially to Marie Adams, for their assistance. Special thanks are due the China Council of the Asia Society for permission to use the material in Thomas Fingar's essay, which was originally written for the China Council. The content of these essays, of course, is the responsibility of each author, and does not necessarily represent the views of the U.S. Department of Education or the Center for East Asian Studies.

July, 1983

Daniel H. Bays
Center for East Asian Studies

THE US-CHINA ECONOMIC RELATIONSHIP: ENTERING THE SECOND DECADE

Christopher M. Clarke

*Introduction**

The economic relationship between the United States and the People's Republic of China is still in its infancy. After the establishment of the PRC in 1949 and the outbreak of the Korean War, the US and China entered a period of hostility and mutual distrust which has only begun to change since Richard Nixon's historic visit to Beijing in 1972. As in any relatively new relationship, and particularly one between great and proud countries, problems are inevitable. China and the United States have different national interests, different economic, social and political systems, and different domestic political pressures. Nevertheless, remarkable progress has been made in "normalizing" the economic component of the relationship during the last decade. This has not been an easy process, and painful steps lie ahead in pursuing its accomplishment.

This article briefly examines the role of foreign trade in the People's Republic of China, the policies on which it is based, and the historic magnitude, composition and direction of China's international economic activity. The article will concentrate on the Sino-American economic relationship since 1972, including the changing composition of US-China trade and problems encountered in expanding Sino-American intercourse. Finally, it will turn to the prospects for this relationship as the second decade of US-China trade begins.

* This article represents solely the opinions of the author. It does not necessarily represent the opinions of the National Council for US-China Trade.

RECENT PATTERNS IN CHINA'S FOREIGN TRADE

The role of foreign trade in China

The size of her territory, population, resources and domestic market would make it natural for foreign trade to be a relatively small component of China's overall economic activity.¹ This tendency has been reinforced since 1949 by two other factors. First is the residual role foreign trade plays in most centrally planned, non-market economies. Second is China's international conservatism growing out of both the communist and the Chinese heritage of the PRC's leaders.

The Chinese since 1949 have relegated foreign trade to a supplementary role in economic activity. As China's minister of foreign trade said in 1955, "Exports are for imports, and imports are for the country's industrialization."²

Despite its supplementary nature, China's foreign trade has been and remains an important element in her modernization plans and a vital link to the international economic system. In absolute terms, China's foreign trade has grown in an almost uninterrupted fashion every year since 1950. The two major exceptions, the aftermath of the Great Leap Forward (1960-1963) and the height of the Cultural Revolution (1967-1969), saw only a temporary disruption of this pattern. (Table 1)

By contrast, China's major trading partners and the composition of China's foreign trade have changed substantially over the last 30 years. Between 1952 and 1955, other communist countries accounted for about four-fifths of China's imports and more than two-thirds of her exports.³ After falling out with the USSR, this pattern changed. By 1962, non-communist partners totalled more than half of China's imports and 40% of her exports. The most striking example of this directional change is a comparison of US-China trade with Sino-Soviet trade in the period 1950-80. (Table 1)

China's import and export composition also changed during her first three decades. Under the First Five Year Plan (1953-7), China imported massive amounts of machinery, equipment and whole plant ("means of production").⁴ From 1953-60, these items accounted for more than 90% of China's imports. During the "three bad years" following the Great Leap, however, China was forced to import large quantities of food grain. Subsequently, "means of subsistence" occupied at least 15% of China's imports in all but one year, and in excess of 20% in 13 of the next 20 years. (Table 1) In recent years, as China has again looked abroad for assistance in modernizing her economy, manufactured goods and

machinery have accounted for 50-68% of Chinese imports (Table 2), but imports of foodstuffs remain substantial.

By contrast, between 1954 and 1974 less than one-third of China's exports consisted of industrial and mineral products (Table 1). This percentage now exceeds half. In 1981, manufactured goods and machinery alone made up more than 44% of China's exports. (Table 2)

When the dust of the Cultural Revolution cleared in the 1970s, Chinese economic leaders, and indeed the man on the street, began to see the damage that had been done to the economy. They began to realize that the world had passed them by, that their technology was not sufficiently advanced to raise the living standard of the people, provide for the national defense and develop a thriving, self-sustaining economy. They somewhat reluctantly accepted the necessity of importing Western machinery, technology and modern management science.

The realization that China's economic development is closely tied to the international economic system has been a painful process for China. In the early 1970's, politically powerful elements of the leadership opposed enmeshing China in a system over which she would have little control.⁵ When the first phase of this involvement in 1973-4 created unpleasant economic side effects for China, leaders associated with the policy (including Zhou Enlai and especially Deng Xiaoping) came under attack. After the death of Mao, China began a second phase of massive involvement in the international economy. Within a year, however, unpleasant side effects were again causing a reappraisal; leading officials were calling for a period of "summing up experiences."⁶

That the Chinese leadership remains sensitive to the appeal of Mao's slogan of "maintaining independence, keeping the initiative in our own hands and relying on our own efforts" is clear. Communist Party General Secretary Hu Yaobang reaffirmed such a position in his address to the Twelfth Party Congress in September 1982:

In our efforts for socialist modernization, we must take a self-reliant stand, relying mainly on our own hard work . . . In no circumstances must we forget that capitalist countries and enterprises will never change their capitalist nature simply because they have economic and technological exchanges with us.⁷

In the same vein, Premier Zhao Ziyang reported to the Fifth Session of the Fifth National People's Congress in December 1982 that "the aim of expanding our foreign economic and technologi-

cal exchanges is of course to raise our capacity for self-reliance, and definitely not to weaken or impair the development of our national economy. Under no circumstances will we waver on this point.”⁸

The tension between the needs of modernization and the deep-rooted desire for independence has expressed itself in the dual policy slogans which now govern China’s foreign economic relations: “self reliance with an open door” and “equality and mutual benefit.”⁹

The Open Door

Beginning in 1978, China opened her doors wider and wider to foreign involvement in her economy.¹⁰ China’s total foreign trade almost tripled between 1977 and 1981, as did both imports and exports. However, under the twin hammers of international recession and domestic economic readjustment, China’s foreign trade suffered a setback in 1982. Exports increased only slightly while imports were cut back by about one-fifth. The Sixth Five Year Plan, promulgated in December, 1982, however, envisions a major effort to expand both exports and imports.

One of the ten specific tasks enumerated in the Plan is “to vigorously expand foreign trade, effectively utilize foreign capital and actively import advanced technical know-how in order to promote economic and technical development in the country.”¹¹ To this end the Chinese foresee growth of overall foreign trade between 1980 and 1985 averaging 8.7% per year. Imports will actually grow more rapidly than exports, resulting in a trade deficit for the period of some \$2.5 billion.¹² In 1983 alone the trade deficit is expected to rise to some \$1.9 billion.¹³

Foreign involvement in the Chinese economy, however, has far transcended simple buying and selling. With the July 1979 promulgation of the Law on Joint Ventures Using Chinese and Foreign Investment, China began encouraging foreign investors to establish jointly managed enterprises on Chinese soil. Since then more than \$2.9 billion in foreign investment has been committed to nearly 13,000 Chinese enterprises.¹⁴ Four Special Economic Zones¹⁵ and several other incentive areas have been set up to attract foreign investment. Further, the Chinese government has sought and obtained substantial international technical and professional aid in identifying investment projects and analyzing their feasibility. In June 1982, the United Nations Industrial Development Organization (UNIDO) cosponsored with the Chinese a forum in which 130 such projects were discussed and offered up for foreign investment.¹⁶ Since 1980, the World Bank

has also been engaged in a long-term effort to identify promising projects under both its soft-term International Development Association (IDA) and hard loan International Bank for Reconstruction and Development (IBRD) programs.¹⁷

Perhaps the most publicised Chinese-foreign cooperation has been in the development of China's offshore oil. This will ultimately involve unprecedented reliance on foreign companies for technical assistance, capital and equipment in some of the most sensitive economic, geographic and political areas of China.¹⁸ In addition, foreign engineering, technology and equipment will be major components in the development of other high priority sectors like hydropower, coal, port and railway construction and light industry.¹⁹

A final indication of the extent of foreign penetration into China's economy is the proliferation of laws and regulations in the economic realm in the last three years. At least 35 major pieces of legislation have been published ranging from laws on joint venture investment to income taxes, control of resident offices of foreign enterprises in China, foreign exchange control, functioning of enterprises in special economic zones, exploitation of offshore oil, advertising, economic contracts, civil procedure and marine environmental protection. Some of these have been modelled on foreign experience; some have even made use of the advice of foreign legal experts as consultants. Under strong foreign pressure, China is now putting the finishing touches on a patent law and is working on copyright legislation.

Self Reliance

All of this foreign penetration of the Chinese economy and society has made the leadership nervous. Over the past several years numerous cases of embezzlement, bribery, graft and other forms of corruption have come to light. Smuggling, especially through Guangdong and Fujian provinces, has become a particularly sensitive and troublesome problem as Chinese citizens with extra cash have been willing to risk purchasing foreign luxury consumer goods on the black market rather than buy Chinese products which are often unavailable, of low quality, or require time-consuming requests and delays. Some officials have even turned to illegal channels to bypass the cumbersome bureaucracy in obtaining needed equipment and supplies. Such "profiteering and speculation" is apparently widespread.²⁰

Communist Party General Secretary Hu Yaobang echoed his colleagues' concern about the corrupting influence of foreign involvement in China when he told the Twelfth Party Congress:

“While pursuing the policy of opening to the outside, we must guard against, and firmly resist, the corrosion of capitalist ideas and we must combat any worship of foreign things or fawning on foreigners.”²¹

Top Party leader and economic planner Chen Yun has called the disintegration of Party spirit a “matter of life and death.” As head of the CCP’s Discipline Inspection Commission he has overseen a massive campaign to root out and eliminate corruption.²² Two Guangdong officials guilty of embezzlement and smuggling have been executed²³ and numerous others fired, demoted, sent to prison or otherwise disciplined.

Aside from the social disintegration blamed on foreign influence, Chinese leaders are wary of the economic impact of imported goods and machinery. Remembering China’s experience in the century before Liberation,²⁴ they are particularly concerned that imports not stunt the growth of Chinese industry. Especially sensitive are the machinery industry and consumer goods.

In April 1982 a *People’s Daily* editorial singled out the automotive vehicle industry as well as seamless steel pipe, mining equipment and other sectors as suffering from the effects of “blind imports.”²⁵ Shanghai officials pointed out that during the first 10 months of 1981 China imported 16,000 automobiles, the cost of which was four times the total State investment in the Shanghai motor-vehicle plant.²⁶

Consumer goods, particularly consumer durables and electronics, have also been the target of a “buy Chinese” campaign.²⁷ As a result of these pressures, the Chinese government announced a new policy in January 1981.

In principle, the following machinery and equipment should not be imported from abroad: equipment that can be produced domestically; equipment that China can manufacture and that requires only foreign technology; equipment that can be made or assembled in China through importing a few key components or materials; and equipment that can be manufactured cooperatively with foreign firms through the introduction of expertise or technical cooperation.²⁸

In addition, emphasis will now be placed on domestic sourcing of as much equipment as possible when importing a “whole plant” project or cooperating in offshore oil development²⁹, and the Chinese are embarking on a major drive to boost exports of their own machinery and equipment.³⁰

Equality and Mutual Benefit

In addition to “self reliance with an open door,” China’s foreign trade rests on a fundamental policy of “equality and mutual benefit.” The Chinese realize that for foreign investment and trade to yield the benefits for China that the leadership desires, they must provide a stable environment and one in which the foreigner can make and repatriate a reasonable profit. Unfortunately this attitude is not yet universal among Chinese officials. One foreign businessman was told in all seriousness that foreign investors should be happy because China provides them with a secure place to invest their surplus capital.

This points up the sensitive political problem for Chinese leaders of providing sufficient incentive to foreign investors without creating domestic political charges of destroying China’s socialist economy, selling out her natural heritage or permitting exploitation of a proletarian China by capitalist imperialists.

China’s leaders are caught in another policy delimita. They espouse the principle of equality but it is not easy to say what China is equal to. In aggregate economic and geopolitical terms China is a superpower.³¹ In per capital terms, however, China is a less developed country.³²

Moreover, China’s international posture is that “Socialist China belongs to the Third World . . . China regards it as her sacred international duty to struggle resolutely against imperialism, hegemonism and colonialism.”³³ China’s position as a third world country allows her to expect subsidized international aid and special treatment by the major economic powers. For example, China expects wealthier countries to provide better contract terms, lower interest rates, free services (e.g. feasibility studies) and preferential trade agreements. At the same time, China’s position as a major political actor makes her sensitive to the controls normally attached to such assistance. Moreover, the Chinese government is not reluctant to take advantage of her own assets such as the lure of oil and her right to access to soft-term international loans.

This ambivalence about the meaning of equality leads to some frustrating incongruities in the interface between China and other countries. One such incongruity is the meaning of reciprocity. To Americans, reciprocity implies that U.S. citizens in China have the same privileges enjoyed by Chinese in the U.S. But, in the words of a prominent American China Scholar,

To the Chinese, reciprocity is achieved when they treat Americans in China as they handle other foreigners and

when the Chinese are accorded the same privileges in the United States as those obtained by other aliens from non-hostile countries.³⁴

This different interpretation of reciprocity has caused endless complaints among foreign businessmen and journalists in China.³⁵

Fiscal Conservatism

The final principle on which Chinese foreign trade is based is not generally officially discussed. China's experience with post World War II inflation and with repaying the Soviet debt in the 1960's have reinforced China's fiscal conservatism in the international market. Ever since paying off the Soviets, China has attempted to diversify her sources of supply for crucial imports and to balance her foreign trade on a yearly basis and with each trading partner.

As a result of the "great leap to the West" in 1978-80, however, China sustained relatively large yearly foreign trade deficits for three years in a row. This led to the reassessment of trade policy; imports and exports were basically balanced in 1981 and imports were dramatically cut in 1982.

Mainly as a result of this readjustment, China's balance of payments position (including all transactions, not just trade) in 1981-2 was very strong. In 1981 China had a current account surplus of \$3.5 billion which expanded to an estimated \$5 billion by 1982.³⁶

Despite this strong position, and despite the strong recommendation of the World Bank and other financial institutions that China borrow more, the PRC's international debt obligations are quite small. By the end of 1981 China had an international credit line of more than \$30 billion but had borrowed only about one-sixth of that amount.³⁷ By contrast, her hard currency reserves exceeded \$5 billion, more than her outstanding debt.³⁸

US-CHINA TRADE, 1972-83

The First Decade

Beginning in 1969, the US government relaxed restrictions on trade and intercourse between American citizens and the PRC.³⁹ Trade began in 1971 at the very modest level of \$4.9 million, (Table 3) but expanded dramatically following the signing of the Shanghai Communique in 1972. The opening of liaison offices by China (in Washington) and the US (in Beijing), and the establishment of the National Council for US-China Trade in 1973,

contributed materially to the rapid growth of Sino-American trade in 1973-4.

US-China trade dropped off sharply in 1975 as a result of a combination of factors. First, as one expert account has put it, "China's trade strategy unravelled in 1974."⁴⁰ This strategy was predicated on the export of large quantities of Chinese petroleum to pay for large-scale imports of machinery and whole plant. The Arab oil embargo, however, created both recession and inflation in the West which led to higher prices for China's imports and reduced demand abroad for Chinese products. China consequently faced a \$1.2 billion trade deficit with non-Communist countries in 1974 forcing Chinese leaders to cut back on purchases of both agricultural commodities and machinery. Secondly, domestic economic difficulties and embarrassment over miscalculating the international economic environment brought leftist internal political pressure on China's leaders. This reached crisis proportions after the death of Zhou Enlai in January 1976 when the leadership was accused of having "sold out its national heritage" and of shifting the international energy crisis onto the backs of the Chinese.⁴¹

Thirdly, China enjoyed good harvests of grain in 1974-5 and of cotton in 1973-4. This, combined with some Chinese dissatisfaction with US political instability in the wake of Watergate and with the consequent slowness of the American government in normalizing relations, led to reduced purchases of agricultural commodities.⁴² Similarly, the delivery of machinery and whole plant contracted in 1973-4 was not followed up with new orders, dropping US machinery exports to China by almost half in 1976 and by one-fifth in 1977.

With the recovery of domestic political stability in China in 1977 and the renewal of momentum in the US-China relationship after Jimmy Carter's election, US-China trade began to grow significantly again.

The announcement of the ten year program for economic development in February 1978⁴³ marked the beginning of a Chinese buying spree. Between 1978 and 1981, US exports to China jumped by 100-381% per year. Much of this was accounted for by agricultural sales, but exports of chemicals expanded 20-fold in 3 years, manufactured goods by almost 40-fold, and machinery by some 700%. Similar purchases from Japan and Western Europe resulted in an overall Chinese trade deficit of \$1.14 billion in 1978, \$2.31 billion in 1979, and \$1.28 billion in 1980. The trade deficit with the US widened to almost \$2.7 billion by 1980. This was symptomatic of economy-wide problems of

overextension.⁴⁴ A large and prolonged domestic budget deficit forced the Chinese to scale down their expectations and to cut back on construction and imports.

Composition

With the exception of 1975-77, agricultural commodities have dominated US exports to China. Since 1979, foodstuffs alone have accounted for well over one-third of exports. When cotton and other farm products are added, agricultural exports in recent years have made up more than half of China's purchases from the US. (Tables 4 and 5)

Again with the exception of US-China trade's "three bad years," exports of chemicals, manufactured goods and machinery have increased almost every year. In percentage terms, chemicals and manufactured goods represented only one to two percent of US exports to China in the early years. By the late 1970's chemical sales (including agricultural chemicals) accounted for more than 10% as did manufactured goods. Machinery represented a bit more than 10% of US exports to China in 1973-4, jumped to between one-third and one-half in the mid-1970's, and returned to about 10% in the late-1970's.

US exports to China began to see the result of China's policy of "readjustment" in 1981. Overall, sales were down by about 4% in 1981 in current dollars.⁴⁵ This reduction, however, was primarily due to lower agricultural sales to China, overall down 10.8% from 1980. Wheat sales increased about 22% but soybeans, soybean oil, cotton and corn were all down. Machinery sales dropped by more than one-third, principally as a reflection of the sale of \$162 million worth of aircraft in 1980. No aircraft were sold to China in 1981. Although petroleum equipment exports were also down, electrical equipment, precision equipment and telecommunications gear were all up. Nevertheless, even in percentage terms machinery sales dropped to an all-time low of 5.9% of US exports to China in 1980.

Also in response to China's economic sectoral readjustment from heavy to light and consumer goods industries, US sales of metals and minerals were down more than 70% in 1981, but exports of synthetic rubber, resins and plastics were up more than one-third. Sales of logs and lumber more than doubled and exports of textile yarns tripled in 1981.

The composition of US imports of Chinese products has also seen some dramatic changes. (Tables 4 and 6) In the early years imports were dominated by tin, bristles, raw silk, plain cotton fabrics, art objects and fireworks. By 1979-81, crude petroleum

and gasoline were the principal American purchases from China with carpets and finished or semi-finished textile goods taking strong positions. Metal and mineral ores were also major imports as were traditional items like feathers, fireworks, woven baskets and antiques. In 1981 peanuts, a one-time purchase to supplement a very bad US crop, took second place among US imports from China.

The fastest growing import in recent years, although still relatively small in absolute terms, is machinery and equipment. Sales of Chinese equipment in 1981 were more than 35 times the 1979 level and included reciprocating liquid pumps, hoists and jacks, and a variety of other items.

Direction

The US has enjoyed the enviable position of a trade surplus with China in all but two years between 1972 and 1981. In 1980 this surplus was more than \$2.6 billion. The Chinese point out that this surplus extends even to the sensitive area of textiles. If China's 1981 imports of American textile raw materials are compared with the same year's sales of textile products to the US, America still had a \$456 million surplus.

Only examining the trade balance, however, obscures the fact that when the entire economic relationship is considered the Chinese probably break even or have a slight surplus with the US. Counting "invisibles" such as revenues from American tourists, shipping, air travel and the "Hong Kong connection," some experts believe that "US-China financial relations weigh heavily in China's favor, not the other way around."⁴⁶ In addition, in 1981 and 1982 US imports from China grew dramatically (79.1% in 1981 and 20.5% in 1982) while exports dropped (by 4% and 19% respectively).

PROBLEMS IN THE US-CHINA ECONOMIC RELATIONSHIP

The Chinese View

The first and most contentious issue in US-China relations, which has periodically flared up and which inevitably has an impact on bilateral economic relations, is Taiwan. For the Chinese, failure to settle this issue is a fundamental impediment to the development of good relations and mutual trust.⁴⁷ The Taiwan question touches at least three raw nerves in Beijing. First is the legacy of unequal treatment and interference in China's domestic affairs which characterized China's relations with the west in the century before 1949. Chinese leaders remain very

sensitive to any implication that such a policy is being pursued, that the PRC's legitimacy as the only government of China is being questioned, or that China's "internal affairs" are being manipulated or decided by a "superpower."

The second raw nerve is an actuarial one. Chinese leaders on both sides of the Taiwan Strait are undoubtedly somewhat concerned that the ardor for reunification is considerably weaker among their successors. Leaders like Deng Xiaoping and Ye Jianying want to see a speedy resolution of the matter.

The third sensitive point for the Chinese on the Taiwan issue is the problem of dealing with a US government that speaks with more than one voice. For example, conflict between the executive and legislative branches, such as the different emphases of the Shanghai Communiqué and President Carter's statement on recognizing the PRC on the one hand and the Taiwan Relations Act on the other, confuse and frustrate China's leaders.

In fact, understanding and coping with the US political system has been the second major problem for China. Particularly from 1972-77, the Chinese were concerned about US political "instability," as three administrations followed each other in less than three years. Similarly, the intricate relationship between the White House, the Congress and the courts has been both confusing and frustrating to leaders in Beijing. For example, the Chinese were perplexed that President Carter's 1979 decision to abrogate the US treaty with Taiwan could be challenged in court.

Finally, the role of other agencies like the Food and Drug Administration and the International Trade Commission is often difficult for Beijing's leaders to fathom. To give just one example, the Chinese over the past several years have tried desperately to diversify their exports to the US in order to redress the trade imbalance.⁴⁸ The Chinese understood the US-China trade agreement of July 1979 as committing the US to adopting "all appropriate measures to create the most favorable conditions for strengthening long-term development of trade between the two countries."⁴⁹ In their eyes, this precludes the US from throwing up unnecessary discriminatory road blocks to Chinese imports which might help to balance off China's trade deficit. Yet the Chinese face repeated US industry complaints to the International Trade Commission seeking protection against imports of Chinese mushrooms, chinaware, manhole covers, steel nails, jewelry, footwear and textiles.⁵⁰ It wasn't until 1982 that the Chinese began to fully understand the role of federal regulatory agencies and retained legal counsel to represent their interests.

The Chinese, until recently, have also underestimated the role

of domestic pressure groups in the US. The most celebrated recent example of the power of such groups over US-China trade is in textiles. Under strong pressure from the domestic textile industry, US negotiators in late 1982 and early 1983 "played hardball" with the Chinese over the renegotiation of the 1980 US-China textile agreement.⁵¹ Negotiations broke down, the US imposed unilateral restrictions on imports of Chinese textile goods, the Chinese retaliated by deciding not to purchase US cotton, soybeans and synthetic fibers, and discussions broke off.⁵² Similar underestimation of the political influence of US industry has been evident in China's reaction to disputes over canned mushrooms and ceramics.

A third source of dissatisfaction on the part of the Chinese is US export control policy. Bureaucratic disputes within the US government and a legitimate concern over defining our national interest⁵³ have combined to confuse American companies (and the Chinese), to slow down implementation of announced Presidential policy, and to delay excessively the processing of applications for export to China of high technology items like computers. The Chinese are not sure whether they are considered a "friendly country" or a member of the "international Communist bloc."

The US View

Paradoxically, many American businessmen agree with the Chinese that US export control policy is unwise, putting them at a distinct competitive disadvantage *vis a vis* their European and Japanese counterparts.⁵⁴ This is not to say that US companies have no legitimate problems to raise with the Chinese about the economic relationship. These problems can be lumped into three broad categories.

The first general category of problems from the US perspective relates to infrastructure. Despite substantial progress in the last three years, China's legal system remains rudimentary. Many questions about taxation, foreign investment, arbitration and other matters remain unclear.⁵⁵ Laws on patents and copyright still have not been published.⁵⁶

Physical infrastructure, particularly in transportation, causes innumerable problems for US companies.⁵⁷ Backlogs and delays in ports⁵⁸ and problems with railway transport mean late and/or lost shipments of goods. Supply of electricity, water, raw materials and other inputs for joint ventures has been a major concern of foreign investors.

Human infrastructure is another problem, particularly for companies considering investing in a joint venture in China.

Outside the major industrial centers skilled workers and managers are the exception rather than the rule.⁵⁹ In areas like Shanghai, Beijing and Guangzhou educated manpower is available⁶⁰ but Chinese recruitment mechanisms are foreign to American executives, and management authority over employees remains unclear.

Finally, China's organizational infrastructure is often faulty. The Chinese bureaucracy is often unable to agree upon and enforce the kinds of standards without which American companies are unwilling or unable to "buy Chinese."⁶¹

In fact, problems of bureaucracy in China are the second major category of problem for US companies. Business executives find the byzantine organizational structure of the PRC⁶² a constant source of confusion. How does one identify the appropriate partner? How does one find out who has ultimate authority to approve one's deal or investment project? How can one ensure a response from the Chinese to a telex or letter?⁶³ A whole new set of bureaucratic problems appears once the negotiating stage has been reached.⁶⁴

A second troublesome aspect of China's bureaucracy is its capacity for inconsistent or mixed signals and for changing its mind. This ranges at the macro-level from deciding what China means at any given time by "readjustment, reform, consolidation and improvement" to what is happening to "decentralization."⁶⁵ But it also involves changes of bureaucratic rules or interpretation of legislation with specific adverse business consequences, like the institution of shipping container usage fees⁶⁶ or the problems encountered by R. J. Reynolds Company with changes in import duties assessed on tobacco being imported for processing in Fujian province.

The third type of problem can be called business facilitation issues.⁶⁷ These range from the mundane but frustrating problems of obtaining housing, telexes and office help in Beijing to the discriminatory prices charged "foreign friends." Obtaining a visa to visit China is often a time-consuming and frustrating process. For example, in 1982, in response to the standard visa application processing time of some two weeks by the US embassy in Beijing, the Chinese let it be known that processing such an application by their facilities in the US would take about the same length of time.

A more serious impediment to trade has been the dearth of market information and the difficulty of market access in China. This situation has improved substantially in 1982. Chinese publications, and affiliated agencies in Hong Kong, are disseminating more information of higher quality than ever before. This process

has been assisted by the involvement of the World Bank and other international agencies which require the Chinese to provide relevant information and which insist on international competitive bidding for all of their loan projects. Also, in 1982 China published a list of 29 cities for which an internal public security travel pass will no longer be required by foreigners. This will be a major step in improving access to Chinese markets.

OUTLOOK AND CONCLUSION

Since the onset of "readjustment" in 1979, China's leaders have made considerable progress in putting the country on an even economic and political keel. Politically, the Deng Xiaoping-Chen Yun coalition has taken major steps in quieting or removing political opponents and in transferring power to a new generation committed to economic improvement and reform. In agriculture, the institution of the "responsibility system" and the strengthening of incentives for production have led to impressive growth in farm output.⁶⁸ Industry has undergone a substantial reorientation; consumer goods production is up, capital construction has been scaled back and tentative steps have been taken to improve management and profitability. Inflation and budget deficits, of great concern a few years ago, have been brought under control.⁶⁹ Finally, China's foreign trade was balanced in 1981 and enjoyed a \$4.6 billion surplus in 1982.

These successes have given China's leaders the confidence to tackle the serious problems remaining. Agricultural policy has led to increased production but it has also created difficulties in assuring balanced supply of grain and various cash crops as peasants respond increasingly to market forces. Similarly, the responsibility system encourages large families, a result at direct odds with China's population policy.

Bottlenecks in energy, transportation and economic planning continue to plague the Chinese economy. Management and profitability reform in industry are hampered by failure to address meaningfully the problems of allocation, pricing, and responsibility. Shortages of resources, including both financial and human, mean that national defense and science and technology are developing painfully slowly.

China's Sixth Five Year Plan addresses many of these questions with admirable realism. Annual growth is expected to be only 4-5%; emphasis on agriculture and light and consumer industries will continue; renovation of existing enterprises will take precedence over construction of new plant; and energy

conservation will be coupled with the search for new production.

The Sixth Five Year Plan is encouraging for US business as well. Historically the promulgation of an economic plan in China has been followed by increases in spending, including spending on imports. Moreover, the specific priority areas outlined in the Plan are areas in which US industry stands in a very good international competitive position.

The Plan calls for a five year investment of Y17.9 billion in the coal industry, Y15.4 billion in petroleum, and Y20.7 billion in electric power (including hydropower). American companies are deeply involved in all of these areas in China, and the prospects for sales of US equipment, technology and services are very bright. China plans to invest some Y29.8 billion in transport and communications by 1985. This will open substantial opportunities for US business in port development, civil aviation and telecommunications.⁷⁰

China's leaders recognize that modernization is expensive and will emphasize purchases of new technology, major equipment and materials in short supply on the domestic market, and they realize that imports will have to grow faster than exports between now and 1985.

The extent to which US business can take advantage of these opportunities in China depends on four factors. First is the worldwide and US domestic recession. Until mid-1983, stringent economic conditions at home have virtually prevented many American companies from investing the time, talent and money necessary to explore the China market.

The second factor is more directly dependent upon the actions of the US government, especially in relaxation of controls on the export of high technology. Quite a few positive steps have been taken by the government in recent years. For example, in 1982 the Reagan Administration asked Congress to amend both the Agricultural Trade and Development Assistance Act of 1954 (PL-480) and the Foreign Assistance Act of 1961 in order to remove prohibitions against applying these programs to China. Unfortunately both bills died with the 97th Congress. The Administration did, however, sign into law a provision lifting the 32-year old embargo on seven Chinese furskins.

Since China gained most favored nation treatment in 1980, the President has extended this status annually. In 1979, Vice President Mondale offered \$2 billion in Export-Import Bank financing for China. Since then, Exim has made two loans worth a total of \$117.5 million. In addition, Exim guaranteed another \$8 million private loan. Similarly, the Overseas Private Investment Corpora-

tion now offers political risk insurance, feasibility financing and loan guarantees. So far OPIC has insured seven projects in China for a total of \$54.9 million.

In earlier 1983, the two governments were either involved in or about to begin negotiations on a bilateral investment treaty and a bilateral tax treaty. Negotiations on a second US-China textile agreement broke down in January 1983, but talks were scheduled for March concerning the renewal of the Sino-American maritime agreement. Despite these promising steps, many US executives feel that their government should do more to help them combat the advantages of close cooperation between government and private industry which their competitors enjoy in Japan and Western Europe.

The third factor determining the role of American industry in China's economic development will be the actions taken by the Chinese government to facilitate business. Here considerable progress has also been made in the last three years. China's expanding legal structure, easier access to many major Chinese cities, the improved flow of information, and increased confidence in dealing successfully with the outside world have all made China a more stable and predictable place in which to do business.

Finally, the extent of US-China economic relations over the next decade will depend in large part on the quality of US-China political relations. Both China and the US are emerging from a decade of self-doubt and are reassessing their respective roles in the world community. For the US this process has included a reassertion of a position of world leadership, a perceived necessity to rebuild the American arsenal, and a willingness to confront the Soviet Union. For the Chinese, this reassessment has involved the desire to insure a peaceful international environment in which to pursue economic modernization. This has entailed efforts to relax tensions with her Soviet, and to a lesser extent Vietnamese, neighbors and to resume a position of leadership in the Third World.

While this process of simultaneous foreign policy reassessment by two great powers can be rather unsettling, it is in the long run of positive benefit.⁷¹ The US has historically expected too much, whether for good or bad, of China. This was reflected in the decade after the Shanghai Communique in a euphoria of unrealistic expectations. Similarly, in the last five years the Chinese have expected the US (and other foreign countries) to unselfishly bankroll China's economic development. Both countries have been disappointed.

Recent signs indicate that leaders in both Beijing and Washington are a bit more realistic about what to expect from the relationship.⁷² Particularly encouraging is the step away from attempting to use the US-China relationship as a "card" to play against the Soviet Union. During his February 1983 visit to Beijing, Secretary of State George Schultz went to considerable lengths to emphasize the American desire for "strong and lasting" relations with the PRC,⁷³ relations which would be based on a wide variety of common interests but which would also recognize the numerous areas in which the US and China do not agree.⁷⁴ With this more realistic approach, the development of the US-China political relationship should be less characterized by what Mr. Schultz called the "roller coaster effect" of recent years.⁷⁵ Such political stability and realism will set the foundation for strong and expanding Sino-American economic ties as the relationship enters its second decade.

NOTES

1. Richard E. Batsavage and John L. Davie, "China's International Trade and Finance," in *Chinese Economy Post-Mao*. US Government Printing Office: Joint Economic Committee of the US Congress, 1978 (hereafter JEC 1978) give China's foreign trade before 1977 as about 5% of GNP. Since then it has grown considerably. 1977: 8.9%, 1978: 10.1%, 1979: 11.6%, 1980: 13.3%, 1981: 16.6%.

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3. Alexander Eckstein, *Communist China's Economic Growth and Foreign Trade*. New York: McGraw Hill, 1966.

4. Cheng Chu-yuan, *Economic Relations between Peking and Moscow: 1949-63*. New York: Praeger, 1964.

5. E.g. see Christopher M. Clarke, *The Politics of Bureaucratic Reorganization in the People's Republic of China: The State Council, 1949-1979*. Unpublished Ph.D. Dissertation, The Ohio State University, 1980.

6. Dorothy Solinger, "The Fifth National People's Congress and the Process of Policy Making: Reform, Readjustment, and the Opposition," *Asian Survey*, December 1982; Nicholas Lardy and Kenneth Lieberthal, "Introduction," in *Chen Yun's Strategy for China's Development: A Non-Maoist Alternative*. Armonk, NY: M.E. Sharpe, 1983.

7. Hu Yaobang, "Create a New Situation in All Fields of Socialist Modernization," *Beijing Review*, 9/13/82, p. 20.

8. Zhao Ziyang, report on the Sixth Five Year Plan in *Summary of World Broadcasts* FE 7208, 12/14/82, p.C8. See also Deng Xiaoping, "Speech at Opening of 12th CCP Congress," *Red Flag*, 9/1/82.

9. E.g. see Liu Chaojin and Wang Linsheng, *China's Foreign Trade: Its Policy and Practice*. San Francisco: CTPS, 1980 and Ministry of Foreign Economic Relations and Trade of the PRC, *Guide to Investment in China*. Hong Kong: Economic Information Agency, 1982.

10. E.g. see A. Doak Barnett, *China's Economy in Global Perspective*. Washington: Brookings, 1981.

11. Sixth Five Year Plan for National Economic and Social Development

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12. *ibid.*, pp. K28-9 and "Chen Muhua on Foreign Trade Targets for 1985" in SWB FE, 7203, 12.8.82, pp. C11-12.
13. *Washington Post*, 2/7/83.
14. James Stepanek, "Direct Investment in China," *China Business Review (CBR)*, 9-10/82.
15. James Stepanek, "China's SEZs" and Michael J. Moser, "Guangdong's SEZs," in *CBR* 3-4/82.
16. Nicholas Ludlow, "130 Projects," *CBR* 5-6/82. See also Karen Berney, "The UN in China," *CBR* 11-12/82.
17. Karen Berney and Dori Jones, "China's Activities in the IMF and World Bank," *CBR* 3-4/81 and N. Ludlow, "China and the World Bank," *CBR* 11-12/82.
18. See Kevin Fountain, "The Development of China's Offshore Oil," *CBR* 1-2/80; Dori Jones, "China's Offshore Oil Development," *CBR* 7-8/80; Stephanie Green, "The Offshore Oil Race," *CBR* 7-8/81; Stephanie Green, "Offshore Oil Contracts," *CBR* 1-2/82; Kim Woodard and Robert C. Goodwin, "Supplying Offshore Services," *CBR* 3-4/82; Chris Brown, "Tough Terms for Offshore Oil," *CBR* 7-8/82; and A. Doak Barnett, *op.cit.*
19. See Martin Weil, "China's Sixth Five Year Plan," *CBR* 3-4/83; Weil, "Hydropower," and Richard E. Gillespie, "Hydropower: Private Sector Potential," in *CBR* 7-8/82; Weil, "China's Troubled Coal Sector," *CBR* 3-4/82; and Weil, "China's Consuming Interest," *CBR* 1-2/82.
20. E.g. see "Questions and Answers by Shi Guangju," in *Red Flag*, 2/1/81; "Major Economic Crimes Must Be Dealt With Sternly," *Zhongguo Caimao Bao (China's Finance and Trade)*, 3/2/82; "Ban Yue Tan Answers Readers' Questions on Combating Speculative Activities," in *FBIS*, 2/8/82.
21. Hu Yaobang, *loc. cit.*, p. 20.
22. E.g. see Martin Weil, "Tightening Up," *CBR* 5-6/82.
23. *Xinhua News Agency* 1/17/83 in *FBIS* 1/19/83, p. K1, and *New York Times*, 1/22/83.
24. E.g. see Dwight Perkins, ed., *China's Modern Economy in Historical Perspective*. Stanford: Stanford University Press, 1975.
25. "Protect and Develop Our National Industry," in *FBIS*, 4/26/82, pp. K3-5.
26. *Xinhua News Agency*, 4/19/82 in SWB FE W1182, 4/28/82, pp. A24-5.
27. E.g. Zhou Zhiping, "Strict Limits Should Be Placed on Import of Durable Consumer Goods," *Guangzhou Ribao*, 7/29/82 in *Joint Publications Research Service* 81681, *China Report: Economic Affairs* 262, 9/1/82, pp. 92-3; Gao Fan, "Feelings on Premier Zhou's Wearing of a Shanghai Wristwatch," *Beijing Ribao*, 5/28/82 in *FBIS*, 6/4/82, pp. R1-2; and Xue Qun, "We Must Not Blindly Import Consumer Goods," *Liaoning Ribao*, 5/16/82 in *FBIS*, 5/28/82, pp. S3-4.
28. Shu Yao, "Imports Strictly Controlled to Protect National Industry," *China Daily*, 10/8/82.
29. See "Regulations on Offshore Oil Exploitation," *China Daily Supplement*, 3/16/82, p. 8.
30. E.g. see Bo Yibo, "Actively Explore International Markets for China's Machinery and Electrical Products," as reported in *FBIS* 2/2/82, p. K10.
31. E.g. see "China at the Dawn of the 1980's," *CBR* 1-2/80.
32. E.g. see "Personal Incomes in China," *CBR* 3-4/81, and N. Ludlow, "World Bank Report: China's Options in the 1980's Hinge on Saving Energy," *CBR* 7-8/81.
33. Hu Yaobang, *loc. cit.*, p. 31.
34. Michel Oksenberg, "China Policy for the 1980's," *Foreign Affairs*, Winter 1980/81, p. 315.
35. E.g. see Scott D. Seligman, "The Frustrations of Doing Business in China,"

"The Frustrations of Expatriate Living in China," and "China's High 'Friendship' Prices for Foreigners," in *Asian Wall Street Journal*, 11/13/81, 1/6/82 and 6/23/82.

36. "The Benefits of Financial Conservatism," *CBR* 1-2/83.

37. *ibid.*

38. See data in *CBR* 11-12/82, p. 52.

39. Much of the following is based on William Clarke and Martha Avery, "The Sino-American Commercial Relationship," in *China: A Reassessment of the Economy*. USGPO: JEC, 1975 and Avery and Clarke, "The Sino-American Commercial Relationship," in *JEC* 1978.

40. Batsavage and Davie, *op.cit.*, p. 713.

41. Christopher M. Clarke, *op.cit.*

42. Frederick M. Surls, "China's Grain Trade," in *JEC* 1978.

43. Hua Guofeng, "Unite and Strive to Build a Modern, Powerful Socialist Country," in *Peking Review*, 3/10/78, pp. 7-40.

44. See James Stepanek, "Beijing's Continuing Retrenchment," *CBR* 1-2/81; Martin Weil, "Readjustment Phase II," *CBR* 7-8/81; and Weil, "Tightening Up."

45. If inflation were accounted for the loss would be a bit more. The following discussion is based on the author's introduction to *US-China Trade Statistics 1981*. Washington: National Council for US-China Trade, 1982.

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47. E.g. see reports of Secretary of State Schultz's February 1983 visit to the PRC. Takashi Oka, "After Schultz Visit, Mistrust in China-US Ties," *CSM*, 2/9/83. See especially, Xinhua News Agency, "George Schultz China Visit," 2/6/83.

48. E.g. see Carol Goldsmith, "China's US Sales Strategy: The First Steps," *CBR* 11-12/80.

49. See text of the agreement in *CBR* 7-8/79.

50. See C. Goldsmith, "Protectionism," *CBR* 1-2/81; J.M. Richards, "Protectionism and the ITC," *CBR* 9-10/82; and Andrew Heyden, "The Modern Ceramics Trade," *CBR* 9-10/82.

51. Martin Weil, "The Textiles Deadlock," *CBR* 11-12/82.

52. E.g. see Takashi Oka, "Tangle over Textile Threatens Overall Fabric of Sino-American Ties," *CSM*, 1/21/83 and Francine Kiefer, "Just How Serious are Imports in US Textile Downturn?," *CSM*, 1/21/83.

53. See *The Implications of US-China Military Cooperation*. USGPO: Senate Committee on Foreign Relations, 1/82; David M. Lampton, "Misreading China," *Foreign Policy* 45, Winter 1981-2; Karen Berney, "Dual Use Technology," *CBR* 7-8/80; Chris Brown, "The Problems with Country Group P," *CBR* 3-4/82; and Martin Weil, "The Elusive US-China Nuclear Agreement," *CBR* 9-10/82.

54. Don Oberdorfer, "Schultz Scolds US Group for Trade Gripses," *Washington Post*, 2/4/83 and Frank Ching, "Schultz, in Peking, Trades Complaints with US Companies," *Wall Street Journal*, 2/4/83.

55. Paul A. Allen, "Economic Courts," Yeow Ming Choo, "Arbitration," and Timothy A. Gelatt, "Doing Business with China: The Developing Legal Framework," all in *CBR* 11-12/81; Eugene Theroux, "Arbitration in China," *CBR* 4-5/82; James Stepanek, "Joint Ventures: Why US Firms are Cautious," *CBR* 7-8/80; Jerome Alan Cohen, "Equity Joint Ventures," *CBR* 11-12/82.

56. Karen Berney, "China's Draft Patent Law," *CBR* 5-6/81.

57. Carolyn Brehm, "Slow Boats From China," *CBR* 1-2/83.

58. John M. Pisani, "Ports: The Big Seven," Liao Feng, "Dalian," Bian Ji, "Xiamen," Cong Wenzhi, "Tianjin," and Christopher M. Clarke, "Haikou, Sanya and Basuo," in *CBR* 1-2/83.

59. In this vein, it is significant that the World Bank's first loan to China is a \$200 million project for upgrading 25 Chinese universities.

60. E.g. see Thomas H. Pyle, "Reforming Chinese Management," *CBR* 5-6/81.
61. See Helen Kauder, "Subcontracting in China," *CBR* 9-10/82 and Chris Brown, "Pharmaceuticals," *CBR* 9-10/82.
62. Michel Oksenberg, "China's Economic Bureaucracy," *CBR* 4-5/82.
63. E.g. see N. Ludlow, "Who's the Boss," *CBR* 1-2/81.
64. See Lucian Pye, *Chinese Commercial Negotiating Style*. Cambridge: Oelgeschlager, Gunn and Hain, 1982.
65. Christopher M. Clarke, "Leadership Divisions," *CBR* 3-4/81 and Clarke, "China's Organizational Revolution," *CBR* 7-8/82.
66. Brehm, *op.cit.*
67. See Seligman, *op.cit.* and Seligman, "Business Facilitation: Its Many Facets and Failures," *CBR* 11-12/81.
68. E.g. see Frederick M. Surls, "The Agricultural Outlook," and Kathlin Smith, "Returning Incentives to the Farmer," in *CBR* 11-12/82.
69. China ran deficits of Y17 billion in 1979 and Y12.75 billion in 1980 but reduced this to Y2.72 billion in 1981.
70. E.g. see Chris Brown, "Telecommunications," *CBR* 7-8/82.
71. E.g. see Michel Oksenberg, "Repairing China Ties," *The New York Times*, 1/27/83.
72. E.g. see Michel Oksenberg, "China's New Self-Confidence," and Henry Kissinger, "Mr. Schultz Goes to China: What Should Come out of this Trip," both in *Washington Post*, 1/30/83.
73. E.g. Frank Ching, "Schultz Launches Effort to Improve US-China Ties," *Wall Street Journal*, 2/3/83 and Bernard Gwertzman, "US and China Seek 'Solid and Enduring' Ties," *The New York Times*, 2/3/83.
74. Leslie H. Gelb, "US-China Ties: Lower Expectations," *The New York Times*, 2/2/83; Daniel Southerland, "A New US-China Pragmatism," *CSM* 1/26/83.
75. Don Oberdorfer, "Schultz, in Peking, Probes China's New Relations with Soviets," *Washington Post*, 2/3/83.

Table 1
China's Foreign Trade

Year	Total trade (\$bn)	Exports (\$bn)	Imports (\$bn)	Total US-China trade (\$bn) ¹	Total Sino-Soviet trade (\$bn)	Exports (=100)		Imports (=100)	
						Industrial & Mineral	Agricultural	Means of Production	Means of Subsistence
1950	1.13	0.55	0.58	238.12	388.44	9.3	90.7	83.4	16.6
1951	1.96	0.76	1.20	7.90	803.60	14.0	86.0	81.3	18.7
1952	1.94	0.82	1.12	0.05	1,064.21	17.9	82.1	89.4	10.6
1953	2.37	1.02	1.35	negl.	1,258.23	18.4	81.6	92.1	7.9
1954	2.44	1.15	1.29	0	1,291.24	24.0	76.0	92.3	7.7
1955	3.14	1.41	1.73	0	1,789.85	25.5	74.5	93.8	6.2
1956	3.21	1.65	1.56	0	1,523.77	26.1	73.9	91.5	8.5
1957	3.11	1.60	1.51	0	1,364.70	28.4	71.6	92.0	8.0
1958	3.87	1.98	1.89	0	1,538.57	25.5	72.5	93.1	6.9
1959	4.38	2.26	2.12	0	2,097.00	23.7	76.3	95.7	4.3
1960	3.81	1.86	1.95	0	1,663.94	26.7	73.3	95.4	4.6
1961	2.94	1.49	1.45	0	827.91	33.4	66.6	61.9	38.1
1962	2.66	1.49	1.17	0	701.58	34.7	65.3	55.2	44.8
1963	2.92	1.65	1.27	0	601.06	32.9	67.1	56.0	44.0
1964	3.47	1.92	1.55	0	445.22	32.9	67.1	55.5	44.5
1965	4.25	2.23	2.02	0	407.44	30.9	69.1	66.5	33.5
1966	4.62	2.37	2.25	0	305.14	26.6	73.4	72.2	27.8
1967	4.16	2.14	2.02	0	111.41	24.4	75.6	76.0	24.0
1968	4.05	2.10	1.95	0	92.14	21.8	78.2	77.2	22.8
1969	4.03	2.20	1.83	0	54.22	23.5	76.5	82.4	17.6
1970	4.59	2.26	2.33	0	47.23	25.6	76.4	82.7	17.3
1971	4.85	2.64	2.21	0	149.27	28.9	71.1	83.9	16.1
1972	6.30	3.44	2.86	12.88	250.33	27.7	72.3	79.4	20.6
1973	10.98	5.02	5.16	260.38	261.77	24.7	75.3	76.4	23.6
1974	14.57	6.95	7.62	475.71	299.99	33.8	66.2	75.7	24.3
1975	14.75	7.26	7.49	470.71	297.25	39.3	60.7	85.4	14.6
1976	13.44	6.86	6.58	316.68	414.73	38.9	61.1	86.8	13.2
1977	14.80	7.59	7.21	294.25	329.04	38.5	61.5	76.1	23.9
1978	20.64	9.75	10.89	991.77	436.53	37.4	62.6	81.4	18.6
1979	29.33	13.66	15.67	2,451.60	492.62	44.0	56.0	81.3	18.7
1980	37.82	18.27	19.55	4,812.84	492.42	51.8	48.2	78.9	21.1
1981	43.13	21.56	21.57	na	na	na	na	na	na
1982 ²	38.60	21.60	17.00	na	na	na	na	na	na

¹ These are Chinese data which do not equal figures released by the US government. They are given for illustrative and comparative purposes.

² 1982 figures approximate
na = not available
Source: Statistical Yearbook of China, 1981, Hong Kong: Economic Information and Agency, 1982, pp. 357, 363, 370, 358.

Table 2
China's Foreign Trade by Commodity
(\$100,000)

	1970	1975	1976	1977	1978	1979	1980	1981
TOTAL	4,206.04	13,957.54	12,834.70	14,787.23	20,521.09	28,156.16	38,808.45	39,606.00
Imports	2,046.27	6,826.13	5,565.24	6,614.54	10,350.79	14,381.05	19,315.72	18,211.80
Exports	2,159.77	7,131.41	7,269.46	8,172.69	10,170.30	13,773.11	19,492.73	21,394.20
Food and Live Animals	991.01	2,863.79	2,357.07	3,011.10	3,709.24	4,424.45	6,055.64	6,284.80
Imports	330.37	816.46	567.18	1,066.49	1,378.72	1,771.65	2,736.20	2,832.40
Exports	660.64	2,047.33	1,789.89	1,944.61	2,330.52	2,652.80	3,319.44	3,452.30
Beverages and Tobacco	22.59	79.08	90.80	89.70	101.93	103.85	159.85	167.90
Imports	0.12	0.16	0.20	0.11	1.42	4.93	23.68	51.70
Exports	22.47	78.92	90.61	89.59	100.51	98.92	135.93	116.20
Crude Materials, inedible except fuel	620.42	1,568.67	1,556.10	2,057.28	2,612.68	3,453.56	5,226.51	4,943.40
Imports	237.53	727.30	619.76	1,022.44	1,392.14	1,854.42	3,431.57	2,975.50
Exports	382.89	841.37	936.34	1,034.84	1,220.54	1,599.14	1,794.94	1,967.90
Mineral Fuels	98.12	1,155.18	968.42	1,277.46	1,620.20	2,648.79	4,531.43	5,060.70
Imports	40.24	127.75	65.13	110.40	156.42	181.50	205.27	192.70
Exports	57.88	1,027.43	903.29	1,159.06	1,463.78	2,467.29	4,326.16	4,868.00
Animal & Vegetable Oils	27.79	93.04	83.73	202.66	211.03	271.01	282.85	213.00
Imports	3.67	39.35	30.02	155.21	135.56	179.98	193.10	109.60
Exports	24.12	53.69	53.71	47.45	75.47	91.03	89.75	103.40
Chemicals	428.04	1,161.29	912.00	1,263.38	1,655.91	2,222.56	3,261.09	3,335.70
Imports	310.13	812.69	540.93	866.72	1,184.74	1,443.50	2,031.22	2,042.70
Exports	117.91	348.60	363.07	396.66	471.17	779.06	1,229.87	1,293.00
Manufactured Goods	1,280.04	3,838.70	3,780.43	4,073.03	6,536.07	8,234.53	9,225.71	9,434.10
Imports	690.67	2,190.92	1,926.91	2,100.04	3,926.91	5,875.37	4,711.66	4,597.05
Exports	589.37	1,647.78	1,853.52	1,972.99	2,660.70	3,522.87	4,628.66	5,083.30
Machinery and Transport Equipment	478.92	2,274.01	2,003.70	1,456.95	2,404.68	4,334.89	6,186.18	5,673.10
Imports	404.58	2,012.58	1,716.38	1,170.96	2,032.73	3,841.21	5,444.63	4,883.80
Exports	74.34	261.43	287.32	285.99	371.95	493.68	741.55	789.30
Miscellaneous Manufactured Goods	253.93	876.03	1,038.16	1,300.47	1,605.44	2,330.52	3,640.52	4,256.60
Imports	26.55	75.52	78.42	81.44	153.60	299.62	480.54	623.60
Exports	227.38	800.51	959.74	1,219.03	1,451.84	2,030.90	3,159.98	3,633.00
Other transactions	5.31	47.76	44.29	55.22	64.56	132.00	238.94	236.80
Imports	2.42	23.41	12.31	32.74	40.10	94.58	172.47	149.10
Exports	2.89	24.35	31.98	22.48	24.46	37.42	66.47	87.70

Source: China: International Trade Annual Statistical Supplement. Washington: National Foreign Assessment Center, EA-82-10015, 2/82 and China: International Trade, First and Second Quarters 1982. Washington: NFAC, EA CIT 82-004, 11/82.
Note: Columns may not add up to totals due to rounding.

Table 3

US-China Trade, 1971-82
(\$ mln; % change)

Year	US Domestic Exports	US General Imports	Total	Balance
1971	-	4.9	4.9	-4.9
1972	63.5 (-)	32.4 (+561)	95.9 (+1,857)	31.1
1973	740.2 (+1,066)	64.9 (+100)	805.1 (+740)	675.3
1974	819.1 (+11)	114.7 (+77)	933.8 (+16)	704.4
1975	303.6 (-63)	158.4 (+38)	462.0 (-51)	145.2
1976	135.4 (-55)	201.0 (+27)	336.4 (-27)	-65.6
1977	171.3 (+27)	202.7 (+1)	374.0 (+11)	-31.4
1978	823.6 (+381)	324.1 (+60)	1,147.7 (+207)	499.5
1979	1,716.5 (+108)	592.3 (+83)	2,308.8 (+101)	1,124.2
1980	3,749.0 (+118)	1,058.3 (+79)	4,807.3 (+108)	2,690.7
1981	3,598.6 (-4)	1,895.3 (+79)	5,493.9 (+14)	1,703.3
1982	2,904.5 (-19)	2,283.7 (+20)	5,188.2 (-6)	620.8

Source: National Council for US-China Trade files.

Table 4
US-China Trade, 1972-82, By Commodity
(\$m)

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
TOTAL	92.53	752.82	921.53	461.96	336.90	373.98	1,142.19	2,308.78	4,807.32	5,493.93	5,228.28
Imports	32.32	63.72	114.68	158.33	200.96	202.66	323.95	592.28	1,058.34	1,895.33	2,123.71
Exports	60.21	689.10	806.85	303.63	135.99	171.32	818.24	1,716.50	3,748.98	3,598.60	2,904.57
Food and Live Animals	60.23	416.05	343.15	14.20	23.89	25.75	388.24	539.67	1,322.04	1,428.73	1,378.71
Imports	4.24	5.97	13.45	14.26	23.89	25.72	25.99	51.40	57.33	96.25	120.36
Exports	55.99	410.08	329.70	0.02	0	0.03	362.25	488.27	1,264.71	1,332.48	1,258.35
Beverages and Tobacco	0.03	2.01	5.55	1.77	0.35	0.32	0.61	0.86	1.76	3.41	5.67
Imports	0.03	0.65	2.83	1.77	0.35	0.32	0.61	0.77	1.42	2.28	5.39
Exports	0	1.36	2.72	0	0	0	0	0.09	0.34	1.13	0.28
Crude Materials, inedible except fuel	12.26	186.52	344.41	117.72	51.44	96.40	281.89	597.85	1,309.80	1,435.80	707.07
Imports	12.26	14.62	16.33	17.59	38.42	44.05	57.99	66.04	126.50	332.92	120.21
Exports	0	177.90	328.08	100.13	13.02	52.35	223.90	531.81	1,183.30	1,102.88	586.86
Mineral Fuels	negl.	0.42	0.34	0.20	0.11	1.55	1.77	97.11	139.51	296.53	600.78
Imports	negl.	0.42	0.11	0	0	0.95	negl.	96.44	137.74	293.46	597.67
Exports	0	negl.	0.23	0.20	0.11	0.60	1.77	0.67	1.77	3.07	3.11
Animal & Vegetable Oils	2.20	19.94	7.91	1.92	2.43	32.05	41.04	45.47	75.39	22.14	7.07
Imports	negl.	0.73	0.37	1.91	2.43	0.06	3.26	3.43	1.99	0.34	0.59
Exports	2.20	19.21	7.54	0.01	0	31.97	37.78	42.04	73.40	21.80	6.48
Chemicals	2.15	16.08	28.54	21.22	28.51	41.39	94.72	184.96	495.96	530.79	632.20
Imports	2.15	8.23	18.36	15.94	18.07	21.79	34.23	59.79	110.36	125.53	135.97
Exports	0	7.85	10.18	5.28	10.44	19.60	60.49	125.17	385.60	405.26	496.23
Manufactured Goods	7.36	30.09	61.33	153.12	110.43	60.40	120.40	337.31	658.90	823.07	663.71
Imports	7.36	21.01	42.74	79.37	67.13	49.56	95.10	93.38	235.30	376.95	389.14
Exports	0	9.08	18.59	73.75	43.30	10.84	25.30	243.93	423.60	446.92	274.57
Machinery and Transport Equipment	2.09	68.90	106.84	119.10	66.45	52.13	93.49	229.84	364.06	251.45	265.92
Imports	0.07	0.14	0.09	0.30	1.33	0.55	0.48	1.12	5.69	39.62	98.49
Exports	2.02	68.76	106.75	118.80	65.12	51.58	93.01	228.72	358.37	211.83	217.43
Miscellaneous Manufactured Goods	6.06	12.02	21.94	30.59	51.07	62.55	119.08	270.67	437.54	692.61	937.09
Imports	6.06	11.16	19.23	25.62	47.69	58.01	105.38	215.47	381.77	621.90	852.71
Exports	0	0.86	2.71	4.97	3.38	4.54	13.70	55.20	55.77	70.71	78.38
Other transactions	0.14	0.79	1.51	2.04	1.66	1.66	0.95	5.04	5.37	8.59	10.01
Imports	0.14	0.79	1.16	1.57	1.64	1.66	0.91	4.44	3.25	6.07	7.22
Exports	0	0	0.35	0.47	0.02	0.03	0.04	0.60	2.12	2.52	2.79

Source: National Council for US-China Trade files.

Table 5
 US Domestic Exports to China, 1978-82
 By Sector
 (\$ mln)

Sector	. 1978	. 1979	. 1980	. 1981	. 1982
Machinery and Equipment	118.10	405.78	434.99	283.32	284.92
transportation	13.28	59.92	188.63	39.86	30.77
petroleum equipment	44.58	205.22	73.49	45.16	54.74
Industrial Supplies	271.88	643.88	1,695.03	1,674.78	1,125.69
textile materials	206.91	453.10	1,026.81	1,073.75	400.61
Agricultural Chemicals	49.98	64.05	184.81	159.46	175.24
Consumer Goods	379.22	601.51	1,432.07	1,476.37	1,301.87
foods	377.55	482.65	1,263.87	1,331.58	1,237.39

Source: National Council for US-China Trade, US-China Trade Statistics, 1981, US-China Trade Statistics, 1982.

Table 6
 US Imports for Consumption from China, 1978-82
 By Sector
 (\$US million)

Sector	. 1978 .	. 1979 .	. 1980 .	. 1981 .	. 1982 .
Machinery and Equipment	0.53	0.86	5.75	40.46	45.08
Industrial Supplies	160.16	262.58	505.12	820.78	1,092.62
minerals & metals	37.78	59.25	154.92	205.26	193.93
petroleum & products	negl.	96.44	131.57	295.43	580.17
chemicals	20.08	18.71	49.44	65.49	70.52
agriculture-derived supplies	40.97	34.58	55.28	50.00	42.88
Consumer Goods	155.07	280.02	525.73	959.54	1,071.77
textile manufactures	61.46	130.81	247.41	391.62	597.31
handicrafts & light manufactures	52.29	64.87	148.82	212.08	256.48
foods	24.80	52.00	56.39	249.62	126.32
carpets & floor coverings	13.19	18.40	50.67	67.54	53.86

Source: National Council for US-China Trade, US-China Trade Statistics, 1982.

PROSPECTS FOR CHINA'S AGRICULTURE: GROWTH AND THE ROLE OF FOREIGN TRADE

Steven B. Butler

Now that China has become a fairly important market for many American products, it is easy to forget that just a few years ago we considered China to be extremely isolated, in large part because China's leaders did not want to engage heavily in foreign trade. China did not want to become dependent on foreign trading partners for essential goods, a lesson driven home both by American embargos against China following the start of the Korean War, and also China's treatment at the hands of the Soviets. Foreign trade, however, is intimately linked to economic development in China, and in every period in which China's leaders have emphasized growth, foreign trade has shot up. Nonetheless, there is no reason to think that Chinese aversion to foreign trade has disappeared. What China has sought to purchase, and has needed for economic growth, is foreign technology and industrial goods.

Any other imports are a bow to necessity. Yet in recent years China has also purchased a wide variety of consumer goods in order to boost domestic standards of living quickly, although it now intends to curtail such imports. It has also been forced to import a great deal of agricultural products, in particular cotton, sugar, and wheat. We used to take it as axiomatic that China would have to strive for self-sufficiency in food production, if only for security reasons. But China's imports of food grains have risen annually from just over 2 million tons in 1976 to a historical high of about 15 million tons in 1982. In the context of a worldwide recession, depressed agricultural prices, and abundant supplies, we should consider this a boon to American farmers. Much of the wheat eaten in Peking may be grown in the U.S. But this relationship may or may not continue, and it is that question that I would like to consider in more detail, first by looking at

trends in China's recent agricultural production and foreign trade, and then by examining a number of specific problem areas: in particular, China's marketing and pricing policies, recent changes in labor management and incentives, and both the short and long run constraints imposed by China's huge population and its overstretched resource and ecosystem.

An Overview

I think largely because of China's reputation for having solved its food problem, we may overlook in reality how much China is integrated into the world food system. China is one of the world's largest producers of grain and feeds over one-fifth of the world's population. Although it has tried to achieve self sufficiency in food grain production, it has failed. It has usually exported rice to take advantage of the relatively higher price for rice in the world market, and imported wheat, making it a net importer of grain. But the level of its imports, unlike other large importers except for the Soviet Union, has tended to fluctuate somewhat unpredictably. China imported a great deal of grain following the Great Leap Forward in the early 1960s, it imported large quantities of grain in 1973 and 1974 following bad harvests, and since 1976 its grain imports have once again grown rapidly. Because China's population and production account for such a large portion of world supply and demand, a relatively small change in production or demand can have a major impact on the world market.

President Carter's Secretary of Agriculture, Bob Bergland, is quoted as having made the following remark in 1978, "If each of China's 900 million people [and there are a billion now] were to consume just one additional pound of grain a week [an increase of less than 10%], it would add 21 million metric tons to the worldwide demand. That tonnage is equal, in terms of wheat to all the wheat now grown in Canada, or the total amount of wheat consumed in the U.S. in all forms, from bread to liquor." Clearly, we need to consider China's food imports not only from the point of view of whether they are good for American farmers, but whether the world food supply and production system can cope with a failure of China's domestic production to meet growing demand. To everyone's surprise, for the first time China requested international food relief from the United Nations in 1980 following a serious drought in North China and flooding in the middle Yangtze. As China's modernization drive proceeds, undoubtedly the demand for improved diets, meaning more meat, will also mount. That demand will translate directly or indirectly to an increased per-capita demand for food grains. China's per-

capita consumption of grain now is quite low, but a relatively small percentage increase would add greatly to worldwide demand for food. China's economy as a whole may well grow rapidly enough to pay for food imports at a much higher level, but the question is whether the world can meet such demands.

Most reports on the performance of China's agricultural economy right up until the end of the 1970s tended to be relatively favorable. Scholars and other observers usually complimented China for managing to keep grain production just ahead of population growth and they felt China had no major inefficiencies in production. I think it is fair to say that the consensus among scholars has shifted fairly drastically by now.

In the 1950s, production recovered steadily from wartime disruption. The state began to impose mandatory procurement quotas on agricultural produce in 1953, but at that time prices were only marginally below what free market prices would have been. Collectivization proceeded relatively smoothly and did not lead to a major disruption of production. The Great Leap Forward, however, changed all of this. From 1958 to 1960, production dropped by about 25%. The latest research indicates that 14 to 16 million persons may have died as a result. The government raised prices again in 1962, and production began to recover. In 1966, grain production finally surpassed the record high of 200 million tons achieved 8 years earlier in 1958, but by then, of course, China's population was much higher. Per capita production did not attain 1958 levels until 20 years later in 1978.

The record in grain production in these years would not look so bad if it were compensated for by achievements in other areas of agricultural production. Unfortunately production of oil bearing crops, soy beans, and cotton all failed to keep up with population growth. Rural consumption of food oils declined some 40% over the period, and diets on average declined in quality. Of course, averages do not tell the entire story. In some places in China, diets must have improved, but elsewhere, restrictions on interregional trade forced villages to subsist on what they could produce themselves. Often this was not enough to provide a decent living. The Chinese press disclosed in 1980 that some 200 million people were living below China's poverty line of 40 yuan per capita per year, and that over 100 million people did not have enough to eat.

In the late 1970s, however, the government introduced a series of reforms that have fairly well turned the situation around. Grain production began to spurt ahead in 1977, largely because of the rapid increases in fertilizer supply in those years. Production

leveled off after 1979 until 1982, which finally broke the '79 record with a harvest of 344.3 million metric tons. But the lackluster performance in grain production is well compensated for by recent rapid increases in the production of cotton, food oil, sugar, and meat. Rural incomes have also gone up rapidly, in part because of the price increases, which amounted to a 23% boost in 1979 alone, and also because of the government's encouragement of collective and household sideline production. Government surveys show that rural income reached 224 yuan per capita in 1981, going up a whopping 16% per year since 1979. The surveys almost certainly exaggerate the increases due to sampling errors, but the increase has been substantial.

China's financial and trade situation has also improved recently. The price boost in 1979 contributed 7.8 billion yuan to a record budget deficit of 17 billion yuan in 1979, but in 1982, that budget gap was narrowed to 3 billion yuan, in large part due to increased revenues rather than slashed spending. China has also managed to cut down its trade deficit with the United States which in 1980 reached 2.7 billion dollars. Three years of bumper crops in cotton and sugar have led to reduced imports of these commodities, although as mentioned, grain imports remain at a historical high.

In sum, China's agricultural production experienced a long period of stagnation, and only a few recent years of relatively rapid growth. Our questions are what has caused this pattern, what does it imply about the near and long term prospects for future growth, and what are the implications for foreign trade? I should note that there is no very scientific way to provide clear-cut answers to these questions. Many policy changes have taken place at once, which makes it impossible to sort out and separate their individual effects. I have my own hunches about which factors are most important, and I will indicate them, but they remain educated guesses.

Economic Policy

Until his death in 1976, Mao Zedong's ideas dominated the formation of economic policy. These ideas included a strong distrust of material incentives, a fear of increasing income inequalities in the villages, a belief that villages should be "self-reliant," and a prejudice against regional specialization in production. Some of these ideas affect China's organization and management of labor, which I will consider in a moment. But first I will note their effect on prices and marketing policies.

In the first serious discussion of prices in at least a decade, in

1978 commentators in the Chinese press said that prices long had been literally a “forbidden zone,” a topic off limits, too sensitive to discuss during the Cultural Revolution years of the late 1960s and early 1970s. The effect during those years was to freeze agricultural purchase prices at a very low level at a time when the costs of production were rapidly escalating.

Dahe Commune, where I conducted field research for half a year in 1980, provides a good illustration of the effects of the price structure. Dahe is, at least now, an average, non-model commune in a relatively prosperous area on the North China plain. It is about 20 miles to the north-west of Shiziazhuang, the capital of Hebei Province, outside of its suburban district. From 1969 to 1976, Dahe doubled its yields of multiple cropped grain, from about 4.5 metric tons per hectare to about 9 tons per hectare, putting it on a par with the world’s most productive farmers. It did this first of all by building and improving canals that connect it to the Gangnan Reservoir system in the Taihang Mountains. Each year it drilled more tube wells to tap its very stable, relatively shallow underground water supply. It began to purchase more and more agricultural machinery, although it used tractors more for transportation than field preparation or harvesting. Each year fertilizer applications increased, as did the use of pesticides and other agricultural chemicals. In 1974, the commune adopted a new “triple-cropping” system. It was not a true triple cropping system of three sequential plantings. Rather, there were two staggered plantings of corn in the spring between rows of maturing winter wheat, one planting in wider spaces about a month before the wheat harvest, and another between the more narrowly spaced rows closer to harvest time. The new system produced an immediate jump in yields since the earlier planting of corn was less susceptible to cold weather in the fall. It increased the intensity of labor bottlenecks, since wheat could no longer be harvested by machine. And it also increased seed, fertilizer and water requirements.

At the start of the period, the costs of production took approximately 25% of the commune’s gross agricultural income. By 1976, that figure rose to over 50%, more than wiping out any possible increased profit. The commune actually made less money producing twice the amount of grain.

There are several comments to be made about this achievement. First it does illustrate the unfavorable price ratio between agricultural and industrial goods. In spite of the fact that historically this ratio has improved, yet because farmers used more and more expensive modern inputs they ended up losing money. But

second, the remarkable increase in yields in the face of such unfavorable circumstances is a convincing testament to the strength of China's bureaucratic system, at least in some places. Most Chinese commentaries on the failures of the period criticize bureaucratic meddling in the economy, but not all bureaucrats are incompetent and they would not have been forced to tell farmers what to plant and how to plant it if there had been an effective economic incentive to do so. Bureaucratic mismanagement, in my view, is less the cause of China's agricultural problems than it is an understandable reaction to unfavorable prices.

Similarly, Mao's enthusiasm for "self-reliance" placed even tighter restrictions on what farmers could do; it prevented them from specializing in crops best suited to their own conditions. I find the rationale for self-reliance still something of a mystery. Part of the reason may have been economic. China's grain ministry was not making money on grain trade, and it may simply have wanted to reduce transportation and handling costs. Self-reliance may also have had strategic implications. A nation not dependent on specialized regional trade would be less vulnerable to piecemeal invasion. And this was a period in which the Chinese were highly conscious of a potential Soviet threat. But Mao seemed to regard self-reliance as a moral virtue in its own right. The model village Dazhai, which has since been completely discredited, supposedly exemplified what every Chinese village could do if it tried concertedly to pull itself up by its own bootstraps.

But whatever the rationale, the effects are fairly clear. The policy of forcing villages to grow their own food reversed trends dating back centuries toward greater regional specialization based on comparative advantage. Areas on the North China plain that had increasingly specialized in cotton production as transportation improved during the 20th century had to cut back on cotton in order to feed themselves. As a result, by the late 1970s, China had become a huge importer of cotton, wasting precious foreign exchange on a crop it could have produced more efficiently at home. The story repeats itself in different variations for sugar production, food oils, and meat in pastoral areas. Many areas in the northwest had to cultivate grasslands that were quite unsuitable for grain cultivation. They produced low yields, and, worse, led to serious soil erosion. In short, self-reliance reduced efficiency in the allocation of resources; it caused waste. China could have done much better with the resources it put into agricultural modernization.

Since Mao's death, of course, China has changed both its price

and marketing policies. Prices have gone up substantially and regional specialization has increased. Productivity has also gone up. But it is not easy to sort out all the causes and effects involved, nor fully to explain the intent of policy.

First of all, it is not clear that price increases alone can account for the increase in productivity. China's leaders may have raised prices simply to give the peasants a better deal, to improve their standard of living. Even after the price boost, for example, free market prices for grain may be as much as 100% higher than the average price the state pays, and well above its higher "over the quota" price. And rather than stimulating production, after the hike in grain prices farmers have reduced grain acreage, and the percentage of output sold to the state has not gone up significantly. Grain, to farmers, is still worth more than the state will pay for it, and the ratio between industrial and agricultural prices remains much higher than in other developing Asian nations. In absolute and relative terms, grain prices are still fairly low.

Likewise, cotton price increases in 1978 and 1979 did not result in expanded acreage for cotton. Only after the state guaranteed an adequate supply of grain to cotton producers in 1980, did production spurt up. Hebei Province actually doubled its cotton production that year. Despite the unfavorably low prices of agricultural commodities, prices were apparently less of an impediment to increasing production than the lack of a guaranteed food supply.

But whatever the intent and the effect of the price boosts, the government has decided to postpone any further price adjustments for the foreseeable future. As usual, the government was afraid to raise food prices in the city when it raised the purchase prices, and resulting losses in urban food subsidies are staggering. In fact China's leaders have become nervous about many aspects of the reforms. The government has stressed for the past year that peasants must not reduce any further the acreage planted in grain. In April 1982 it announced that inter-provincial transfers of grain would remain frozen at the current level for three years. These moves threaten to halt basically healthy trends toward greater specialization and efficiency in farm production based on comparative advantage. The freezing of these more progressive policies may or may not be temporary, but the change is disturbing.

Instead of specialization, the government now intends to rely principally on technical transformation to increase productivity further. This is a long range investment that is bound to pay off. It will take many years to make up for the damage caused by the

Cultural Revolution, but without a vigorous input from Chinese agricultural scientists, China's agriculture cannot progress. This is particularly true since China's cropping systems are so unique. Foreign technology cannot simply be imported and applied. Nonetheless, without a more rational price structure and the freedom to specialize, farmers may never have the opportunity to adopt new technology, and to make decisions in an environment that allows for maximum economic efficiency.

Before moving on to discuss recent organizational changes in the countryside, I might note that all of the changes so far discussed have not altered the basic character of the Chinese economy. It is still planned and socialist. Prices still do not give farmers the signals that would encourage them to produce what China's economic planners want. Despite all the talk of reducing administrative interference in the economy, administrators still tell farmers what to plant, how much to sell to the state, and at what price. It is still a command economy largely modeled on that of the Soviet Union.

Labor Management

More than price and marketing policy, the return of a household-based farming system is what has really attracted public attention in recent years. Now that the green light has been given, some 70% of China's farmers have decided to divide up the land that they have been farming collectively since 1956, and farm it with their family members instead. This is a development that just a few years ago practically no specialists on rural China would have predicted. Parish and Whyte, in their seminal study of rural society, basically concluded that peasants had accepted and learned to live with the collective system, and that it had affected a wide range of social customs. In my own interviews conducted in Hong Kong in 1977 with recent refugees and emigres, I rarely heard a wholesale rejection of collective agriculture. In fact, many refugees praised the welfare aspects of the system, the fact that peasants were guaranteed a basic subsistence.

Nonetheless, many able-bodied workers were apparently unhappy with the system and were willing to try something different. And it is not hard to understand their points of unhappiness. The collectives had to operate under a variety of policies that reduced material incentives and generally placed a wide-range of restrictions on their activities. And, as we have already shown, the standard of living under the collective system did not really improve that much for most Chinese peasants.

Some of the problems began in the mid-1960s, when Mao discovered and promoted Dazhai as the national model for agricultural development. This encouraged in the late 1960s, and again about 1976, a national movement to create larger collective units. Production brigades, generally equivalent to large natural villages containing some 200 households, would become the units of collective agriculture rather than the smaller production teams, which contained only 30 to 50 families. The larger collectives were often too unwieldy to manage, and cadres were never able to create the necessary mutual trust and confidence among members to make the collectives work smoothly. Often wealthier teams had to take a cut in income, or hostile villages or lineage branches were forced together.

The Dazhai system for awarding work points probably promoted a more equal distribution of income in many villages, but it usually failed to reward peasants who worked harder. Chinese peasants were paid in work points, the value of which would not be known until the year-end settling of accounts. In the Dazhai system, peasants evaluated their contributions retrospectively and were supposed to include political attitudes as one of the criteria. But peasants often could not agree on how much their contributions to the team efforts were worth, and most teams eventually began to award most able-bodied men more or less the same amount of points just to avoid controversy. Women generally earned somewhat fewer points, regardless of how they worked. Many villages, especially in Guangdong, modified the system and began to use task rates—awarding points for the amount accomplished rather than the time spent working—but material incentives were not strong or direct in most places.

Under the new system, which China calls the “responsibility system,” each production team signs a contract with groups of peasants, individuals, or households, to cultivate an assigned piece of land. When the harvest comes in the farmers will either give the entire crop to the team and receive work points, or give only an agreed amount and keep any surplus for their own income. Either way, the material incentive is strong and direct.

When I was in China, I witnessed team cadres in Dahe trying out the new system, and they reported instant success. They reported that peasants worked faster and much more carefully. No longer did they spend their time browbeating friends and neighbors to show up for work on time and work till the quitting bell. In a place like Dahe, where the economy is fairly lively, it left more time to work on sideline enterprises, which peasants use to boost their cash income.

I have no doubt that this new system has simplified management tasks for local cadres, and that it has raised the efficiency of agricultural labor. To the extent that peasants in more prosperous regions of the country can fill their new-found free time with other non-agricultural productive activities, the system will help to raise peasant incomes. But I have some doubts about how much impact the system has had on raising agricultural productivity per se. If China's problem has been a surplus of labor and under- and unemployment, then what difference would it make if peasants worked harder and faster? The unfavorable price structure and the restrictions on what peasants could produce already created severe management problems for production team leaders. Many teams were prevented from distributing extra food to team members when they had a bumper harvest. They had to put any extra income into savings rather than distribute it to team members. Many teams had to contribute labor for construction projects from which they received little benefit. All of these restrictions meant that higher level cadres had to spend their time prodding and pushing the teams along so they would do what they were supposed to do. Sometimes this included mandating new planting methods that did not work, although very often they did work. But the point is that China could have achieved an improvement in agricultural productivity without changing the system of managing labor. For a whole range of reasons, I believe that the new system is superior to the previous one, but I don't think it is the main reason that agricultural productivity has risen in recent years, as most Chinese commentaries on the subject would indicate. It is instead relaxation of restrictions in these other areas that has had, in my opinion, a more immediate and decisive impact.

What we have seen in recent years then is a reduction in the acreage devoted to grain cultivation and a greater latitude for some areas to specialize in cash crops better suited to their growing conditions. Sugar, cotton, food oils, and meat production are all up significantly; grain production has stagnated, and in 1982 rose slightly. In the trade for cash crops as against grain, China has gained. The gross value of agricultural output has gone up some 5.6% annually since 1979, well above the historical average of 2.9% from the mid-fifties to the late 1970s. It has enabled China in 1982 to reduce greatly the level of imports for most agricultural commodities except for grain. China is making a more rational use of its agricultural resources, but it has not "solved" its food supply problem. China depends heavily on the

world market to feed its population, and I believe there is a good chance that that dependence may well grow over time.

Population and Resources

Before discussing what future trends in foreign trade might be, we need to examine another area that will be critical to China's future—the balance between population and resources. China's need for food obviously depends on how many people it must feed, in addition to how well it wants to feed them.

There are two schools of thought as to why China's population growth rate has fallen in recent years. One holds that while the availability of contraceptives and health services is a necessary ingredient, it is primarily caused by economic and social changes. For example, when women work outside of the home, as they do now in many more prosperous Chinese villages, raising children becomes more of a burden. When there is some kind of retirement pension system, as there is for state employees, children are no longer needed for support in old age. According to this line of reasoning, the recent changes in work organization will also encourage larger families since there would be more hands to work the plot of land assigned to the family. If this theory is correct, China's population growth rate depends principally on the rate of economic development. Cities and prosperous villages will be able to cut their birth rates, while the vast stretches of poor and poverty-stricken villages will produce more and more children. The outlook for China's population growth is rather pessimistic under this interpretation.

A second approach, however, argues that sheer administrative and social pressure combined with effective delivery of health services can substantially reduce the rate of population increase. People in this school would have to be called the optimists, or perhaps the closet totalitarians.

My own view is that while administrative pressure can make some difference, peasants, being rational creatures, will have children when it is in their material interest to do so. For most peasants the thought of facing old age with only one child to support them, especially if that child is a daughter, is frightening. As we know, the government policy now is to encourage one child families throughout China, and it has adopted fairly strong rewards and sanctions to implement the policy. My guess is that in the short run, reports will indicate that the policy is succeeding fairly well, either because of real short-run successes, or because of widespread falsification of reporting by local political officials under strong pressure to show good results. But when women

who take the pledge to limit themselves to one child begin to reach the end of their fertility, the prospect of a poverty-stricken old age may grow too frightening. Many couples may be willing to suffer the short run financial penalties in order to secure a more comfortable retirement.

Even under the most optimistic of Chinese projections, the population will grow by 200 million, some 20%, to 1.2 billion by the end of the century because China's population is so young. That is an addition nearly equivalent to the current population of the US, and all of them will have to eat. However, I think it is more likely that the population will actually grow faster than these optimistic projections indicate. China will need to work very hard just to make food production keep up with this growth in population. If it wishes to improve diets, as the Chinese people are surely going to demand, it will need a major breakthrough in production.

Furthermore, China's problems of providing for its population with its limited resources were seriously compounded over the past two decades by mismanagement of the environment (see a forthcoming monograph by Vaclav Smil). By forcing pastoral people in the Northwest to grow their own grain, it made them plow under the fragile grasslands, causing a sharp increase in wind erosion. Silt in the Yellow River has increased 25% since the 1950s. As far away as Beijing, the frequency of days of sandstorms has increased by about 20% from the 1960s to the 1970s.

Deforestation in Heilongjiang Province has caused a decline in annual rainfall of one-third in twenty-five years. In Sichuan, two biologists have warned that because of the felling of large numbers of trees in the upper reaches of the Min River, the Chengdu plain is in danger of becoming a desert within a few decades. That plain is the heartland of China's most populous province.

Throughout the entire middle and lower Yangtze, communes reclaimed lake and river areas in order to plant grain. Hubei Province lost some 75% of its lake surface area. Naturally, aquatic production declined as a result, but the loss of drainage area seriously compounded the effects of a devastating flood that struck the area in 1980, causing China to seek international food aid.

Water supply in North China remains a very serious problem. The area has been suffering from a long term drought that began in the early 1970s. Last year, Beijing and Tianjin had to invoke emergency measures to bring in water from the Yellow River. Many tube wells on the North China plain have gone dry as the

water table falls with excessive use. China's leaders have long toyed with the idea of diverting water from the Yangtze River to the north. But the project would have uncertain ecological effects, and would be enormously expensive.

Conclusion

In short, China faces enormous problems of population and environment in addition to those of planning and organization. I should say that I am more optimistic about China's economy as a whole. Currently China faces severe bottlenecks in energy, transportation, and communication. These bottlenecks may well plague the economy for the rest of this decade. But China is one of the world's great continental economies, comparable to the United States, the Soviet Union, or Europe as a whole, in the range and abundance of resources that it has to draw on. Presently these resources are not well developed, but they will be. In the 1990s, China will have a much easier time managing its industrial economy.

But agriculture is likely to be a continuing problem. Given the range of difficulties I have outlined, I think China will be quite successful if it manages to hold imports to more or less the current levels. If that happens, China's relationship with the international agricultural market will be somewhat similar to that of the Soviet Union. It will buy large amounts of agricultural commodities, especially grain, and the problem for the rest of the world will be in trying to adjust to unpredictable fluctuations in Chinese demand caused by weather or perhaps political factors. If China succeeds with its industrial development, it can afford to pay for food imports. And the major exporters of agricultural commodities will likely be able to supply China's needs at that level.

We should not rule out, of course, a major technological breakthrough that would allow China's agricultural production to improve dramatically. There are both optimists and pessimists among those who study world food-supply problems.

But I think a more likely danger is that China will impose ever greater demands on the world food supply system. This is particularly possible because at some point, China's people will demand improvement in their diets. And, as we have shown, a relatively small improvement in the average Chinese diet could have a large impact on the world food supply.

Because of the large number of factors involved, China's future agricultural import needs are unpredictable. The mix of what China imports may change as its agricultural plans evolve. There may well be occasional frictions as China seeks to expand its

exports, particularly of textiles, to the United States. But given the fact that there are few major net exporters of agricultural commodities, and assuming that there is no major political breakdown between the United States and China, I think that American farmers will have a large China market for some time to come.

ENERGY IN CHINA: PARADOXES, POLICIES, AND PROSPECTS

Thomas Fingar

Introduction

Twenty-one American oil firms have submitted bids to the China National Offshore Oil Corporation (CNOOC) for the right to explore for petroleum on China's southern continental shelf. The Atlantic Richfield Corporation, which signed a contract with CNOOC on September 19, 1982, has already begun exploratory drilling south of Hainan Island. Occidental Petroleum has signed a contract to do a feasibility study for a major coal mine in North China. As part of the US-PRC Hydropower Protocol signed in 1979, the Army Corps of Engineers is advising the Chinese Ministry of Water Conservancy and Electric Power on a major project in Southwest China. China's search for new supplies of energy promises to tie the country to the United States—and to the world economy in general—in complex and unprecedented ways.

As natural as this may seem to Americans, China's leaders have been very reluctant to allow foreign corporations to play a major role in the development of China's energy resources. Their reluctance stems from a mixture of pride, fear, and inexperience. They were—and still are—proud of China's indigenous capabilities, fearful of becoming dependent on and victimized by foreign firms, and unfamiliar with the technical, financial, and legal requisites of large-scale joint ventures with capitalist firms. If they could, they would prefer to rely on outsiders only to a limited extent; for example, for advanced equipment that China cannot produce. Indeed, the policies first adopted by Mao's successors embodied precisely this approach. It made superficial good sense, but soon foundered on historical, logistical, technical, and political obstacles. By the late 1970s, shortages of fuel and power had become chronic, in spite of the fact that China

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produces more commercial energy than all but a handful of nations.

The current approach recognizes the difficulties involved in opening new mines and oil fields and in sustaining production in older fields. China probably could develop its energy resources without foreign assistance, but neither the country nor the political leadership can afford further delay. Energy demand and the Chinese populace's expectations for a higher standard of living are rising inexorably. Forced to choose between economic stagnation and popular dissatisfaction, on the one hand, and partial reliance on foreign firms on the other, the leadership has opted for a less restricted definition of self-reliance. But the door to the capitalist world could be pushed shut by the forces that made self-reliance so attractive in the first place.

THE INITIAL POST-MAO ENERGY POLICY

The strategy of development adopted shortly after the death of Mao Zedong and purge of the "gang of four" in 1976 assumed that energy production could and would increase steadily. This was a critical assumption because large and rapidly growing amounts of fuel and power were needed to realize the "four modernizations" (agriculture, industry, national defense, and science and technology). This would enhance the legitimacy of the Communist Party and the "socialist system" by restoring political and economic stability, improving economic performance, and generating tangible and substantial social benefits.

Without expanded energy supplies, it would be impossible to achieve promised improvements in the performance of farms and factories. Mechanization was supposed to raise agricultural output while easing the lot of peasantry. Freed from the "irrational" (i.e., political) constraints imposed by the discredited "gang of four," industry was to provide consumer goods for town and countryside alike. Chinese planners believed all this was possible because they assumed that energy would be cheap and abundant.

This ambitious modernization effort was to be financed as well as fueled by the country's energy resources. Exports, primarily of crude oil, were expected to earn vast amounts of foreign exchange. Revenue from oil sales would, in turn, be used to purchase advanced technologies, complete industrial plants, and other ingredients needed for China to leapfrog across intermediate stages of development to become a "powerful, modern, socialist state" by the end of the century. Again, obtaining adequate supplies of energy was treated as a nonproblem.

Why were China's leaders so sanguine about the country's ability to meet its new energy needs at a time when growing concern about a current or impending "energy crisis" was a major issue in most capitals?

First of all, they knew that their country had vast deposits of fossil fuels. Although the precise magnitude of China's reserves is uncertain, because much of the country remains unexplored and the quality of available data is uneven, they clearly are substantial. Recoverable coal reserves are now estimated at more than 600 billion metric tons (bmt), roughly the same magnitude as those of the United States and the Soviet Union. Estimates of both total and recoverable oil reserves vary widely but, on the basis of current information, probably fall within the range of 3-10 bmt. In the mid-1970s, when the initial plan was being drafted, Chinese officials frequently used substantially higher figures when describing their country's potential. Little is known about the size of natural gas deposits, but they too are impressive—perhaps on a par with those of the United States. China also has the largest theoretical hydropower potential in the world (500 million kilowatts); less than 5 percent of this potential has been tapped.

But resources in the ground do not fuel economic development; they must be exploited. Here too, Chinese leaders had cause for optimism because by any standard their country had achieved steady, even dramatic production increases. Table 1 below illustrates what had been achieved.

TABLE 1
PRODUCTION OF COMMERCIAL ENERGY 1953-1977

	1953	1957	1965	1970	1974	1976	1977
Raw Coal	69.7	130.0	220.0	310.0	384.0	448.0	550.0
Oil	.62	1.5	10.0	28.2	65.7	83.6	93.6
Natural Gas	.01	.03	n/a	3.7	8.0	10.3	12.5
Electricity	9.2	19.3	42.0	106.7	167.2	203.5	223.4

NOTES: Units are as follows: Coal, million metric tons
Oil, million metric tons
Natural Gas, billion cubic meters
Electricity, billion kilowatt hours

SOURCE: Chinese government reports and UN statistics

Finally, assumptions about future earnings from oil exports were buttressed by favorable market conditions. OPEC-led price increases and the scramble to find alternatives to Mideast oil seemed to bode well. Growing foreign interest in Chinese fields,

where production increases had reached roughly 20 percent per year in the mid-1970s, also contributed to the general sense of optimism about the future.

In retrospect it is clear—to the Chinese as well as to outside observers—that the post-Mao leadership had too rosy a view of the country's energy balance. But it is important to point out that they had lots of company. It has been less than a decade since the Arab oil embargo and predictions of impending energy crises forced political leaders around the globe to focus on and learn more about the production, transport, and use of energy. Others also made easy but erroneous projections on the basis of past experience. However, the Chinese had—and still face—four special problems in perceiving and responding to the new verities, namely, problems of logistics, history, technology, and politics.

Logistics

China's leaders appear to have assumed that the exploration and exploitation of fuel and power resources would follow the same general pattern as that found in China's recent past or the experience of other nations. But such reasoning by analogy was misleading. Major producing areas (for example, the giant Daqing ((Ta-ch'ing)) oilfield and the Kailan coal complex) have been exploited first both because they are located near industrial centers, and, more importantly, because they are easiest to develop. In contrast, most of the larger untapped reserves, especially of hydropower but also of oil, coal, and natural gas, are in remote, inaccessible areas. Each new investment will be more difficult, more costly, and more technically demanding. The Chinese will have to face such obstacles as transport over long distances and difficult terrain, removal of heavy overburdens atop coal seams, working in deep water and violent weather in promising offshore areas, and unusually heavy silt loads in major rivers. These problems are not insoluble, but they are certainly more formidable than was appreciated in the 1970s and may be more difficult than China can handle, at least in the short run.

History

The Chinese approach to energy development under Mao shaped the perceptions of his successors in three important ways. The first was a strong faith in self-reliant mobilization. Chinese leaders are justifiably proud of the Daqing oilfield, which is located in a remote and harsh region of the country and now supplies roughly half of China's annual production. Daqing was built without foreign assistance. Successes in the expansion of

coal mines, development of small-scale and a few large hydro-power projects, and in tapping Sichuan's rich reserves of natural gas also contributed to the general sense of optimism.

All this suggested that even the most formidable obstacles to further exploitation of known reserves could be overcome. China had scored great accomplishments in the past and could surely do so again, especially since the country was no longer shackled by the infamous "gang of four," or so many leaders thought in 1976-77. For example, officials and media commentaries proclaimed that it was possible to open "ten new Daqings" by 1985.

Second, history constrained as well as misled political officials. The "Soviet model" of economic development, adopted in the 1950s, stressed heavy, energy-intensive industry, and relied on extensive rather than intensive growth. This approach ignored energy efficiencies: efficiency did not matter because fuel and power were underpriced and no competitive or other mechanisms existed to induce efforts to limit costs. As a result, China has hundreds of thousands of aging and energy inefficient enterprises and a deeply ingrained approach to capital investment that makes it difficult to switch to more efficient, less energy-intensive construction and retrofitting. Moreover, since efficiency mattered little for thirty years, tens of thousands of enterprises continue to operate, even though they waste resources and serve more of a welfare than a production function. (According to official figures more than 25 percent of state-run enterprises operate at a loss.) The technically or economically rational course is clear, but it is extremely difficult to change attitudes, expectations, and behavior, or to close factories that waste energy.

The third historical legacy is the government's near continuous failure to devote adequate attention or resources to the energy and transportation sectors. Despite considerable rhetoric and a few major achievements, construction of mines, oilfields, railways, transmission lines, pipelines and highways failed to keep pace with the growing demand for fuel and power in the cities and rural areas. This failure is particularly striking in a state which advocates central planning and claims an almost religious faith in the advantages of planned development. Decades of neglect cannot be overcome in just a few years.

Technology

The geographical, geological and other logistical factors noted above combine in ways that preclude rapid development of energy resources without substantial infusion of advanced technology; both equipment and know-how. China has done quite

well with the technologies acquired from the Soviet Union in the 1950s, but, generally speaking, has pushed those technologies about as far as they could be pushed. Tapping deeper oil deposits, opening new mines, and exploring for offshore gas requires knowledge and equipment not available in China. The needs cover a very broad spectrum, from heavy-duty trucks for use in open-pit mines to the computer hardware and software for processing seismic data. Moreover, to make effective use of many items requires simultaneous acquisition and absorption of many others. Almost without exception, the technologies and equipment needed are expensive.

In the giddy days immediately after Mao's death, officials greatly overestimated China's ability to purchase and absorb the new technologies. They wrongly expected to pay for imported technologies with the income from oil exports. They did not count on the constraints imposed by the type of technical training pursued prior to 1966 and by the calamitous effects of the Cultural Revolution (1966-1976). China simply does not have enough skilled managers, engineers, technicians or specialized workers to master numerous new technologies simultaneously. Even with concerted effort it will take years, perhaps decades, to create the critical mass of skilled people needed to attain China's developmental goals. True in a general sense, these twin miscalculations were—and are—particularly crucial in the energy sector.

Politics

Tapping China's energy resources is complicated by both domestic and international politics. On the domestic side, one finds the same types of regional, bureaucratic, and personal rivalries that bedevil other political systems. Various agencies, interests, and coalitions jostle one another at the budgetary trough and compete for other limited resources. Despite rhetorical homage to "scientific socialism," most decisions are made using political as well as purely technical or economic criteria. Thus, investment must be spread to satisfy many claimants rather than concentrated in an economically optimal way. Short-term demands often overwhelm arguments in favor of technical solutions that might be better in the long run. In short, energy decisions in China are at least as political as they are in the United States. But the impact of confused and contradictory energy policies is worse in China than in the US because China lacks the moderating effect of myriad private sector decisions.

International politics, or, more specifically, domestic debates over China's foreign policy and the way those debates are shaped

by external developments, also affect China's ability to develop its energy resources. The logistical, historical and technical factors outlined above make it imperative for China to rely, at least in part, on foreign assistance if it is to meet its energy requirements. But such reliance is an anathema to some officials and unpalatable to many others. They recall the history of "exploitation" at the hands of imperialist states and foreign companies. As nationalistic leaders dedicated to restoring China's prestige and independence, they view the role of transnational energy companies through ideologically tinted glasses. They are understandably reluctant to allow foreigners to play a direct and central role in the development of so critical a sector as energy. Part of the attractiveness of the 1977-78 strategy of development was that it promised to keep the foreigners at arm's length; they would merely supply equipment and advice.

As officials came to realize that exploiting China's energy resources—and attaining broader developmental goals—would be impossible without substantial foreign involvement, they faced two unpalatable alternatives: (1) the undermining of political legitimacy through failure to produce immediate and tangible economic benefit, or (2) dependence on foreign firms and governments. One reason it has taken China so long to conclude the first sizable contracts for development of coal and offshore oil is that officials are unwilling to make politically risky decisions. They fear, with good reason, that support for foreign involvement (that is, "underestimating China's potential" and "selling out to the capitalists") might come back to haunt them.

Involving foreigners effectively and absorbing advanced technologies raise other political issues as well. Current efforts to "readjust and reform" the economy are linked to the effort to achieve greater energy (as well as economic) efficiency and they tread on deeply entrenched interests. Aggrieved or endangered interests (e.g., inefficient factories, and local Party leaders in relatively disadvantaged areas) mobilize support and use every available political tool to alter decisions they do not like. This has had, and will continue to have, a major impact on the implementation of energy policy.

CURRENT POLICIES AND PRIORITIES

Confronted with this complex mixture of opportunities and difficulties, China's leaders have moved, albeit by fits and starts and with a degree of trial and error, to formulate integrated, comprehensive, and effective energy policies for the entire na-

tion. After decades of neglect, the energy sector has been accorded high, if not highest, priority. Although the military still commands the lion's share of the budget and agriculture retains rhetorical preeminence, investment in energy production and distribution is at an all-time high, and energy considerations are central to the evaluation of all capital construction projects. Implementation has lagged behind the articulation of energy policies and, naturally, individuals and organizations have interpreted guidelines to accord with their own wishes. However, generally speaking, China appears to be moving in a sensible direction. Cataloging the dozens of specific measures adopted is less useful than describing the four fundamental elements of Chinese energy policy: conservation, concentration, cooperation, and coordination.

Conservation of Existing Resources

Chinese fondness for the slogan of "walking on two legs" has continued into the post-Mao era. Under that rubric officials now proclaim the need to pursue both exploitation (i.e., greater production) and conservation of energy. They immediately add, however, that production cannot be increased significantly in the short term and that primary emphasis must be placed on conservation through more efficient use of the energy that is produced.

Official pessimism about the ability of China to produce more energy has been justified by recent statistics showing little or no growth. Even allowing for the inaccuracies that almost certainly exist in Chinese statistics, the trend is clear and stands in sharp contrast to that of the early 1970s, as is shown by Table 2.

TABLE 2
PRODUCTION OF COMMERCIAL ENERGY, 1976-1981

	1976	1977	1978	1979	1980	1981
Raw Coal	448.0	550.0	618.0	635.0	620.0	620.0
Oil	83.6	93.6	104.0	106.0	106.0	101.0
Natural Gas	10.3	12.5	13.8	14.5	14.3	12.7
Electricity	203.5	223.5	256.6	282.0	300.06	309.3

NOTE: Units are as follows: coal, million metric tons;
oil, million metric tons;
natural gas, billion cubic meters;
electricity, billion kilowatt hours

SOURCE: Chinese government reports and United Nations statistics

Reference to energy shortages began to appear in China's

media in early 1977, but officials and commentators did not highlight their magnitude or seriousness until 1979. The following excerpt is typical of many articles and speeches published in the past three years:

China possesses extremely abundant energy sources, but there are serious problems in the field of energy supply. Due to shortages of fuel and electric power, many enterprises are unable to operate at full capacity. This affects the speed of development of the national economy. It is not possible to fully meet the fuel and power needs of the people in urban and rural areas. This affects normal life. The energy problem is therefore a problem which we must take urgent steps to solve.

Officials signalled the importance they assigned to alleviating the consequences of energy shortfalls through conservation measures by proclaiming November 1979 the "first nationwide energy conservation month." To launch the campaign to conserve energy, Kang Shi'en, then minister of the State Economic Commission, outlined the magnitude of the problem and identified the areas of greatest concern. Even allowing for the hyperbole and use of extreme examples common to such PRC statements, the following passage provides useful insight into the thinking of senior officials.

Why do we particularly stress energy conservation at present? As everyone knows, due to interference and sabotage by Lin Biao and the gang of four, the management of energy is now in a state of confusion, the effective energy utilization rate is very low, and wasteful losses of coal, petroleum, and electricity are frightening. China now consumes forty-to-fifty million tons more coal, three-to-four million tons more oil, and twenty-to-thirty billion kilowatts more electricity than is necessary each year. This waste is even more shocking when compared with the effective energy utilization rate in advanced foreign countries. In China the effective utilization rate of thermal energy derived from fuel is only about 28 percent, while in the developed countries it has reached around 50 percent, almost double ours. . . . We are consuming too much petroleum and not conserving our natural resources in a rational way. Various enterprises on the industrial and communications front are now consuming over thirty million tons of oil. Over ten million tons of this petroleum are consumed directly. Most of the direct consumption of oil may be eliminated through using coal. If we can save over ten million tons of petroleum for export, we can earn more

than two billion US dollars in foreign exchange a year. We really cannot afford the consumption of oil in this manner.

To implement the call for energy conservation, departments and localities were instructed to prepare concrete plans to reduce wasteful consumption. Enterprises must monitor the amount of fuel and power used and strive to reduce consumption per unit of output. Inefficient factories will be penalized, presumably by having their allocations of energy reduced, and those able to use energy most efficiently will be given additional supplies if the addition will enable them to operate at higher capacity. This is in keeping with a general shift to what are termed “economic methods.” Other conservation measures include retrofitting plants as part of the emphasis on tapping the full potential of existing enterprises, the introduction of “modern” principles of management and techniques associated with systems engineering and operations research, and closer monitoring of energy consumption.

To conserve oil, oil-burning industrial boilers are to be converted to burn coal. Current policy specifies that “all” oil-fired boilers must be converted and no new ones may be constructed except in extraordinary cases. Reasons for making such a change include freeing more oil for export and other forms of domestic consumption, and taking full advantage of China’s large coal reserves. But there are also costs and problems associated with this policy. For example, increased use of coal will require additional transport capacity, opening and/or expanding mines, and greater attention to pollution problems—not to mention the direct costs of conversion. Thus far, officials seem to be paying little attention to these implications.

Concentration of Investment

Another Maoist aphorism adopted by his successors is to “concentrate resources to fight a war of annihilation.” This injunction has been construed to mean that available resources (human, fiscal, technical, etc.) must be dedicated to the construction of a relatively small number of projects that can be completed quickly and will produce tangible and immediately benefits. Applied to energy decisions, this approach has produced three notable developments.

The first and most significant development is increased investment in the energy sector. Despite substantial reduction in expenditures for capital construction, the amount and percentage of funds earmarked for energy production (and conservation) have climbed to an all-time high. Having identified energy

shortfalls as the principal obstacle to realization of economic, social, and political goals, officials have made the politically difficult decision to shift resources from other sectors with aspirations, requirements, and supporters of their own.

Resources have been concentrated more heavily than heretofore in the energy sector; within that sector, they have been concentrated in relatively few facilities. In order to bring new facilities on line as quickly as possible, the number of concurrent projects has been reduced sharply in the past three years. More care than previously is being devoted to the evaluation of alternative projects to ascertain the optimal sequence of development. Existing facilities will be expanded and modernized before new ones are built if doing so will produce better results in the short run.

Principles and priorities guiding the retrofitting of existing facilities to conserve energy are similar to those guiding new construction. Since industry consumes more than 70 percent of all commercial energy in China, and since the chemical, petrochemical, and metallurgical industries account for most of that figure, initial efforts are directed at the biggest sources of waste in these major consuming industries. This approach has certain clear advantages but it is also quite new in China where it has been far more common to dissipate resources in order to "do a little for everyone at the same time."

Second, the general economic policy of "readjustment" serves to concentrate investment in ways that affect the energy sector. A key component of that approach has been to shift resources and emphasis from heavy to light industry. One frequently proclaimed reason for doing so is that light and textile industries consume far less energy per unit of production than do heavy industries. Reducing the targets and operating time of one heavy industrial facility "frees up" enough fuel and power to supply several light industrial plants. The latter generate higher profits, produce goods needed to satisfy rising consumer demand at home, and earn foreign exchange from exports.

Concentrating resources in this way has raised the productivity of energy inputs, but it has also infringed upon the interests of powerful groups. These include representatives of the defense industries and their allies in the military, centers of heavy industry such as Shenyang and Anshan, and officials linked by factional ties and logrolling arrangements. These political forces—Nikita Khrushchev used to refer to their Soviet counterparts as "steel eaters"—will no doubt make new claims on the country's fuel and power in the near future.

Finally, the energy supplies produced under central direction will be consumed primarily in the cities. Since total energy production will grow slowly and demand in the urban and industrial sector will steadily increase, the supply of commercial energy to the rural areas will not increase significantly during the remainder of the decade. Consequently, the ambitious plan to mechanize agriculture by 1985 has been abandoned. Even if there were no other obstacles (which of course there are), the energy requirements (diesel fuel, electricity, gasoline) would be prohibitive.

There is a sense in which the 800 million people living in the countryside are being told that they must once again defer to the needs of their urban cousins, but there are significant differences between present policies and past neglect of the rural areas. For the first time in PRC history, the central government appears to be making a substantial effort to help the villages to help themselves in the energy field.

As part of this effort, investigation teams have surveyed the potential energy resources, capabilities, and needs of all (approximately 2,000) rural counties to determine, among other things, the potential for development of small hydrogenerators, local coal pits, biogas, solar energy, and fuelwood. Recognizing the impossibility of formulating detailed plans for 2,000 counties, the Energy Research Institute (subordinate to both the State Economic Commission and the Chinese Academy of Sciences) has assigned each county to one of twenty-six categories or "zones." Counties in the same zone have the same general mix of resources and requirements. When the process of analysis and clarification has been completed, central officials will formulate twenty-six rather than 2,000 specific rural energy policies. Small hydro projects will be encouraged in some counties, for example, while tapping natural gas deposits will be promoted in others. The allocation of funds, assignment of skilled personnel, and development of local industries will be made accordingly.

Cooperation: Foreign and Domestic

After years of delay and agonizing efforts to find an acceptable alternative, China's leaders have finally begun to sign major contracts with foreign firms for the development of energy resources. At the same time, the government is encouraging cooperation across formerly hermetic administrative boundaries within China. Both forms of collaboration have encountered political resistance.

Domestic opposition to foreign involvement is fueled by

economic concerns as well as chauvinism. Investment in the development of energy resources is, to some extent, a zero-sum game. Some regions, industries, and enterprises will benefit from joint projects with foreign partners while others will be disadvantaged, at least in the short run. Those with something to lose have joined those opposed to foreign involvement on ideological or xenophobic grounds. Politics is omnipresent. By mid-1982, however, Deng Xiaoping and his allies had converted, neutralized, or removed enough of those opposed to foreign involvement to clear away the remaining obstacles.

Willingness to permit major energy companies and foreign governments to participate in the search for and exploitation of China's energy resources is neither a sudden development nor an invitation to foreigners to write their own ticket. While combating and conquering domestic opposition, key officials (e.g., Deng, Zhao Ziyang, Hu Yaobang, and Yao Yilin) and legal, technical, financial, and other specialists have been preparing the way for restricted but effective foreign investment in the energy sector. Preparation of the joint venture, corporate income tax, petroleum, and other laws; decisions as to how and where foreigners will be allowed to invest; and analysis of how to reap maximum benefits from training, technical information, and sale of equipment and support services has proceeded slowly but steadily during the past three years. Hence, when it became politically possible to invite the foreigners in, it was also technically possible to do so. These developments are not unrelated; it is likely that political opposition diminished as safeguards were devised.

Cooperation within the country is at least as significant and as fraught with political controversy as allowing foreigners to invest in and operate mines and oilfields. The government is promoting a variety of new (for China) ways to induce joint projects between, and capture scarce investment funds from, different administrative and functional units. For example, provinces with limited or low-quality deposits of coal have been urged and enabled to invest in the development of mines located in other provinces. They do so with the promise of reaping economic benefits (e.g., equipment sales and a return on investment) and guaranteed energy supplies. At lower levels of the system, new ways are being tested to facilitate cooperation among villages (teams, brigades, and even communes) in the same river basin or astride the same deposit of coal.

As reasonable as it seems, the policy of encouraging domestic cooperation faces several obstacles. For years, farms, factories, and administrative units were urged to be self-reliant: their

willingness to be so was reinforced by traditional rivalries and the perils of depending on others. As a result, cooperation was problematic and infrequent. Better guidance, better leadership, and material incentives are now seen as critical to overcoming the attitudes and behavior of the past. It is too soon to declare current policies a success, but, again, they are a step in the right direction.

Improved Coordination of Policy Implementation

To formulate and monitor their new energy policy, PRC leaders decided in 1979 that China needed a new superministerial body. By the time the establishment of the State Energy Commission was formally announced in May 1980 it had existed for at least six and possibly ten months. The new commission was headed by Yu Qiuli, vice-premier and former head of the State Planning Commission, who had acquired fame and influence as the military commander in charge of opening the Daqing oilfield.

Ironically, however, the Energy Commission was created at a time when Yu's approach to energy development (which underlay the developmental plan announced in early 1978) had been discredited and largely abandoned. The Energy Commission failed to achieve the desired results, in part, because Yu did not share the goals and assumptions of the leaders who demoted him to his new position, and because his nominal leadership of the commission undermined its authority and effectiveness.

But that is a separate story. The important point here is that China's leaders saw the need to achieve greater coordination among energy ministries (petroleum, coal, and electric power) and to focus attention on the energy implications of the plans and practices of all other ministries and subnational administrative jurisdictions. They also sought to overcome paralyzing political maneuvers by creating a new organization with clearer authority and fewer parochial interests; in fact, they succeeded merely in changing the focus of debate on energy issues.

Even though the Energy Commission was abolished in May 1982, the priority given to coordination has persisted. For example, one of its subordinate units, the Energy Research Institute (now subsumed under the State Economic Commission and the Chinese Academy of Sciences) was assigned the task of reviewing the energy impact of all capital construction proposals submitted to the State Planning Commission. Its analysis was supposed to eliminate projects which could not be supplied with adequate fuel and power without depriving other consumers or requiring ancillary investment in new generating capacity, pipelines, etc.

Overall responsibility for formulating the energy sector plans and coordinating projects to ensure adequate supplies of fuel and power now rests with the State Planning Commission and the State Economic Commission. The evidence to date suggests that considerable progress has been made toward overcoming energy bottlenecks caused by unplanned or poorly coordinated construction and operation of industrial enterprises. Better coordination has also been achieved through the reemerging of the former ministries of water conservancy and electric power (both of which had constructed hydro facilities). The major restructuring of state agencies undertaken in the spring of 1982 also should enhance coordination of energy policy. With fewer organizations, fewer layers of bureaucracy, and fewer redundant functionaries, project review and approval procedures will be simplified and, it is hoped, lead to greater efficiency.

The tenor of economic policy in general facilitates coordination in energy development. Provincial, municipal and enterprise officials are on a shorter leash when it comes to beginning new projects. As a result, there has been a sharp reduction in the amount of new construction, which, in turn, has slowed growth of energy demand.

Several additional steps have been adopted to enhance coordination. Provincial governments and Party committees have been instructed to establish special groups to oversee energy-related matters and to assign clear responsibility for the implementation of energy policies. Regulatory mechanisms are henceforth to be supplemented by a type of outside review effected through the various branches and arms of the People's Bank. More investment capital is to be allocated through loans approved and monitored by agencies of the Bank than through direct grants from central ministries. Before approving any loan, Bank cadres are supposed to review projects to ensure that requisite supplies of fuel and power will be available. There are reasons to question the ability of Bank personnel to conduct thorough reviews of all projects, but this is another step in the right direction.

Coordination does not just mean centralization, however. Indeed, separate corporations more independent of central ministerial control have been established to perform specific functions. Some of these corporations have entered into joint ventures with foreign firms; the China National Offshore Oil Corporation is an obvious example. Moreover, even as the government has tightened planning and control over critical sectors of the economy, it has allowed market mechanisms to operate more freely in secondary areas. This should lead to better energy planning and policies

by enabling the small band of overworked statisticians, analysts, and planners to focus on fewer projects and relationships.

PROSPECTS

China's leaders have undertaken nothing less than the total restructuring of their economic system. Energy plays a key role in their approach and success or failure in the energy sector will strongly influence, perhaps even determine, the outcome of the broader effort. What are the prospects of success on the energy front? What are the implications for the United States?

If left in place long enough, the general approach and specific policies concerning energy now dominant in China could, perhaps will, produce the desired results. On balance, the policies are both appropriate and sound; the unaddressed and unanswerable question is whether or not they will produce enough tangible benefits fast enough to satisfy skeptics, opponents, the public as a whole, or even key supporters.

If one were to predict the future on the basis of China's recent past, the inescapable conclusion is that prospects for policy continuity are not very good. Leaders and constituents eager for dramatic advances have repeatedly demonstrated impatience with policies that "worked" but were too slow. Given the visibility and inherently political character of current economic policies, including those dealing specifically with energy, it seems certain that those who fare relatively badly under policies now in place will do what they can to force change. Rising expectations among the leadership as well as the rural and urban populace will inevitably lead to increased demands and reduced willingness to delay gratification in the name of abstract goals or the larger good. These pressures will be aggravated by demography and disenchantment with Marxism, the Communist Party, and contemporary Chinese society. Cynicism and the implicit question, "What has the Party done for me lately?" undermine the authority of the regime and individual leaders. To restore lost legitimacy, current policies must succeed. If success comes too slowly, current leaders may be tempted to experiment with other alternatives in an effort to substitute motion for movement and to buy more time for themselves.

Though possible, the above scenario is probably less likely than one of basic policy stability with continuous adjustments at the margins, and with intermittent removal of scapegoats who can be blamed if policies fail to deliver as much or as quickly as people have been led to expect. Perhaps the strongest reasons for

assuming such continuity are that the approach is unlikely to fail miserably and that there are no ready alternatives. Weary of unsuccessful experimentation and eager for sustained, predictable, and "sensible" policies, a significant portion of the public is likely to support continuity and to "give the leaders and their approach more time." As long as things do not get worse, they need not improve dramatically to satisfy "the masses." Ironically, greater participation in the world economy and a larger role for transnational and foreign government-owned energy companies will increase pressures favoring preservation of the status quo.

Without substantial policy stability, China will not be able to exploit its rich energy resources fast enough to satisfy growing domestic demand or to provide revenue-generating exports to finance imports of grain, equipment, and technologies needed to prevent slipping even further behind the advanced and rapidly modernizing states with which China wants to be compared.

China's energy balance will not improve significantly during the 1980s. Projects initiated in 1982-83 will not come on line until the latter part of the decade; when they do, output will barely meet increased domestic demand. Even if offshore deposits prove as rich as many hope, China probably will not earn much additional foreign exchange until well into the 1990s because it will need to retain its share of the output for domestic use. It is possible, especially if efforts to locate oil offshore prove unsuccessful, that China might have to import small quantities of oil during the 1980s.

For many reasons, the United States and American corporations will play a central role in the development of China's energy resources. Many technologies and much of the capital needed to locate and exploit deposits of oil, coal, and natural gas must come from the United States. For better or worse, China is going to become more dependent on US firms and its political relations with the United States will become hostage, up to a point, to these economic and energy relationships. Similarly, the US government can be uniquely helpful in the development of China's hydroelectric potential. The government-to-government agreement for cooperation in hydroelectric power and related water resources and its annexes could be extremely helpful to the Chinese and very profitable for American firms.

Should relations between Washington and Peking deteriorate significantly at some future point, it is unlikely that American firms would undertake new energy development projects. Depending on the outcome of President Reagan's attempt to block

the sale of equipment embodying US technologies to the Soviet Union for use in constructing the natural gas pipeline to Western Europe, American firms may find it undesirable to operate in China and China might treat American firms as suppliers of last resort.

While it is true that deterioration of official relations between China and the United States could, probably would, interfere with the development of China's energy resources and realization of its broader economic, social, and political goals, both sides recognize how undesirable that would be. At some point which is likely to be reached relatively quickly, increased energy ties will strengthen and add to the stability of the political relationship.

THE ROLE OF SCIENCE AND TECHNOLOGY IN U.S.-CHINA RELATIONS

Richard P. Suttmeier

In ways that are rather unique among nations, science and technology (S&T) have played an unusually important role in the recent history of U.S.-China relations. It is also the case that US-PRC relations in S&T stand out in the wider context of efforts by the United States to use S&T as instruments of foreign policy. In my discussion here I will attempt to address both of these dimensions of the topic. That is, I want to take as our first point of reference U.S.-China relations generally, regarding S&T relations as a subset of these; and to take as our second point of reference the general phenomenon of international S&T relations, regarding the U.S.-China relationship as a subset here as well. I will attempt to make the case that the significance of our subject is found in both interpretations.

U.S.-China Relations and S&T

At the outset we should note that international S&T relations are conducted in three main modes. The first is what we can call the private, professional mode, which is founded on the principle of universalism in science, and the international behavioral consequences that flow from its observance. In the US-PRC case, we can identify a variety of interactions that would fall under this category. These include the exchange of scientists and students through non-governmental channels (which probably accounts for about half of the 10,000 Chinese students estimated to be in the US at this time), university to university relations, relations between professional societies, and relationships that are maintained by individual scholars.

A second mode is the commercial, one that normally but not exclusively pertains to technology more than to science. There have been a variety of technology transfer schemes worked out between the two sides. The Chinese seemingly would like to get

more out of these relationships, and some American parties may also like to see these develop along a broader front with opportunities for more free wheeling exchanges. However, this mode has been somewhat restricted by American export control politics, as we shall see below.

It is worthy of note that these first two modes both mainly involve the private sector in the US, where a great deal of our nation's S&T is to be found. At the same time, the private sector is much more difficult to mobilize in the interest of supporting directly the foreign policy goals of the government. The third, and somewhat less publicly recognized mode, however, is so mobilizable. This third mode is the intergovernmental. It is characterized by the facts that S&T activities are in some way sponsored by governments for both scientific and technological and foreign policy purposes, and that government agencies and government scientists are the key actors. In addition, when dealing with a country like China, the intergovernmental mode can be thought of as providing a politically based framework for the other two.

US intergovernmental S&T relations with China, in comparison with those maintained with other countries, are now by far the most extensive. These activities are conducted under an umbrella US-PRC Agreement for Cooperation in S&T, and a series of protocols to that agreement signed by US departments and agencies and PRC ministries, academies and commissions. There are now seventeen of these protocols in the following areas:

PROTOCOLS UNDER THE US-PRC SCIENCE AND TECHNOLOGY AGREEMENT

1. Understanding on the Exchange of Students and Scholars. Agreed to October 1978.
2. Understanding on Agriculture Exchanges. Agreed to November 1978. US Department of Agriculture's Office of International Cooperation and Development (OICD)/China State Agricultural Commission. (With the reorganization of Chinese government ministries in May 1982, the State Agricultural Commission was abolished and its responsibilities were handed over to the newly created Ministry of Agriculture, Animal Husbandry and Fishery.)
3. Understanding on Cooperation in Space Technology. Agreed to December 1978. National Aeronautics and Space Administration/Chinese Academy of Space Technology and Chinese Academy of Sciences. (These first three agreements were

made before the establishment of diplomatic relations between the US and China and prior to the signing of the US-PRC Science and Technology Agreement on January 31, 1979. All three were subsequently subsumed under the umbrella of the science and technology accord.)

4. High Energy Physics. US Department of Energy/China State Scientific and Technological Commission (SSTC). Signed January 31, 1979.
5. Management of Science and Technology Information. US Department of Commerce/SSTC. Signed May 8, 1979.
6. Meteorology and Standards. US Department of Commerce/China State Bureau of Meteorology. Signed May 8, 1979.
7. Atmospheric Science and Technology. National Oceanic and Aeronautical Administration (NOAA)/China Central Meteorological Bureau (now the State Meteorological Administration). Signed May 8, 1979.
8. Marine and Fishery Science and Technology. NOAA/China National Bureau of Oceanography. Signed May 8, 1979.
9. Medicine and Public Health. US Department of Health and Human Services/Chinese Ministry of Public Health. Signed June 22, 1979.
10. Hydroelectric Power and Related Water Services. US Department of Commerce/Chinese Ministry of Power Industry. Signed August 28, 1979, by Walter Mondale and Deng Xiaoping.
11. Earthquake Studies. National Science Foundation and US Geological Survey, Department of Interior/Chinese State Seismological Bureau. Signed January 24, 1980.
12. Earth Sciences. US Geological Survey/Chinese Academy of Geological Sciences, Ministry of Geology. Signed January 24, 1980.
13. Environmental Protection. US Environmental Protection Agency/Office of the Environmental Protection Leading Group of the State Council. Signed February 5, 1980.
14. Basic Sciences. National Science Foundation/Chinese Academy of Sciences and Chinese Academy of Social Sciences. Signed December 10, 1980.
15. Building Construction and Urban Planning Science Technology. US Department of Housing and Urban Development/Chinese State Capital Construction Commission. Signed October 17, 1981.
16. Nuclear Safety. US Nuclear Regulatory Commission/SSTC. Signed October 17, 1981.
17. Surface Water Hydrology. US Geological Survey/Bureau of

Hydrology, Chinese Ministry of Water Conservancy. Signed October 17, 1981. (In May 1982 the Ministry of Water Conservancy together with the Ministry of Power Industry was merged into the Ministry of Water Conservancy and Power.)

In addition, four new agreements are expected to be signed in May at the third annual meeting of the US-PRC S&T Joint Commission, the body which oversees the implementation of the umbrella Agreement. These are in the areas of aeronautical science, transportation, nuclear physics and magnetic fusion, and basic medical sciences. (These were in fact signed in Beijing in mid-May 1983 by George Keyworth, Presidential Science Advisor, and Fang Yi, Chairman of China's Commission on Science and Technology—Editor's note).

To get a better sense of the nature of the S&T relationship, let us consider briefly its history. It is helpful to recall that a recurrent theme of modern Chinese history since the middle of the 19th century has been China's attempt to "modernize" through the employment of modern science and technology. Because these efforts at adopting, and adapting to, Western material and intellectual culture often spilled over into the mainstream of Chinese politics, they were often disruptive. But these confrontations with Western culture prior to 1949 did involve diverse forms of what we would now call S&T relations. Thus, one way of looking at the growth of U.S. S&T relations with China during the last dozen years or so would be as a continuation of a century-long, and often highly problematic, Chinese effort to use S&T in modernization.

In the more recent period of the history of Sino-American relations, the distinctive role of S&T comes into sharper relief. In the period between the signing of the Shanghai Communiqué in 1972 and the establishment of full diplomatic relations in 1979, S&T relations with China played an especially important role in moving the two nations toward normalization. Although S&T relations did not, nor could they, substitute for political understandings, the organized and unorganized exchanges of technical personnel between the two countries which began in 1972 were politically significant in contributing to a clarification of each nation's interests. In addition, the prenormalization exchanges have proven to be important to the relative success of cooperation under the terms of the S&T Agreement since its signing in 1979.

The opportunity for the United States more aggressively to use S&T as an instrument of China policy came in 1978. China announced earlier in that year an ambitious new modernization drive, and identified S&T development as the key to the moderni-

zation of agriculture, industry, and national defense. In March, the details of an equally ambitious S&T development plan were announced, including a list of research and development (R&D) priorities. The priorities were in areas where U.S. science had much to offer. A rather obvious supply-and-demand situation had emerged; the challenge was to make a match.

The first major step toward this end came in May, 1978, with national security advisor Zbigniew Brzezinski's visit to China. At that time, efforts were made by U.S. officials to explore with Chinese counterparts the possibilities of expanded S&T cooperation even without normalized diplomatic relations. The Chinese signaled they were ready to move. In July the United States sent a high-level delegation of government science administrators, led by Presidential Science Advisor Frank Press, to further the process. Growing out of this mission were agreements signed in the fall of 1978 for exchanges of students and scholars, and for cooperation in space and in agriculture. These were all subsumed under the umbrella S&T Agreement when it was signed in January, 1979.

The seizing of the opportunity to use S&T in relations with China was not simply a matter of matching Chinese "demands" with U.S. "supplies." Officials in the Carter Administration were prompted by at least three other considerations. The first was long-term global economic concerns while the second was part of the strategy for building a US-PRC political relationship. The former was mainly a U.S. concern for long-term world food and energy supply issues. Simply put, the food and energy demands of a modernizing China were expected to be enormous. The more China relied on international markets for these goods, the more strain would be put on world supplies. Since it was assumed that international instability caused by food and energy shortages was not in the U.S. interest, the U.S. should help China develop its capabilities to meet indigenously as much of its food and energy needs as possible. S&T cooperation, it was thought, would be instrumental for this objective.

The second consideration was part of the Administration's efforts to forge closer Sino-American relations in the interest of increasing U.S. leverage in its dealings with the Soviet Union. This objective, at a minimum, required relations with China that would be stable and capable of sustaining understandings on a range of issues of strategic importance. Administration officials believed that through S&T relations a constituency sympathetic to the United States could be cultivated in China. Also, US-PRC relations could be put on firmer ground if a wide range of

“transnational” relations could be established. The first belief resulted from a perception that the Chinese elite was in the process of transformation (on the bases of both post-Mao/post-Gang of Four changes and generational change), and that a successor generation was likely to be considerably more technocratic in its orientation. Such an elite, it was thought, would be sensitive to what U.S. S&T had to offer China, and thus it would be in its interest to try and maintain close relations with the United States. The second belief held that a wide range of nongovernmental relations with China would create constituencies on both sides that would work to maintain and strengthen the political relationship. The Administration therefore set out to encourage a “web” of commercial and “people to people” relationships of which S&T exchanges would be perhaps the most important part.

What is less clear is the stock that Carter administration officials put in S&T relations as a lever for moving China away from strongly held political values. In particular, it is unclear how strongly, if at all, officials believed that scientific cooperation and liberalized technology transfer would strengthen the U.S. hand in dealing with the Taiwan question. Reviewing that period, it seems that S&T was not expected to carry Sino-American relations through difficulties in which there would be a major political impasse.

A final objective discernible in the U.S. effort to foster an S&T relationship with China was related to trade promotion. Although it is difficult to find any well articulated doctrine explaining how this was to be done, and there is not much evidence that a coherent strategy of implementation was ever put in place, there was a belief that S&T exchange would contribute to facilitating trade.

When the Reagan Administration took office, there were reasons to doubt whether the momentum for S&T cooperation would last. First, Reagan’s position on Taiwan was likely to sour the political framework for S&T. Perhaps just as important, both the Chinese and American governments were instituting stringent budget policies, and under such conditions, international S&T normally would not figure high on the list of anyone’s priorities. What became evident after a few months, however, was that both sides were making significant efforts to protect S&T funding from the onslaughts of their respective budget cutters.

These developments would suggest that at least some interests on both sides were (and are) being served by the relationship, and that S&T can have a cohesive influence on political relations that

become frayed. This is not to say, however, that the S&T relationship is without problems. Funding continues to place a limit on how much can be done. Finding a basis for true reciprocity is another. More importantly, given what appears to be a widespread belief that reciprocity is impossible to achieve and that the Chinese benefit more than we, there appears to be a belief on the American side that the S&T relationship can do more than it was intended to do. That is, that it can be used as leverage on such volatile political issues as Taiwan. While a degree of leverage probably does exist, it would be a sad mistake to overestimate it, as some who are not familiar with China's modern history are prone to do.

On a day-to-day basis the most intractable problem is that of controls over the export of advanced technology to China. The problem here is for the U.S. effectively to link declarative policy with "policy" as understood as the outcome of implementation processes. Under the Carter Administration, the political leadership took what were regarded as the necessary steps to resolve the export control problem. China was decoupled from policy toward the Soviet bloc, and placed in its own policy category, "category P." According to this designation, only technologies of strategic significance—nuclear weapons, delivery systems, anti-submarine warfare, electronic warfare, and intelligence technologies—are subject to controls.

Difficulties arise however when lower level officials are expected to implement this policy with regard to "dual use" items, such as advanced computers, and ones that will contribute directly to the development of China's "infrastructure" for producing the proscribed technologies. The record to date has been one that has created the impression among the Chinese that the U.S. in fact has a policy of denial of export requests. The impression is not without foundation since U.S. export control machinery operates in such a way that it is structurally biased against liberalization.

A final issue facing the relationship is that of whether the U.S. should extend to China some form of concessionary aid. This question is related to the funding issue noted above. While most observers of US-PRC relations would consider it politically infeasible to mount a major foreign assistance program for China, a number of observers have noted that much more could be done to enhance the S&T relationship, in the interest of the political relationship, if modest concessionary financing were available. This is because US intergovernmental S&T programs, including the China program, are as a matter of policy conducted on a

“benefitting side pays” basis. When there is an obvious reciprocity of benefits, the funding of the US participation is constrained only by the budget in force. However, when the benefits to the US are not evident, it is expected that the other side will pay. Since the Chinese are often unable or unwilling to pay, there is much that the US has to offer which would be helpful to China, and helpful to the political relationship, that cannot be made available. It is this situation that leads to the argument from some that modest amounts of aid should be provided.

S&T and Foreign Policy

As suggested above, the US-PRC relationship raises a number of other questions about the role of S&T in foreign affairs. It is an interesting case for study of how a country like the U.S. mobilizes, or fails to mobilize, S&T resources to support foreign policy goals. We live in a world where S&T are highly valued, in large part because of the belief that present and future problems of human happiness and comfort cannot be solved without them. Presumably those possessing the valued goods, of whom the United States is still pre-eminent, can use them to influence others desiring access to them. Thus, the potential for leverage in international affairs exists. The realization of that potential is, however, by no means easy.

In countries like the United States, where so much S&T is in the private sector, the problem of realizing the potential foreign policy benefits from S&T cooperation is particularly challenging. An examination of the US-PRC case indicates that the US side is rather poorly organized to perform this task, and to take full advantage of the opportunities that exist. While centralized direction of both the public and private sectors would not be consistent with our values and traditions, it is also the case that the foreign policy apparatus is rather poorly prepared to face the challenges and opportunities of an international environment in which S&T are highly valued goods.

With this observation in mind let me conclude with a brief assessment of the achievements to date. In terms of political objectives, one must be modest in one’s expectations. Both sides have begun to learn a great deal about each other, and it is clear that both sides now incorporate these lessons into their respective policy deliberations. A web of relationships has developed and the United States has been able to have access to an emerging, more technocratic elite. The long-term political benefits of this, however, are not clear and should not be overestimated.

While many of the scientific benefits, particularly in the

exchanges of students and scholars, have gone to the Chinese, it would be a serious mistake if benefits to the US were not recognized. These are most evident in those protocols where there are the most activities: agriculture, earthquake predictions, oceanography and atmospheric sciences, and medicine and public health. These of course are areas where unique features of the Chinese setting, to which foreign scientists were for a long time denied access, now have become very interesting and researchable phenomena. In addition, in a more diffuse sense, American scientists welcome the opportunities to interact with a scientific community with many exceptional minds, even if the performance of the community as a whole is still not up to the world's leading standards.

Perhaps the most conceptually challenging, yet most difficult question to assess is whether commercial interests are served by cooperative science programs. There is no way to know whether increased trade can be attributed to increased S&T exchanges. In some cases, particularly those pertaining to the supply of technical services, there have been allegations from the private sector that government cooperative programs in effect undermine commercial ventures. Nevertheless, one can postulate a number of reasons why S&T exchanges should be expected to facilitate trade expansion.

For instance, exchanges should provide more intimate knowledge of market possibilities for both buyers and sellers. Chinese scientists working in the United States should be expected to develop a type of "product loyalty" for the technology of research which could carry over to respect for the technology of production as well. Of particular interest is whether close S&T cooperation will produce commercial benefits to the United States now that substantial credits are available to China through international lending agencies.

Some have hoped that the existence of an S&T agreement would facilitate the export licensing process, although the basis of this belief is uncertain at best. In the longer run, of course, to the extent that S&T exchanges contribute to Chinese modernization, one could expect that a more prosperous China would also be a larger market for American goods. The trade promotion potential of S&T agreements may not be realizable without concerted efforts to realize it, and with a few notable exceptions such as the Department of Agriculture, the record to date frankly does not reflect well on the US government's ability to coordinate effectively S&T relations, export promotion, and export controls.

To the extent that a minimal objective of the S&T agreement

was to build bridges to China and begin to overcome 30 years of mutual ignorance and hostility, it is fair to conclude that it has been successful. I take as three important indications of this success that, first, consultations between participating agencies now occur frequently; that both sides now take into consideration the interests of the other in their own planning and that both sides have made notable efforts to protect program-related budgets in the face of general budgetary stringency; and that China now has an interest in continued cooperation with the United States. In addition, the United States has successfully made it known in ways it had not prior to the agreement that, like the Europeans and the Japanese, it has a stake in China's modernization and that it has much to offer.

Whether the S&T agreement offers particular leverage in dealing with China on a range of "high politics" issues is, however, another matter. As noted above, S&T agreements, however much they can be supportive of political understandings, are no substitute for the latter. Thus it seems unlikely that promises of S&T cooperation can be used to induce other nations to alter significant political positions. This is particularly so when the other nation, in this case China, has alternative partners for scientific cooperation and supplies of technology. Whatever the source, however, China's S&T relations are of interest finally in one additional sense. This is as a case (and given its history, a special one) of how a developing country absorbs not just foreign S&T, but more importantly how it responds to the cultures and institutions of nations considered to be "advanced" on the basis of their scientific and technological achievements. While the experience of the Soviet Union suggests that it would be illusory to believe that foreign S&T interactions necessarily become a force for domestic economic and political reform, it is also true that one cannot seriously discuss the extremely interesting reforms now going on in China without reference to the influences that intimate contacts with the West in the S&T area are having.

FINANCING THE FOUR MODERNIZATIONS: CHINA'S CAPITAL INVESTMENT NEEDS AND THE INTERNATIONAL CAPITAL MARKETS

Paul Marer

Introduction

The postwar foreign economic policy of China has been characterized by dramatic shifts, reversals, and zigzags. Two major influences have been clashing: isolationism and self-reliance vs. interdependence and pragmatism.

Ideological extremism, bitter historical experience and national and regional pride are some of the forces that have pushed Chinese leaders to pursue, at one time or another, a policy of extreme isolationism and rejection of all foreign influence. Their bitter historical experience is especially important. From the mid-19th to the mid-20th century, China was repeatedly humiliated and dominated by foreign powers, depriving her by force of arms of valuable territory, tariff autonomy and customs control. After 1960, China's break with the USSR imposed very considerable economic hardship as the Russians withdrew their experts and technical aid and largely severed trade relations. The policy of isolationism was carried to extreme during the Cultural Revolution, 1966-1976. During much of that decade many enterprises virtually ceased operations, most universities and scientific establishments were closed, the legal system was abolished, and intellectuals and the professional staff of economic agencies were sent to the countryside and persecuted. The management of the economy was taken over by young and largely ignorant Red Guards and "revolutionary committees" advocating economic self-sufficiency at all levels. Except for the persecuted intellectuals and professionals, everybody was to have the same low

income and minimum standard of living, regardless of ability, achievement, and effort.

Although during the postwar period foreign trade had increased—from very low levels—erratically in some years, the basic objective was to import only goods which could not be produced in China or which were needed to compensate for unforeseen domestic production shortfalls. Exports were given up reluctantly, to pay for imports. Commercial and financial intercourse with the rest of the world was largely limited to simple “cash and carry” transactions.

At the same time China always had leaders, sometimes silenced, who were pragmatic in their thinking. They realized that cooperation with foreigners can help the country overcome its immense economic problems. Since the death of Mao Zedong in 1976, many of these pragmatic leaders have been in charge of policy and have introduced fundamental changes in the domestic and foreign economic strategies of the country. The new leadership has made some progress in reconstructing the educational, planning and statistical bureaucracies and has pursued policies to try to link economic achievement and reward, in some areas relying on the market mechanism in ways that only a few years ago would have been condemned as “capitalist” and its advocates jailed, even executed. The about face is especially notable in agriculture, where price incentives have been introduced and production responsibility again placed in the hands of families or small groups. Individual peasants now have the right to employ others and are told to enrich themselves; many have and are continuing successfully to do so. Small-scale private enterprise is also allowed; today there are 1.5 million licensed private ventures and much unlicensed private activity is tolerated also.

Since the Cultural Revolution, China’s leaders have also moved a remarkably long way toward greater participation in the world economy. Foreign commerce has increased considerably, and the ideological aversion to foreign borrowing has been muted. Trade with the U.S. has grown dramatically, especially after the normalization of diplomatic relations in 1979. China has also joined the International Monetary Fund (IMF) and the World Bank in 1980, significantly decentralized its foreign trade operations to promote direct foreign contacts at the enterprise level, welcomed partly or wholly foreign-owned direct investment, and established four special economic zones where Western firms can operate in an environment that in many ways is similar to that of a market economy. People to people contacts have also exploded, with nearly 10,000 Chinese students studying at American uni-

versities alone and over 100,000 Americans visiting China each year as tourists or in professional capacities.

These developments signal a basic change in the attitude of the current leadership regarding the role of international economic and financial relations in the economy of China. Imports are viewed not simply as temporary expedients but as examples for domestic enterprises to follow. The role of exports is not just to finance essential imports but also to expose Chinese firms to foreign competition and to create new employment opportunities. Foreign direct investment is encouraged as a means of creating new jobs, obtaining additional scarce capital, and as a channel for absorbing foreign technology and management skills.

China's new domestic and foreign policies are welcomed warmly by the U.S. and other Western countries because they move China further away from the USSR and create welcome business opportunities. At the same time, a few people also recognize the danger of China's moving too quickly too far because that could increase the chances that once again the pendulum might swing in the other direction. At the practical level, moving too fast may also create expectations on both sides that cannot be fulfilled to the satisfaction of either party.

Financing the Four Modernizations

Having sketched this broad general background, let us take a closer look at China's recent plans for modernization and how implementation has been proceeding, focusing on the international financial aspects.

The four modernizations refer to extremely ambitious plans promulgated after the Cultural Revolution to improve China's industry, agriculture, science and technology, and defense capability by the year 2000. The most concrete manifestation of these plans was the Ten Year Plan for National Development, 1976-1985.

To reach the Plan's ambitious growth targets, 120 very large new industrial investment projects were to be completed during those ten years, including ten iron and steel complexes, nine nonferrous metal complexes, eight coal mines, ten oil and gas fields, thirty power stations, six railways, five harbors, and numerous other infrastructure and manufacturing projects. China has not released estimates of the total cost of the projects, but the foreigners who consulted on many of them estimated that China would have needed upwards of \$300 billion in new investment capital, of which about \$70-80 billion would have had to be spent to pay for technology and equipment purchased abroad. Relying

on much too optimistic forecasts of domestic oil and coal production and of world energy prices, Chinese planners were counting largely on increased revenues from exports to bankroll the foreign exchange cost of the projects. Although it has now been revealed that on most of the projects there were no economic feasibility studies (in fact many were extraordinarily poorly prepared even in engineering terms), China's Ministry of Foreign Trade began acting on the projects. By the end of 1978, China had negotiated for or expressed interest in about \$40 billion worth of complete industrial plants. During 1978 alone, more than 500 Chinese delegations traveled to Western countries to shop for technology and equipment.

The enticement of the huge China market may have played a role in the U.S. decision at the end of 1978 to establish diplomatic relations early in 1979. Although the U.S. embargo on commercial relations with China was lifted in 1971, the most important steps in the process of commercial normalization were taken only in anticipation of or after full diplomatic recognition. A 1978 law authorized the PRC's access to some U.S. Commodity Credit Corporation (CCC) programs, helping to finance U.S. agricultural exports, which increased threefold between 1978 and 1982. A bilateral trade agreement was negotiated, providing among other things most-favored-nation (MFN) status and access to Export-Import Bank credits for China; this was approved by Congress in 1979. China's eligibility for Overseas Private Investment Credit (OPIC) insurance programs was granted in 1980. With respect to U.S. foreign economic policy, these actions have placed China at least in the same favorable position as the more favored European Communist countries: Poland until December 1981, Romania until MFN status was withdrawn in 1982, and Hungary.

During 1977-79, China and Western countries were feverishly negotiating official government and private commercial credit facilities, with China insisting especially on low-interest rates and skillfully playing one Western country off against the others. By the end of 1979, China had obtained firm commitments of more than \$17 billion in *official* export credits (\$7 billion from France, \$5 billion from the U.K., nearly \$2 billion each from Japan and Canada, \$1 billion from Italy and smaller amounts from Belgium, Sweden, and Australia), plus over \$10 billion in *commercial* lines of credit. By the end of 1978 China had signed more than \$7 billion in contracts to import turnkey plants, including several substantial deals with U.S. firms. This period is now characterized by China as a "leap outward" to foreign countries for capital and technology, in contrast to the earlier Great Leap

Forward (1956-1960), which relied on domestic mobilization of capital and labor.

At the end of 1978 China's leaders made a series of decisions that caused the speeding China train to slow suddenly and to lurch in a different direction. A large number of investment projects were halted. The leaders realized not only that many projects were ill prepared, but also that there were severe constraints on China's ability to absorb quickly large amounts of foreign technology: bottlenecks in infrastructure, lack of skilled labor and technical-professional people, and widespread absence of managerial knowhow. After the splurge of 1978, China's balance of payments also showed much larger than planned deficits. Perhaps most important, a politically-based decision was made that—at least temporarily—the highest priority should be given to improving the standard of living. This required that agriculture and light industry be supported. So for this reason, too, investments were substantially cut, among them many of the 120 projects for which numerous foreign contracts had already been signed. Several hundred large but purely domestically financed projects were also suspended during 1979-1980.

In February 1979, the Ministry of Finance notified twenty Japanese firms that \$2.6 billion of signed contracts had failed to receive Bank of China approval, so that the contracts and associated financial commitments were suspended. At the same time, a moratorium was ordered on signing major new contracts. The contract cancellations were headlined in the world press. Less known are that (1) the Chinese were within their legal rights to cancel under the fine print escape clauses in the contracts; (2) when such clauses were not included or not applicable, the Chinese side paid the financial penalty specified in the contract; and (3) some of the signed contracts were reinstated in later months. When negotiations on turnkey projects were resumed during the second half of 1979, a clearer sense of priorities became evident, for example, in stressing thermal and hydroelectric projects. But foreign steel firms that during 1978 had been negotiating contracts worth \$20 billion were told that most of the projects were being shelved indefinitely.

What happened in China after 1979 cannot be understood without mentioning a series of policy decisions to decentralize economic decision-making in the areas of production, investments, finance, and foreign trade. The sudden decentralization was in good measure responsible for the paradoxical events after the so-called "readjustment program" was introduced at the beginning of 1979.

In 1979, the value of capital construction projects *financed by the state budget* remained at the same level as in 1978 (39.5 billion yuan), and declined by almost 30% in 1980 (to 28.1 billion yuan). But *total investments* in capital construction continued to grow:

1978	47.9 billion yuan
1979	50.0
1980	53.9

This pattern derived from the fact that, due to decentralization, investments financed from *outside the state budget* increased sharply, more than tripling from 1978 to 1980:

1978	8.4 billion yuan
1979	10.5
1980	25.8

Capital construction requires skilled labor, machinery, and a wide range of material inputs, most of which are also needed by existing factories in their manufacturing operations. The unplanned expansion of investment spending thus tends to cut the supply of resources available to the rest of the economy and to lead to lower current output, excess capacity, and shortages; these in turn cause delays in completing the ongoing capital construction projects.

Further complicating the investment situation were the large, unplanned deficits which were incurred in the state budgets of 1979 and 1980. These occurred for four main reasons:

1. Excess investment spending by enterprises and regional authorities lowered state budget revenues;
2. Industrial wages and bonuses were boosted, which reduced enterprise profits and state revenues as well;
3. Agricultural procurement prices were increased while retail food prices were kept unchanged, requiring larger subsidies;
4. The substantial cost of China's 1979 military offensive in Vietnam had to be financed.

To make up part of the deficit, the government printed money, thus generating inflationary pressures; in some ways this was analogous to budget deficit-triggered inflationary pressures in Western countries. Fundamentally, inflationary pressures emerged because increases in consumer purchasing power, investments, and government spending exceeded the growth of output.

Open inflation—which accompanied decentralization and the growth of private markets—is a special anathema to conservative Communist regimes. It triggered an even more drastic second

adjustment at the beginning of 1981—exactly two years after the first adjustment. Most state budget expenditures were cut, but capital construction spending was slashed by far proportionately the most (in billion yuan):

	Total Investments	Financed by state budget	Outside the state budget
1980	53.9	28.1	25.8
1981 (original plan)	55.0	24.2	30.8
1981 (revised plan)	30.0	17.0	13.0

Thus, in 1981 centrally- and locally-financed investments declined by nearly 50% from levels reached earlier. A large number of ongoing projects, including many for which imports were scheduled from the West, were suspended or cancelled. Investment and foreign trade decisionmaking were also significantly recentralized. The series of contract cancellations with foreign, including U.S., suppliers again made international headlines.

Drastic reductions in investments necessitated temporary reductions in heavy industrial output, so that in 1981 production fell by more than 4% while light industry expanded at double-digit rates for the second year in a row. Light industry growing more rapidly than heavy industry for a few years has given rise to much speculation in the West that China may be abandoning the traditional Communist economic strategy of giving the highest priority to the generally less efficient heavy industrial sector. The Chinese, by contrast, are talking only about a readjustment. The figures for 1982 bear them out: heavy industry grew by 9%, light industry by 5.6%. In agriculture, good weather and a policy of incentive and increased economic freedom that has been in effect since 1978 have reinforced each other to yield an average annual output increase of about 7%.

Since 1977, China's exports have increased substantially every year while import growth has been very erratic, reflecting the harvest-determined need for grain and other agricultural products and the wide swings in investments. During both 1981 and 1982, total imports declined. In 1982 China had a \$5 billion trade surplus. Since its foreign indebtedness is low and the country has considerable invisible earnings, China's current account was also in surplus. This means that China has become a significant net lender, not a borrower, on the international financial markets.

Thus, although since 1978 China has worked hard to line up about \$30 billion worth of official and private credits, it has taken

very little advantage of its borrowing opportunities. This is in part because of its traditional abhorrence of debt, in part because of the high interest rates which it loathes to pay, in part because of the example of Poland's, Romania's, and many less developed countries' debt-servicing problems, and in part because of its relatively strong current account position. In fact, since 1979 the Bank of China has loaned \$3.5 billion to enterprises in Hong Kong and has taken part in fifteen Eurocurrency syndicated loans totaling \$1.5 billion, acting as principal lender or co-manager. The Bank of China has also taken over the foreign financing of several projects in China and has begun to extend low-interest credits to those purchasing Chinese ships and machinery. But China is not averse to borrowing if it needs money and the terms are right, as shown by its activities in the IMF and the World Bank, which it joined in 1980. Some experts in the West believe that China's program of readjustment may well be coming to an end, and that now (mid-1983) the country is poised to undertake a large investment and import program, for which it will need substantial foreign financing. This view appears to have good rationale and precedents to support it.

When in 1980 China joined the IMF, its quota was set at SDR 1.8 billion, which has made it the eighth-ranking member (after the US, Britain, West Germany, Japan, France, Saudi Arabia, and Italy), replacing India which moved down to the ninth-ranking spot. Since Peking took over the membership from Taiwan, it was able to join without having to put up any resources. Long ago Taiwan paid in 470,000 ounces of gold as its (25% of quota) membership contribution, using gold Peking says belonged to China. The arrangement worked out was that Taiwan sold the gold to the IMF at the former official price of \$35 an ounce plus one-third of the difference between the official price and the then current market value of gold, leaving behind two thirds of the increase in the market value, which covered China's reserve tranche contribution to the IMF. In 1980 China borrowed its first (reserve) tranche of SDR 450 million. In March of 1981 the Fund approved China's request for a stand-by arrangement in the first credit tranche, authorizing purchases of up to SDR 450 million over a 12-month period to support China's 1981 economic stabilization program.

China is also a member of the World Bank, where it qualifies for special, highly concessionary (International Development Association) loans—i.e., with fifty year maturity at approximately one percent interest. In early 1983 China received two loans totaling about \$300 million to develop two oil fields.

To summarize, there are four types of financing to which China (or any country) potentially has access:

1. Loans from international and regional financial institutions, such as the IMF and the World Bank.
2. Loans and guarantees from official government agencies, such as the Eximbank and CCC in the U.S. So far China has taken up only a fraction of the credit lines offered by Western governments, probably borrowing not more than about \$2 billion.
3. Credits from private sources, for example, from suppliers or from commercial banks. So far China has used these facilities sparingly; its outstanding medium- and long-term debt in this category is probably under \$5 billion.
4. Direct foreign investment, i.e., equity capital, where foreigners invest in joint ventures and wholly-owned subsidiaries. Since 1979 China has been permitting and encouraging foreign investment, especially in its four special economic zones, all located strategically close to Hong Kong. By June 1983, \$5.8 billion in foreign investment commitments had been made (*The Wall Street Journal*, July 7, 1983), although only a fraction of that amount had actually been disbursed. Between 1979 and the end of June, 1983, China reportedly signed 10,000 joint ventures and other types of investment contracts with foreign firms, most of them small (Liu Shulong, deputy head of the Department of Planning of the Ministry of Foreign Economic Relations and Trade, speaking at an investment seminar in Hong Kong).

Foreign Investment in the Special Economic Zones

As far as the legal framework for direct foreign investments is concerned, China's laws are the most liberal among the Communist states, matched only by Hungary since last year. In particular, the facts and implications of foreign investment in the special economic zones are most interesting. These zones are capitalist-type enclaves where foreign firms are permitted to set up wholly-owned production facilities, to have the right to hire and fire workers, to reward hard work with pay scales two to three times the average wage in China, and to adjust production plans in response to shifts in foreign market demand. The attractions for foreign firms are cheap labor, inexpensive land, and low taxes, but there are very serious problems also. These include lack of developed infrastructure, untrained and inexperienced labor, low productivity on the part of workers and managers, uneven product quality, and a huge government bureaucracy that can cause production delays. All these raise costs of production unpredicta-

bly. Foreign-owned enterprises in the special economic zones and joint ventures located there and elsewhere in China do not have automatic access to China's domestic market but must export most or all of their output. The few ventures that are allowed to sell in China usually face strict market limitations. For example, the Camel factory is prohibited from marketing cigarettes outside the special economic zone where it is located, as are most others.

Three of the four zones are in Guangdong Province—Shenzhen, Zhuhai, and Shantou. The fourth is Xiamen, in nearby Fujian province. Shenzhen (150 square miles) is by far the most important, with Zhuhai a distant second, both located next to Hong Kong. The other two zones, in nearby seaport towns, are still in the preparatory stage. Much of the investment, entrepreneurship, and export business generated by firms located in the special economic zones originates in Hong Kong, one of the most purely capitalist bastions of free enterprise anywhere to be found.

The attraction for China is that these ventures generate foreign exchange, bring in capital, create jobs and train workers. As of mid-1983, China is considering steps to ease further its investment regulations, simplify investment procedures, and once again delegate more power to provincial authorities to sign contracts. According to the official of the Ministry of Foreign Economic Relations and Trade previously cited, foreign funds would be used mainly to develop energy resources, construct transportation facilities, and renovate industrial enterprises (*The Wall Street Journal*, July 7, 1983).

The problem for China is the incompatibility of capitalist ways of doing business—and of capitalist values—in the special economic zones with the traditional, egalitarian, and highly regimented modes of operation elsewhere in the country. There is also the danger of a political backlash which could radically alter, once again, China's domestic as well as foreign policies.

The problem of compatibility is a serious one already, as described by a recent report in *The Wall Street Journal* (March 3, 1983):

Guangdong province "hasn't gone capitalist" and still practices socialism, a senior provincial official vigorously maintained at China's recent National People's Congress in Peking.

The Guangdong official's defensive remarks indicate that ideological conflicts have intensified between the province, which borders the capitalist bastion of Hong Kong, and other parts of China. . . . its proximity to Hong

Kong has meant that it is the most open to outside influences.

Its liberal trade policies, adopted three years ago, have given an important boost to China's economic growth. But in addition to foreign investment, the policies also have given Guangdong more opportunities to experiment with capitalism and to absorb what Chinese leaders consider undesirable bourgeois values from the outside world.

Some of those values are spilling over into other provinces, sparking resistance. At the National People's Congress, the Guangdong official charged that some inland provinces had begun discriminating against travelers from Guangdong. When employees of Guangdong state-run enterprises arrive at train stations outside their home province, they are separated from other travelers, questioned, and, in most cases, their luggage is searched, he said.

The inland-province officials apparently are looking for consumer goods. Tape recorders, television sets and the like are relatively easy to get in Guangdong, unlike in the rest of China, because they are either smuggled in or brought in legally by relatives from Hong Kong. Guangdong entrepreneurs then smuggle the goods to neighboring provinces, where they reap hefty profits.

Officials in the inland provinces are angry because such black-market activities muddle their economic plans and spread consumerism and hedonism. It is also likely that they are jealous of Guangdong's special status.

Because of the open-door policies, between 80% and 90% of foreign investment in China from 1979 to 1982 has been in Guangdong. And Guangdong residents enjoy a substantially higher standard of living and a degree of ideological independence unmatched elsewhere in China.

This is largely due to the influence of the British colony of Hong Kong, most of whose 5.5 million residents have roots in Guangdong. About one million Hong Kong people visit their hometowns in Guangdong each year bringing with them foreign exchange and consumer goods as well as capitalist values. Many Guangdong young people ape Hong Kong fashions, listen to Hong Kong radio stations and watch Hong Kong television stations, which broadcast many programs from Europe, Japan and the U.S.

Pressed by Peking, the Guangdong government campaigned against bourgeois influences in late 1981. It tried to persuade local residents not to watch Hong Kong TV programs in a bid to avoid being "poisoned" by capitalist vices. The campaign failed.

To stop smuggling to other parts of China, the provincial government last year prohibited the resale of imported

consumer goods without special permission. And it accelerated the fight against economic crimes such as corruption and smuggling.

The official goal seems to be to bind Shenzhen ever more closely to Hong Kong and to isolate it (and the other economic zones) more completely from the rest of the country. The customs check between Shenzhen and Hong Kong will end soon, at which time the customs and passport checkpoints will be relocated to the China-Shenzhen border.

Another interesting new development has just been reported by *The Wall Street Journal* (June 28, 1983). In addition to the equity participation foreign companies are allowed to have in the zones and in other China-based joint ventures, foreign investors can now also buy shares (up to 49% of total holdings) in designated Chinese state enterprises operating in the special economic zones. It has been officially announced that a few such Chinese companies intend to issue common and preferred stocks as well as bonds for sale abroad.

Another prospective new development is direct investment by China in existing firms in Western countries as a way of acquiring some of the raw materials as well as technology and know-how China needs. The first such venture was the purchase by the Nanjing Telecommunications Works of \$2 million of convertible preferred stock of a U.S. manufacturer of computer printers, Santec Corporation, headquartered in New Hampshire.

Although the significance of all these new steps for altering China's centrally planned economic system should not be exaggerated, they do signal a surprising willingness by China's leaders to experiment with new ways of financing the four modernizations.

Conclusions

1. In principle, a country's demand for foreign capital is constrained by one of two considerations: the need to remain creditworthy, i.e., to maintain a reasonable debt-service ratio; and the need to ensure that the resources borrowed or invested from abroad are used wisely, yielding a rate of return in excess of cost. While nearly all developing countries today face the first constraint, for China the second consideration is much more important. That is, while China remains eminently creditworthy, its ability effectively to absorb a large inflow of resources is yet to be demonstrated.

2. China's foreign economic policies have been unsteady. From a foreign point of view, decisionmakers often appear to

follow puzzling zigzags. Although the post-Mao leadership has been pushing a policy of opening ever wider China's windows and doors to the world market, the policy has been implemented in an inconsistent fashion. This sometimes reflects a lack of sophisticated understanding of the consequences of their own plans and actions, which therefore require frequent revisions. At other times it reflects experimentation, and at yet other times the occasionally arbitrary policy consequences of domestic political disagreements.

3. Even if China were to continue on its course of economic liberalization, that path does not automatically assure economic success in the long run. Among the many problems and pitfalls, a particularly important one is that in the absence of correct prices, allowing market forces to play some role in resource allocation may yield outcomes that are not necessarily positive, especially outside of agriculture. Furthermore, it is not clear how incentive wages can be introduced in Chinese factories when there is so much surplus labor inside and outside the factory gates. The impact of the special economic zones on labor morale elsewhere in China is another imponderable.

4. It is difficult to say how long China's domestic and foreign economic liberalization will continue. The top of the current leadership hierarchy is committed to the current policy, but the lower level party hierarchy has neither the experience nor the vested interest to implement it. Whether a new party and professional elite can be created, and in a timely fashion, to make the new policies work is an open question. On the other hand, the more quickly and daringly economic liberalization is introduced, the greater the danger of mistakes and some kind of an economic and political backlash.

5. At present, there are potentially lucrative trade, investment, and banking opportunities in China. The risks, however, are also considerable, for the reasons enumerated.

6. It is not possible to predict scientifically the long run economic policies and performance of China because there are too many complex variables that affect policies and outcomes. But those who understand the historical, cultural, political, and economic forces at work, and their interactions, are less likely to go wrong in their forecasts than those who rely on partial assessments only.

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SINO-AMERICAN RELATIONS: A NEGATIVE RATCHET PROCESS?

David M. Lampton

U.S.-China relations truly are at a critical juncture. While we are moving away from a naive and unrealistic euphoric sense that there are no bounds to what we can accomplish rapidly, and that is good, we also are seeing an erosion of mutual confidence through the cumulative impact of individually minor events—that is not healthy. Americans now are learning the limits that a relatively free and open society is encountering in dealing with a still secretive, closed, and command society. The Chinese, for their part, are experiencing the frustrations of dealing with a pluralist system. Once grandiose expectations for trade with The People's Republic (PRC) are running up against the reality that a poor country cannot afford to buy much. This is a healthy process, if disillusion, mutual dissatisfaction, and suspicion do not exceed the capacity of our respective political systems to manage. We must move ahead positively in those areas where genuine progress is possible, as I believe it is. At the moment, however, serious retrogression is a distinct possibility. That could, in turn, jeopardize the global strategic vision which brought us together in the early 1970s.

I shall outline the dimensions of the problems which currently exist between China and the United States and then pose two additional questions: What does past experience tell us is the origin of these difficulties? Where do we go from here?

Assessing Today's Relationship

In assessing the state of bilateral relations today we first must ask, compared to when and what? If our point of perspective is 1950, today's relationship with the PRC is so much better along every dimension that elaboration is not required. We have gone from a period of no trade, no cultural exchange, no tourism, no student exchange, no scientific cooperation, and war to a relationship that has developed substantially. If our perspective is 1972 and the Nixon trip, things have evolved considerably since then.

If we go back only to the first half of 1978, prior to normalization, our relationship is considerably more extensive. Trade has grown greatly, we have students and researchers in both countries, and there is a network of interagency bilateral agreements connecting, however tenuously, the bureaucracies of our two countries. If, however, we use as our baseline for evaluation the late 1978 to early 1980 period, there has been some significant deterioration in the relationship between Washington and Beijing.

As the Chinese say, "the river doesn't freeze in a single night," and so it has been with the ties between our two nations. A number of individually minor events are having a destructive cumulative impact. Five broad areas of friction are particularly important, with Taiwan and technology transfer issues assuming the greatest importance.

First, during the 1980-1982 period, Sino-American trade was up 7.9% (in current dollars), not really an impressive performance, if inflation is taken into account. Although it certainly is unrealistic to expect the rapid growth rates of the previous period, there has been a genuine decline in the rate of trade expansion. This slowdown reflects retrenchment in both countries, a worldwide economic slowdown, and a conscious Chinese decision to shift purchases away from the U.S. in some cases. In 1982, trade between the U.S. and China dropped 6% over 1981. U.S. exports to China were off 19% during the same period. What accounts for this? Most of the explanation has been budget deficits in China, runaway capital construction and Beijing's recognition that the importation of foreign technology requires massive collateral investments in supporting infrastructure.

More recently, however, conflicts in the economic relationship have intruded. For instance, the on-again off-again textile talks (resumed in March 1983) have floundered because the two sides are unable to reach agreement on import quotas and categories of products to be covered by quotas. The U.S. has unilaterally imposed its own textile quotas on the Chinese pending final resolution of the issue. The Chinese, in turn, retaliated by saying they would not buy U.S. cotton, soybeans, and synthetic fibers and that they would buy grain from other suppliers whenever possible. Parenthetically, this move involved considerable symbolism. Beijing selected its targets carefully, cutting off imports of products for which there already were excessive stockpiles or of products which have seen significant increases in domestic production.

Another problem is intruding into the trade relationship and its potential for damage may be more far-reaching than that of the

textile issue. This problem also demonstrates how far the Chinese are from understanding how our political and institutional system works. A U.S. court has enjoined the Chinese government to assume the liabilities of the Qing Dynasty to foreign (American) bondholders of the Huguang Railroad. The Chinese Nationalists had long ago repudiated the obligations of the Qing Dynasty (which fell in 1911) and Beijing predictably has repudiated the U.S. court's judgment, claiming sovereign immunity. Moreover, Beijing simply does not find it credible that Washington cannot control the courts, if it but had the will. If the court and the plaintiffs seek to attach Chinese property in the U.S., the Chinese already have said that they too would retaliate. As we have seen in the issues of textiles and defections (below), the Chinese will retaliate. There is a ratchet effect with each cycle locking the relationship into a new low.

Turning to the cultural and education area, we have a number of points of friction. During 1982, I was part of a group which held a series of discussions with various Chinese officials, one of whom was China's Minister of Culture Zhu Muzhi. The Minister spent a significant period asking for our delegation's help in correcting what he called "certain unpleasant things" in Sino-American relations. He apparently had in mind issues such as the defection of cultural and sports personalities and a spate of stories in the American media about looming defections among Chinese students and scholars. Indeed, some reports assert that as many as 1,000 of the approximately 9,000-10,000 Chinese students and scholars now in the U.S. already have approached (or may be about to approach) the U.S. government. Information I have indicates that this number is far too high. Beijing clearly would like Washington to assure the return of Chinese citizens. But, there is little way that we can accommodate Beijing on this point and remain consistent with deeply held values in our own society. Moreover, no politician wants to bear the onus of forcefully repatriating people. The recent rupture of official cultural relations between our two countries over the issue of granting asylum to the tennis star Hu Na shows just what potential havoc this can cause.

Another issue in the cultural realm concerns Chinese access to American information, technology, and society, especially when some Americans perceive a lack of reciprocity. At present, there are about 9,000-10,000 Chinese students and scholars in the United States. The access of American scholars to China has been both numerically and qualitatively less, and there has even been some recent slippage in this. However, it is unclear what reci-

procuity means in the context of two such different societies. Even murkier is the issue of how a more equitable relationship can be achieved. Finally, if one were to seek to restrict Chinese access to our technology, how could that be done within the framework of prevalent U.S. academic freedoms and the widespread diffusion of information? Most basic of all, is it in our long-run interest to impede the flow of most technical information to China? (More on technology transfer below.)

The Chinese also have not been entirely happy with the explosion in the number of their students in America. Beijing did not anticipate, I believe, how much education here costs. Consequently, Beijing intends eventually to reduce the number of students and scholars studying here to something like 4,000-5,000 persons. Most immediately, apparently China will cut the number of government-funded students and scholars by 20 percent. Last year, the regime began to clamp down on exit visas for would-be students and scholars who were not state-supported.

The problems being encountered in the educational exchange have deep cultural roots, as well as roots in the obvious differences in our socio-political systems. For example, when abroad, Westerners expect the host government to provide clear legal guidelines to govern behavior. In China, however, law historically has played a much diminished role, and even when it exists it frequently is vague. And so it is with China's State Secret Law. The law prohibits the transfer to foreigners of broad and vague categories of information and concludes with the catch-all phrase, and "all other state affairs which should be kept secret." While all states have a right and a duty to protect national security information, the Western researcher chafes under the ambiguity. Western scholars, and the Chinese with whom they must deal, are unsure where the bounds of the permissible may be. Moreover, Chinese scholars, who frequently have less access to information than many of the visiting American researchers, are justifiably resentful.

Another area of anxiety in Sino-American relations concerns Beijing's pas de deux with Moscow. The Chinese and the Soviets recently have concluded a second round of negotiations directed toward eventual normalization of their relations. We must fully expect that, over time, there will be an improvement in their bilateral ties, that the improvement will, in all likelihood, be gradual, and that it will expand from trade and culture to limited military disengagement. Indeed, on March 10, 1983, China and the Soviet Union reached a trade agreement which will triple trade levels for 1983, though the absolute value of the commerce

still is a modest \$1 billion. Too, the Chinese are preparing to receive some Russian students and recently some Chinese academics have traveled to the Soviet Union. When I was in China during the summer and fall of 1982, newspapers were calling for increased emphasis on Russian language instruction and the bookstores were stocking more Russian language materials. A recent report in *Far Eastern Economic Review* suggests that China (at least from the Chinese perspective) may have softened its negotiating position with respect to the border issue and the conditions for normalization.

Parenthetically, it is a profound mistake to assume that a high degree of hostility between the Chinese and the Soviets is an enduring feature of their relationship. Middle-level managers and cadres whom I met in China frequently had been educated in the Soviet Union in the 1950s, some spoke Russian, and many individuals have fond memories of that era of amity. People trained in the Soviet Union in the 1950s are moving in increasing numbers into significant policy positions today. The implications of this are unclear.

Paralleling recent changes in the Sino-Soviet relationship has been a pronounced Chinese tilt toward the Third World. The most conspicuous manifestation of this "new look" policy was Premier Zhao Ziyang's multi-nation tour of Africa in December 1982-January 1983. The Chinese are pursuing a policy of *diplomatic independence* from the superpowers and emphasizing "South-South" cooperation, while simultaneously trying to preserve the economic, educational, and technical advantages of the links to the West. Consequently, there has been a decided shift in the rhetoric used to describe the world and America's role in it. While expected, the rhetoric which accompanies this more independent line is worrisome. The Chinese position seems to be evolving toward the view that "imperialism" (the U.S.) and "hegemonism" (the Soviet Union) are coequal threats to global peace. Sometimes the formulation is that both superpowers are simply hegemonist. This line began to strongly emerge after the Twelfth Party Congress of September 1982. If this constitutes a new strategic Chinese assessment, it would represent a departure from the strategic consensus which brought our two nations closer in the 1970s. In his major address to the September Party Congress, General-Secretary Hu Yaobang said that one of the principal purposes of the Party is to "carry on the struggle against imperialism and hegemonism in defense of world peace." Indeed, Hu mentioned imperialism first. What, if anything, that means remains to be seen.

Predictably, this has not pleased Washington. Then Assistant Secretary of State for East Asian and Pacific Affairs Holdridge said in an address to The National Committee on U.S.-China Relations in December 1982 that, “we have not—indeed, we could not—ignore some of the more simplistic rhetoric that has been emanating from Beijing of late. To put it bluntly, we take exception to Chinese references to us as ‘hegemonists’ and expect better from the Chinese than being lumped together with the Soviets as the cause of all the world’s ills.’”

Finally, I come to what most people consider to be the central point of divergence between our two countries—relations with Taiwan. The issue, quite simply, is whether or not American termination of arms sales to Taiwan will have as its precondition a statement by Beijing that the PRC will not employ force in its ongoing attempt to reunify the country. At the time normalization was announced on December 15, 1978, this issue remained unresolved. The Chinese merely agreed not to contradict our unilateral statement that we expected a peaceful resolution of the Taiwan problem. Moreover, both sides agreed that the U.S. would “maintain cultural, commercial, and other unofficial relations with the people of Taiwan.” That these “commercial and other unofficial relations” would include military sales to Taiwan was made clear to the Chinese throughout the normalization negotiations. At the time, Chairman and Premier Hua Guofeng noted that China could not agree to this “but nevertheless, the joint communique was reached.” In the wake of normalization, in April 1979, The President signed into law the Taiwan Relations Act which mandated Congress and the President “to provide Taiwan with arms of a defensive character” and “to maintain the capacity of the United States to resist any resort to force or other forms of coercion that would jeopardize the security, or the social or economic system, of the people on Taiwan.” Beijing asserts that this domestic law of the U.S. government infringes upon Chinese sovereignty and that a domestic law cannot supersede a negotiated agreement between two sovereign entities. Beijing now demands that the Reagan Administration commit itself to a gradual reduction in arms sales and that a termination date be set.

There have been several efforts to put this issue behind us, one of which was the August 17, 1982, Joint Communique (“Shanghai II”). This document, however, did not solve the fundamental issue. Indeed, the friction is at least as great now as it was before the communique. President Reagan is unwilling to set a terminal date after which we will not provide weapons to Taiwan and the Chinese leadership, driven by internal constituencies, is seeking

to extract precisely this concession. Both sides are locked into mutually exclusive positions and no easy resolution appears at hand.

In February 1983, Secretary of State Shultz went to China in order to try to defuse the issue once again. No sooner had he returned from the PRC, however, than President Reagan gave an interview to a periodical called *Human Events*. He essentially said that all we promised in the August 17th Communique was that if the Chinese will promise not to use force, then we would end arms sales to Taiwan. Neither the August Communique nor Secretary Shultz's trip had changed the situation materially.

Thus far, the above picture of Sino-American relations has been painted in somber hues. We must keep all of this in perspective. There still is considerable public and private intercourse between our two countries. The question confronting policy makers is: How can we maintain and expand these activities and benefits, on the one hand, and not capitulate on fundamental principles on the other?

Historical Lessons In The Sino-American Relationship

As I survey the history of Sino-American ties, and past Chinese behavior, I think five "givens" in the relationship emerge. These can help us understand the present and orient policy for the future.

First, leadership instability, either in China or in the U.S., does not provide fertile soil for the relationship. Every major recent advance in Sino-American ties has occurred in the presence of *comparatively* stable leadership in both capitals. Nixon, for instance, went to China in the wake of Lin Biao's purge in 1971. In America, the Watergate Era essentially put China policy on the back burner. President Ford was unable vigorously to pursue China policy because of electoral constraints and the Reagan challenge. Only when Jimmy Carter was at a relatively strong point in his presidency was he willing to assume the risks of moving ahead on China policy.

In my view, the Chinese now believe that by waiting, and taking a rigid position with Washington, there is a healthy probability that Reagan may not run, or may not be reelected if he does. From Beijing's perspective, most of the likely presidential contenders are preferable. For our part, some people in the U.S. have concerns about leadership stability in the PRC. Can we make commitments with a reasonable expectation that there will not be an unpredicted policy departure in Beijing? There has been considerable discussion about how much younger the Chinese

leadership is; "the new look." Here one has to separate rhetoric from reality. The reality of the Politburo emerging from the Twelfth Party Congress of September 1982 is as follows: The Politburo members have an average age of 72.5 years. The Politburo's Standing Committee has an average age of 74.5 years. The increasingly important Secretariat is younger, with members of that body averaging 66 years old. If one looks at the State apparatus, and this is becoming more important, the premier and vice-premiers taken together have an average age of 66. It is true that new and younger leaders are moving into the ministries and into provincial governments throughout the country. This is important and it is a positive development. However, the basic question remains. What expectations for stability can we have?

Moreover, the military in China is unhappy about previous cuts in its budget and not pleased to find that defense modernization is a clear fourth priority among the four modernizations. Too, there is some indication that the military resists what it sees as ideological deviations, increasing dependence on the West, increasing penetration of Chinese society by our entrepreneurial and cultural forces, and the inevitable domestic social consequences of all this. The American government, then, is not persuaded of China's elite stability, youth, dynamism, firmness, and capacity to "stay the course." What one sees on both sides, I believe, is a perception that nothing is to be gained by making concessions now.

The second lesson of history is that advances in Sino-American relations have been made when the United States has a passably good relationship with the Soviet Union. Simply put, when Beijing thinks that Washington has the option of cooperating with Moscow, China has an incentive to be somewhat more accommodating. But, when the PRC sees us unalterably locked into conflict with Moscow, it has little incentive to make concessions to us, believing that we have foregone an important strategic alternative. For example, the major breakthrough in Sino-American relations in 1971-1972 occurred on the eve of SALT I. The Carter normalization occurred in late 1978, on the eve of SALT II. The point is, the Chinese have been most accommodating when we looked like we had a chance to improve our position with the Soviets. At present, the Chinese seem genuinely to discount the possibility of Washington and Moscow significantly improving their bilateral ties. This, in turn, leaves Beijing free to move closer to Moscow and, in the process, extract from Washington additional concessions, whether it be on Taiwan, technol-

ogy transfer, or trade. What we now are seeing is the natural result of the polarization of the Soviet-American relationship.

There is one exception to the general pattern of the Chinese discounting the possibility of significant Soviet-American agreement in the near term—this is the intermediate missile talks in Europe. Beijing fears that those talks could produce a shift of Soviet SS-20 missiles to the Soviet Far East. In general, however, I suspect that the Chinese are not terribly worried about our dramatically improving ties with the Soviet Union any time soon.

A third lesson from history is that when we have good relations with Japan and NATO, the Chinese take us more seriously. We carry more clout in Beijing when we are effectively influencing European capitals and Tokyo. We certainly have not projected this image with the ongoing and highly visible trade quarrels with Japan and the friction concerning Tokyo's defense priorities. Looking to relations with our NATO allies, the bobbing and weaving on grain and pipeline policy, and the growing argument over Pershing II and cruise missiles, has reinforced a Chinese image of the West as in disarray, or at least a West in which the United States cannot be an effective leader. We would improve our relations with China considerably if we mended fences with our allies and got something positive going with Moscow. That is a pretty big "if," I will be the first to concede.

As a fourth lesson, history also tells us that when the Chinese and American economies are perceived as healthy, we have a much better relationship. In times of economic hardship, *both* economies tend to become increasingly protectionist. Looking at the halcyon days of 1978-1980 in the Sino-American relationship, the Chinese had ambitious (indeed unrealistic) growth objectives. They had plans to build 120 key plant. They planned to import massively from abroad to accomplish these objectives. Simultaneously, the U.S. had "low" unemployment, "only" 5.8%, which does not look so bad when compared to today's double digit unemployment. The growth rate for the Chinese GNP in the 1978-1980 period was in the vicinity of 10 percent and, though not all of that increase was wise or productive, there was a sense of forward movement. The U.S. was growing, too, albeit with increasing inflation. Now, both economies are growing at much slower rates (though for China "slower" may end up being "faster"). The Chinese growth rate last year (1982) was in the 4.5-5.0 percent range, down from the 1978-1980 rate mentioned above. In the U.S., GNP fell by 1.8 percent (when adjusted for inflation) in 1982, giving us a GNP no bigger in 1982 than it had been in 1979. In both societies, slow or negative growth feeds

protectionist sentiment. I should mention, however, that at present China's leaders seem extremely confident of their economic position.

To mention Chinese protectionism requires some elaboration. When I was in China in November 1982, I had the opportunity to speak with representatives of the Ministry of Machine Building. This ministry, along with others, is increasingly being judged by profitability criteria. Consequently, these ministries seek to reduce imports so that their products will sell better in China's domestic market. The Machine Building Ministry quite frankly acknowledged that its first priority was to protect domestic industries. Of course, protectionism is not so obvious because trade is a state monopoly. Decisions are made in the bowels of the bureaucracy. China doesn't have the spectacle of congressional fights. But, the Chinese foreign trade structure is fundamentally protectionist. Protectionism is more obvious in the U.S.; this pressure is manifest in textiles (as we observed above), shoes, mushrooms, and even spearmint. It is very clear why the U.S. is imposing unilateral quotas on Chinese textiles. There is high unemployment in our textile and garment industries and Chinese textile exports in certain categories have grown rapidly. Moreover, under the Multi-Fiber Agreement, the U.S. cannot make large concessions to the Chinese without affecting our textile relationship with Taiwan, Hong Kong, South Korea and other major exporters.

On the textile issue, the Chinese have a different view. From their vantage point, they have had a persistent and large bilateral trade deficit with the United States. In their view, Washington is unfairly constraining the growth of one export product which might help offset that persistent imbalance. From 1978 through 1982, the cumulative Chinese trade deficit with the U.S. was about 7.35 billion American dollars. China bought 2.23 dollars of U.S. products for every dollar of Chinese products we purchased. In this situation, Beijing can easily turn our arguments against Japanese trade barriers on us. "How can we buy from you?", the Chinese ask, "If you won't buy from us?" I should point out that Chinese trade statistics are calculated differently than ours and exclude "invisibles." China's trade position is not as bad as Beijing would have us think.

Economic downturns inevitably produce protectionism. The best remedy to this is sustained economic growth in both societies. In the interim, we need to restrain protectionist impulses. We ought to note that one of the carrots which the Soviets held

out to the Chinese in their recent trade agreement was the promise of balanced bilateral trade.

The final historical lesson I wish to assess is what the Chinese call the “Ti-Yong” (“essence” vs. “use”) dilemma. The Chinese now, and ever since at least the mid-19th century, have wanted the “things” and “techniques” of the West without simultaneously having to adopt our values. This is only partially a political phenomenon—more fundamentally, it is cultural. As trade and cultural exchanges have developed, China’s elite has ever more clearly seen that it is exceedingly difficult to separate Western technique from the cultural matrix which gave rise to it and which sustains it. In Beijing you can see segments of The ABC Evening News on television. Voice of America is a popular radio station. In short, the American cultural penetration of China has gone on at a relatively rapid rate. Unsurprisingly, the regime fears a loss of ideological and ultimately of political control. A young man named Wei Jingsheng, a dissident jailed in the late 1970s, asked a very simple question that I believe is troubling the Chinese leadership. Can China achieve the “four modernizations” (agriculture, industry, science and technology, and national defense) without a fifth modernization? And what was the fifth? Democracy.

It is very difficult to permit the kind of penetration that will accelerate China’s economic transformation without, at the same time, producing unwanted cultural and political effects. For example, those people who return to China after prolonged study and residence abroad are going to be different than when they left. The last generation of Chinese modernizers which came to the West in the 1930s and 1940s has played a leading role in Chinese society and government ever since. In many respects, it has been they who have been the cosmopolitan element of Chinese society. Those who stay at home now, and more parochial leaders who have worked their way slowly up the apparatus, are the natural competitors of those who went abroad.

Thinking About Managing The Relationship

Thus far I have identified the problems that trouble our bilateral ties and I have suggested where the origins of some of those difficulties may lie. Where do we go from here? What are the essential elements of a China policy for the 1980s?

Any policy must build from assumptions. Mine are: First, we have both congruences and divergences of interest with the PRC. One of the most intelligent formulations of this was the toast which Richard Nixon delivered in Beijing in February 1972. “We

have great differences today. What brings us together is that we have common interests which transcend those differences." Chinese and American policies and interests differ (to various degrees) with respect to the Middle East, Korea, and arms control. Regarding other issues, such as Cambodia, Vietnam, Afghanistan, and Soviet expansion into the Persian Gulf and Indian Ocean, the consensus between our two sides has been quite substantial. Second, American influence with respect to China is modest, but not entirely absent. It does matter what we do. What we do ought to be undertaken after having weighed Chinese sensitivities. With China, it matters not only what we do, but also how we do it.

A third assumption I would start with is that we have an interest in the success of China's economic modernization strategy, particularly as this development affects food and energy. One of the most destabilizing things that could happen is for China to become a huge net importer of food and energy, particularly in a context of global scarcity. Chinese energy and food self-sufficiency is in the interests of all other global consumers. National policy has been, and should continue to be, to help promote economic development through technology transfer and human development programs.

Within the context of these baseline assumptions, I see a sensible China policy for the 1980s consisting of the following elements: 1) A more liberal and effectively implemented technology transfer policy. Indeed, the Reagan Administration, like its predecessor, has called for this, but it has not been effectively implemented by our bureaucracy. Secretary Shultz, during his February trip to the PRC, was specifically asked by American businessmen why the U.S. had been so slow in approving export licenses. My own view is that technology transfer ought not to include weapons sales, but the Administration's position has been that the U.S. government would be willing to consider weapons sales on a case-by-case basis. 2) An element of any sustainable policy is to seek balanced bilateral trade and to resist protectionist impulses. Presumably an expanding American and global economy would help avoid this danger. 3) We should quit talking about Taiwan for a while and sell no greater quantity or quality of weapons to the island than we had under the Carter Administration during the highest post-normalization year. We might consider measuring the value of these sales in current dollars. 4) We have to see China in the context of our relations with NATO, Japan, and the Soviet Union. Improved relations with the other major centers of power would make us a more attractive partner to Beijing. 5) Finally, we have to breathe new

life into the multitude of bilateral inter-agency agreements signed primarily under the Carter Administration. Agreements were concluded in such areas as health, education, environmental protection, and so on. Some of these earlier initiatives are languishing for lack of elite attention and financial resources.

All five of these policy components are important in reversing the downward trend of U.S.-China relations over the past three years—the negative ratchet pattern, as I have called it—and putting the fundamentals of our relationship back in sound working order.

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