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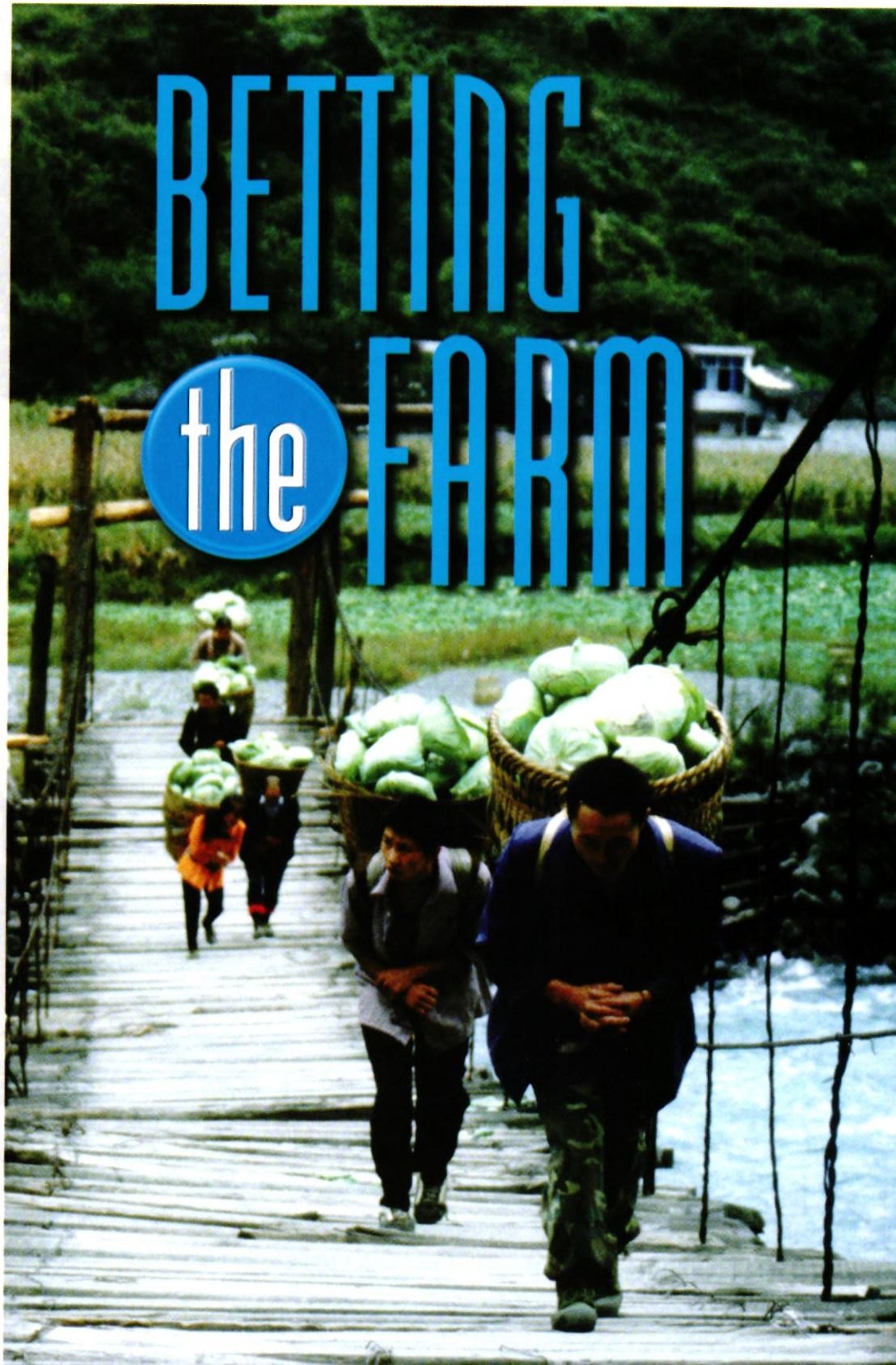
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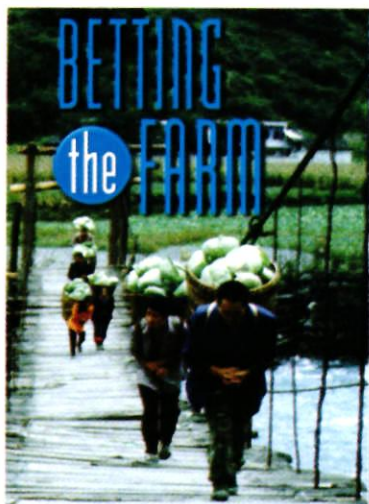
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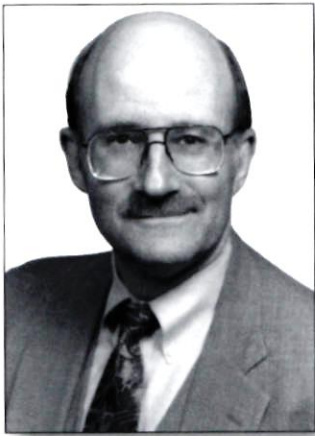
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Robert A. Kapp

LETTER from the President of the US-China Business Council

Springtime and the Pursuit of Justice

Americans and Chinese share a willingness to be creative and energetic in the effort to improve the Chinese legal environment in a remarkable variety of ways.

One of the lessons of Chinese language study is that some English words translate effortlessly, while others are much more complicated. “Sodium chloride” is a snap. “Father” and “mother” are pretty straightforward. Even “economy” and “government” are generally clear-cut, though their historical and linguistic trappings are heavy.

“Law,” on the other hand, is something else indeed.

The core Chinese character in any translation of “law” is pronounced “*fa*.” Around the third century BC, Chinese political theorists known as “Legalists” argued that the ruler should rule the state by using “*fa*”—a kind of primordial “rule of law.”

But for the Legalists, the interests of the ruler and the state were everything. They argued that the central goal of the ruler is to preserve his rule, and that the goal of the state is to maximize its own power. The way to do so was to keep the people orderly and submissive; the tyrant could best do that by using “*fa*,” an elaborate penal code detailing every (draconian) punishment for every conceivable offense. Once every would-be offender clearly understood what was coming to him, he would toe the line, and the state would be strong.

Though the Legalists only dominated China for 15 years, the residual impact of Legalism on the Chinese political system has been evident ever since, modulated but not eliminated by imperial Confucianism, with its own emphasis on loyalty and “right behavior.”

More than 2,200 years later, China and the United States both focus their attention on the “rule of law” in China. Some American observers rightly note that China’s translation of this foreign term, “*yi fa zhi guo*,” can be translated either as the familiar “rule of law” or the less appetizing “rule by law,” the latter suggesting that today’s Chinese rulers see “*fa*” in a manner not too dissimilar from their ancient forebears.

Nevertheless, as China comes to terms with the most massive single legal obligation it has ever undertaken, namely its commitment to the terms of its World Trade Organization (WTO) accession—which have the force of law within China—the US-China dialogue on the rule of

law suggests something far more positive, albeit far from complete.

The contribution to this rule of law dialogue by the US-China Legal Cooperation Fund, an effort launched by the US-China Business Council with the voluntary contributions of member companies, reflects this more positive interpretation.

An American contribution to the rule of law dialogue

It was in 1997, and again in 1998, that the presidents of the United States and the People’s Republic of China, seeking to reestablish the foundations of US-China civility after the 1995-96 Taiwan Strait crisis, solemnly pledged to strengthen their nations’ cooperative efforts in the field of law—an area in which China’s leadership clearly understood the need for education and institution-building, and in which Americans from many walks of life saw the importance of sharing knowledge and experience.

It was in 1998, again, that the US-China Business Council, faced with a Congress that quickly smothered any attempt to dedicate public funds for legal cooperation with China, went to its member companies to seek their commitments to a purely voluntary, low-key private-sector effort to support legal development in China. Thanks to the commitments of some Council member firms, the US-China Legal Cooperation Fund (www.uschinalegalcoop.org) came into existence as an activity of the China Business Forum, the Council’s educational and cultural affiliate.

The US-China Legal Cooperation Fund is now in its fourth year, operating quietly and with resources so limited that it doesn’t even spend money touting its own achievements. The fund has received literally hundreds of proposals from US and Chinese partners for support of their efforts in legal development in China.

The range of interests and goals brought to the fund's attention has exhilarated and surprised the fund's trustees, who come from the companies that provide financial support. The fund has sought, whenever it could do so responsibly, to provide assistance to grassroots efforts in China, away from the traditional centers of learning, power, and influence. Businesspeople with experience in China have embraced the fund as a way of doing something meaningful for real people living real lives.

A look at the fund's awards to date gives evidence not only of what has been done, but also of what can be done in the future. By January 2002, the fund had awarded 29 grants for 27 projects by Chinese and American cooperating partners (see below).

What does the experience of the US-China Legal Cooperation Fund suggest?

- First, that Americans and Chinese share a willingness to be creative and energetic in the effort to improve the Chinese legal environment in a remarkable variety of ways.
- Second, that there is no use in waiting for governments to do everything in this regard, especially in the United States. The US political process renders official rule of law cooperation with China uncertain and perpetually politicized.

- Third, that there is value, and virtue, in small efforts. No one should claim that any one American or foreign initiative with China on legal development will suddenly create "the rule of law in China." But reading the reports of programs that the US-China Legal Cooperation Fund has helped to animate leaves no doubt as to the value of even inconspicuous Sino-American efforts in dozens of legal fields affecting the lives of China's people.

- Fourth, that nothing that American business does in China will satisfy all its domestic critics. Even far bigger business-supported endeavors than the US-China Legal Cooperation Fund will fail to convince those who assume that business is inherently iniquitous and that business with China is ethically offensive. Recent corporate scandals in the United States will merely buttress the arguments of those who focus on the perceived deficiencies of business conduct in China.

- Fifth, that while we beaver away at rule of law cooperation with China, we need to be realistic about our own strengths and weaknesses. Chinese observers have noted that even in the United States, with all of its rule of law, transparency, regulatory mechanisms, limitless resources of trained financial and legal regulatory personnel, and deeply embedded legal traditions, a

handful of people can make a pretty good run at walking away with billions while tens of thousands of employees as a consequence lose their jobs and their retirement savings. We should approach rule of law work with China in a spirit of confidence as to what we have to offer, but with humility as to what we have not fully accomplished at home.

Only a few days ago, I had an experience that summed up the way the US-China Legal Cooperation Fund works. A prestigious American institution of higher learning, to which the fund had provided \$25,000 in partial support for a project in China, sent in its final report on the program. With it was a check for \$3,000—a pittance that could easily have been squirreled away in the recipients' expense reports, but which, because the grantee had not spent it, deserved to come back to the fund. I was impressed and grateful.

That's the spirit in which this Council's low-key project approaches its tasks. Corporate contributors are always recognized, as well they should be; they have many places to put their money, and their support of the Council's program requires nothing less than full acknowledgment. I hope American companies will be there when the fund turns to them this spring. 完

The US-China Legal Cooperation Fund, Grants Awarded, 1999-2001

- Comparative study of human rights protections and the administration of justice in China, Taiwan, and Hong Kong
- Improvement of Chinese administrative procedures and practices
- Preparation of an English-Chinese dictionary of Anglo-American legal concepts and terms
- Compilation of a handbook for village elections in China
- Production of Internet-based seminars for Chinese judges, lawyers, and law students about the US legal system
- Improvement of delivery of legal aid to the poor in China
- Improvement of teaching of business law and securities law in China
- Training of Chinese administrators, regulators, and lawyers in the application of legal rules in the WTO environment
- Development with the All-China Lawyers Association of an improved code of legal ethics for Chinese lawyers
- Study of the rule of law, constitutionalism, and judicial independence in China
- Study of the legal impact of China's WTO accession on China and the United States
- Drafting of a codification system for Chinese laws for use by lawyers and non-lawyers
- Study of US securities law by Chinese securities regulators and Chinese students
- Identification of the administrative law reforms and laws with respect to transparency that China must enact to comply with WTO requirements
- Workshop and research project on freedom of information and open government in China
- Field research in two locales to identify impediments to full implementation of China's labor law
- Assessment of legal aid needs in one Chinese province and creation of a criminal investigation and defense manual for Chinese legal aid attorneys
- Interdisciplinary seminars in China on WTO standards, structure, and procedures, focusing on rule of law and conflict
- Enhancement of legal skills training for providers of legal services for women, especially in the area of domestic violence
- Development of a web-based WTO course for Chinese provincial and local officials and enterprise managers
- International symposium for Chinese policymakers and legislators on rural land law reforms in China
- Development of a cooperative teaching program on alternate labor dispute resolution



BETTING the FARM

Will China's Food Imports Rise?

Fred Gale

With one-fifth of the world's consumers, one of the world's fastest-growing economies, and a limited endowment of arable land, many see China as a potential source of increased demand in world food markets. Agriculture is already one of the few sectors in which the United States has a trade surplus with China. According to US Department of Agriculture (USDA) statistics, mainland China is the seventh-largest recipient of US agricultural exports, with annual sales averaging \$1.7 billion between 1995 and 2000.

Yet China's food imports are surprisingly small for a country with such a large population and limited land base. US agricultural exports to China are similar in value to those purchased by Taiwan, Hong Kong, and the Netherlands,

Fred Gale

is a senior economist with the US Department of Agriculture's Economic Research Service.



As China's agricultural sector opens, the country's farmers will increasingly choose their crops according to global demand

which have much smaller populations (*see* Figure 1). US agricultural exports to the three leading destinations—Japan, Canada, and Mexico—are each at least triple the value of agricultural exports to China.

At the end of the twentieth century, China was largely self-sufficient in food and was a major exporter of corn, rice, fruit, and vegetables. Agricultural products have accounted for a declining share of China's imports—from about one-third in 1980 to less than 10 percent in 2000.

Market analysts are watching to see whether China will become not only a larger, but also a steadier, importer of agricultural products. Since the late 1970s, US agricultural exports to China have followed a roller coaster pattern as China periodically buffeted grain and oilseed markets with unexpected purchases or sales (*see* Figure 2). Though weather-related events have played some role, much of China's unpredictability has been driven by sudden shifts in policy.

China's recent World Trade Organization (WTO) accession could increase the role of market forces, which should in turn boost food imports. But how far and how fast imports will rise is difficult to predict. The answer depends on a number of different factors, including how food demand responds to rising income, how China copes with its limited arable land and vast farm population, and how China continues to liberalize its agricultural and trade policies (*see* p.12).

Why imports are modest

China has remained largely self-sufficient in food through a combination of low per capita

consumption, intensive cultivation of land, and restraints on grain imports. Though China has a rising urban middle class with world-class consumption standards, it is still a relatively poor country. Consumption of food grains (mainly rice and wheat), vegetables, and fish is above world averages, but Chinese eat much less meat, poultry, dairy products, sugar, and processed foods than other countries. USDA data indicate that Americans ate an average of 124 lbs. of red meat in 2000, while surveys of urban Chinese consumers show an average of just 44 lbs.

Chinese surveys report that China's urban residents spent just \$236 per person on food in 2000, while rural residents spent only \$56. Farm families, who still make up the bulk of China's population, grow much of the food they consume.

China maintains a high level of food production by double- and triple-cropping and applying large quantities of fertilizer and labor to its limited land base. Yields of China's major crops are above world averages. Fertilizer use per hectare is more than 2.5 times higher than world and US averages. China has more than three laborers for every hectare of farmland and irrigates a relatively high proportion of its land.

The high concentration of vegetables in the Chinese diet makes efficient use of the country's limited land base, since large quantities of vegetables can be grown on small plots of land. Low meat consumption also contributes to food self-sufficiency by reducing the area needed to produce grains to feed livestock herds. In recent years, large imports of soybeans have allowed China to increase consumption of vegetable oils and protein meals made from soybeans without

devoting scarce acreage to this low-yield crop. In China, soybean yields average 1.7 tons per hectare of land, compared with 4.6 tons per hectare for corn and more than 18 tons for vegetables.

The government has restricted trade and controlled domestic prices to ensure that the country does not become too reliant on grain imports. China has maintained quotas, high tariffs, and the management of trade volume through state monopolies to limit imports of grains and other agricultural items, but officials are expected to dismantle many of these barriers under WTO rules. And despite these limits, grains and oilseeds are among China's largest food import categories.

Self-sufficiency in grain has been an important goal for Chinese policymakers, but some economists in China argue that the country could make better use of its scarce land resources by importing more of these land

intensive crops instead of growing them at home. In recent years, policymakers seem to have acknowledged that complete grain self-sufficiency is unrealistic. The Chinese government has reduced its goal for self-sufficiency to 95 percent of total grain needs, but policies still favor domestic grain production.

Growing food demand will strain resources

China is one of the fastest-growing major economies and dramatic improvements in living standards are obvious to even casual visitors. As their incomes rise, Chinese consumers' purchases of meat, fruit, dairy products, fish, and poultry will grow particularly fast, while rice and wheat flour demand will grow more slowly. Expenditures at restaurants, supermarkets, and convenience stores are expected to grow rapidly. The migration of millions of semi-subsistence farmers to urban areas and the filtering of urban lifestyles to rural areas will reinforce the effects of income growth on consumption patterns.

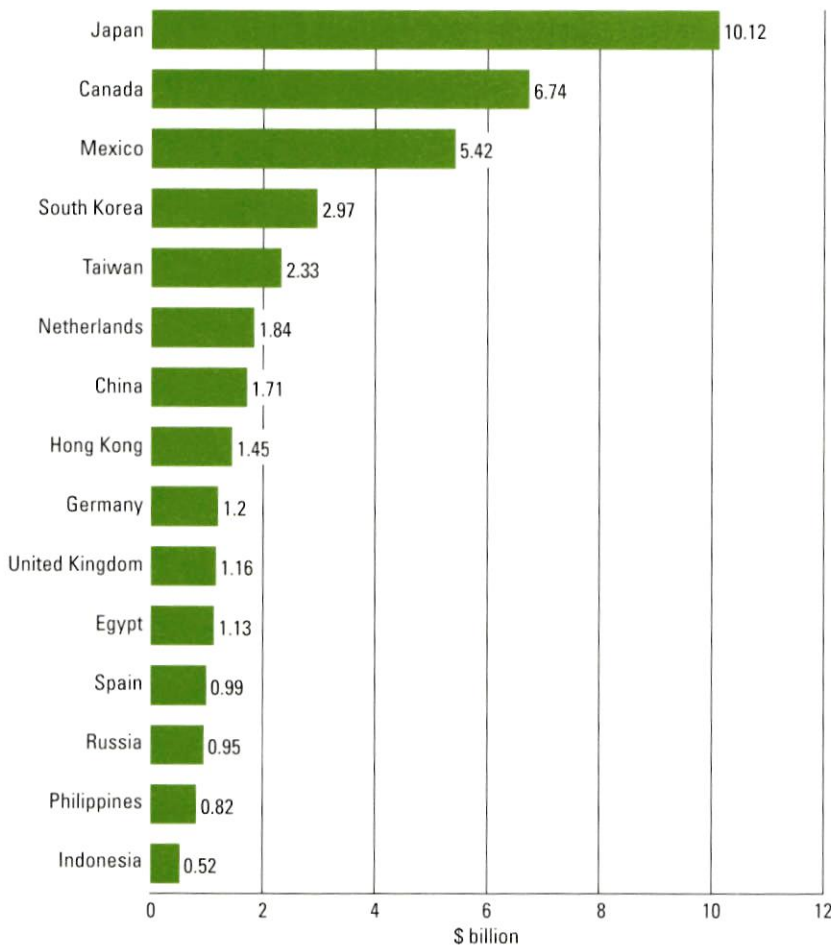
China's limited resource base means that domestic production will be unable to meet rising food demand entirely. China's 1997 agricultural census confirmed that its cultivated land area was 40 percent larger than previously reported, but this larger number still meant that China had 10 people to feed per hectare of farmland—more than twice the world average of 4.4 people per hectare. The cultivated land base is likely to shrink further as some of China's most productive land is lost to development in coastal provinces and environmentally fragile land in western areas is returned to forests, grass cover, and other, more sustainable uses.

Diminishing water resources are a serious constraint on production growth in the North China Plain (Shandong, Hebei, Henan, and Shanxi provinces), which accounts for much of China's wheat, corn, and cotton production. Serious groundwater depletion, land subsidence, and dry riverbeds suggest that even current production levels may be unsustainable. The scarcity of water will also affect the government's current drive to expand cotton and vegetable production in China's arid northwest.

Rising demand for meat will present a particularly big challenge to China's agricultural sector. China already accounts for between 40 and 50 percent of the world's pork production, but Chinese agricultural economists estimate that 80 percent of China's pork is produced by households that feed table scraps, grain byproducts, green silage, water plants, and vegetables to their family pig. As production expands, farmers will shift to commercial methods that use more manufactured feeds.

Production of poultry, beef, and dairy products is growing dramatically, albeit from a small base. Expanding meat, poultry, and dairy pro-

Figure 1
Average Annual US Agricultural Exports to Leading Countries and Regions, 1995-2000



NOTE: Chart shows average value of total US agricultural exports for 1995-2000.

SOURCE: Calculated by the Economic Research Service of the US Department of Agriculture (USDA) using data from USDA's *Foreign Agricultural Trade of the United States*

duction will require extensive land area to grow feed grains. Meat imports will rise, but most analysts project domestic production will also rise. Modern livestock operations are also increasing the protein content of feed rations, which is raising demand for protein meals made from soybeans and rapeseed. Though China is currently a net exporter of corn (boosted prior to WTO entry by subsidies as high as \$40 per ton), the expansion of China's livestock sector will turn the country into a steady net importer of corn and soybeans in the coming decade.

Low-cost labor is one resource that China has in abundance. China thus has a competitive edge in agricultural products that require high labor input and little land per unit of output. China will make the best use of its resource base by shifting more production to labor intensive commodities, including vegetables, fruit, aquaculture, and animal products. This shift is already occurring: China is becoming a leading exporter of many of these labor-intensive agricultural commodities, mainly to markets in more developed, land-scarce countries in Asia. Labor intensive exports could pay for more imports of land intensive grains.

Open markets reallocate resources

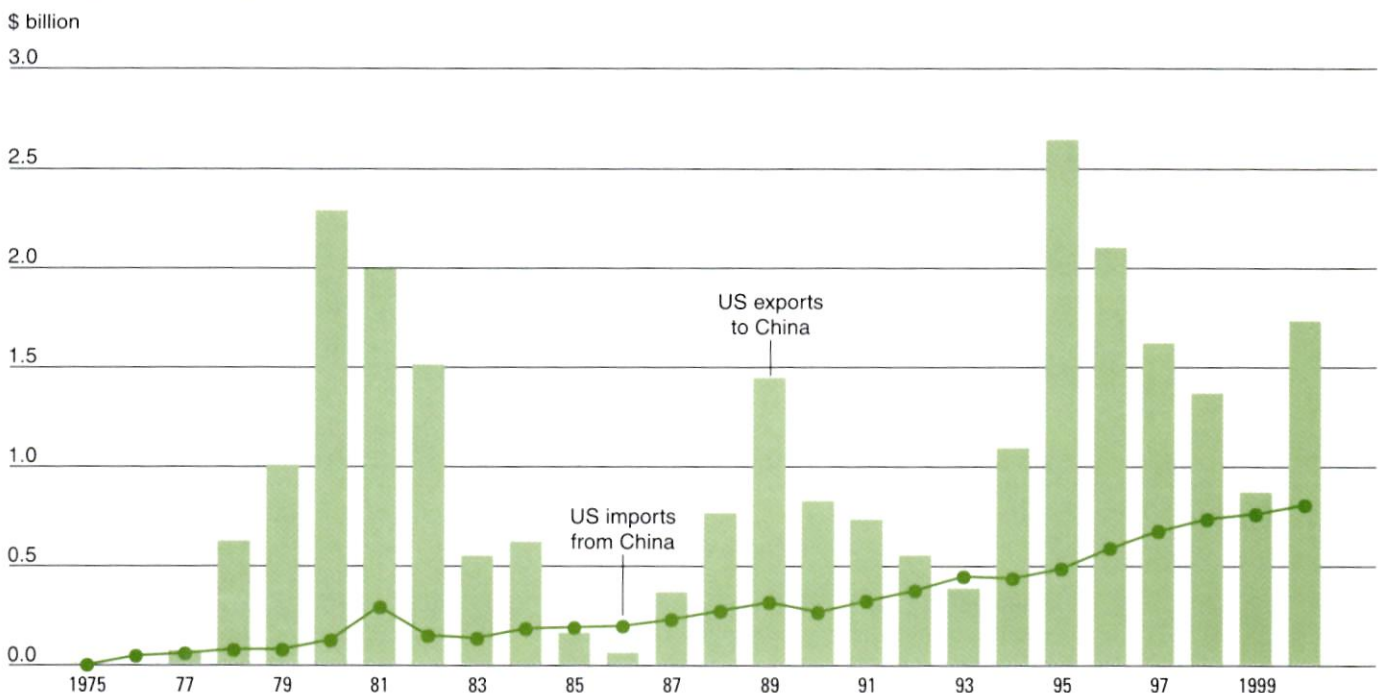
As China increases its reliance on markets, production and consumption decisions will be

The government freed most “nonstaple” foods—vegetables, fruit, and meat—from central planning in the 1980s; markets for those commodities now operate with minimal government involvement.

guided by supply and demand rather than government plans. Since the late 1970s, China has been gradually allowing markets and private enterprises greater roles in allocating resources, but vestiges of the planning system remain, especially in agriculture. The greater role of market forces may realign production incentives, encouraging China's farms to produce what they grow most efficiently while allowing imports to supply what can be grown more efficiently overseas.

The government freed most “nonstaple” foods—vegetables, fruit, and meat—from central planning in the 1980s; markets for those com-

Figure 2
US Agricultural Exports to and Imports from China, 1975-2000



SOURCE: USDA, *Foreign Agricultural Trade of the United States*

Recently, northeastern provinces exported corn while southern provinces were importing it, since north-south transportation of grain is costly and South Korea and Japan, both large markets for corn, are relatively close to China's northeast.

modities now operate with minimal government involvement. Production of nonstaple foods has attracted domestic and foreign investment, and some products have penetrated foreign markets.

The government relaxed control over production and marketing of grain (rice, wheat, and corn) more slowly and in fits and starts. For example, a period of liberalization in the early 1990s was abruptly halted when government leaders became concerned about rumors of localized shortages of grain and food price inflation. In the mid-1990s, the government restored local grain plans, quotas, and targets and charged provincial governors with ensuring adequate grain supplies for their provinces. Private grain trading was banned in 1998. A surge in production induced by a combination of policy and favorable weather, plus large imports, left the country awash in grain in the late 1990s. Grain imports fell to minimal levels, and the government subsidized exports to bring down excessive stocks.

China now seems to be in another liberalization phase. Private grain trading is once again widespread. Commercial for-profit trading entities are being spun off from grain bureau operations that previously combined policy and market functions. The government is encouraging competition in grain markets and reducing its role in farm production. In 2000, it eliminated procurement prices for low-quality spring wheat grown in China's northeast, all wheat grown south of the Yangzi River, and low-quality indica rice grown in southeastern coastal provinces. This year, the government is eliminating all of its grain procurement prices and quotas in "grain deficit" provinces (those where consumption exceeds production within the province) along China's coast and in Beijing, Tianjin, and Shanghai.

Liberalization of domestic grain production will allow the market to play an even greater role in determining what crops are grown and whether they are grown in China or overseas. The removal of grain production quotas will free up farmers to plant whatever commodity brings the highest return. In coastal provinces where land is in short supply and farmers have higher incomes, for instance, grain production may give way to more vegetable, fruit, fish, or animal production activities that bring higher financial returns. Though this shift could translate into greater grain imports, efficiency improvements in domestic grain marketing could also allow farmers in China's interior to supply the country's booming coastal markets. Excess demand in coastal areas could also push up grain prices in China's hinterland enough to induce farmers in northeast and central "grain surplus" provinces to increase production and efficiency to supply coastal markets.

Recently, northeastern provinces have exported corn while southern provinces were importing

it, because north-south transportation of grain is costly, and South Korea and Japan, both large markets for corn, are relatively close to China's northeast. Future improvement of the country's transport and storage infrastructure, and increased efficiencies in the transportation and marketing industries that move grain and other commodities, will facilitate internal trade and specialization.

Free trade eventually

Liberalization of foreign trade will boost China's agricultural imports, although the rise will be gradual. China's WTO membership will entail cuts in agricultural tariffs to an average of 17 percent, far below the average in many other countries. The cuts will be phased in over several years, and annual tariff-rate quotas (TRQs) will, in effect, limit low-tariff grain imports to at most 5 percent of total production (imports above the TRQ level will still be assessed prohibitively high tariffs).

Perhaps more important will be the increased transparency, reduced role of state trading monopolies, publication of regulations, and harmonization of dispute settlement and legal methods with world standards that the WTO requires. Import decisions have often been based on a mix of policy and market factors, including information unavailable to the public (such as the level of grain stocks), making them hard to predict.

Before its WTO entry, China did not announce import quotas to the public and used regulations, often unavailable to the public and enforced in an ad hoc manner, to block imports. An important aspect of China's WTO accession agreement is the provision that fixed shares of grain, vegetable oil, and cotton TRQs will be available to nonstate-owned businesses. This will reduce the government's latitude in managing grain supplies through state trading monopolies. China's publication of draft regulations for implementing this provision in November 2001 was significant because it was the first time the Chinese government solicited public comments on a proposed regulation. It will take some time for China to adapt to international standards of transparency and openness in trade, but the country is certainly moving in that direction, if only incrementally.

All of these factors will allow agricultural imports to compete more freely in the China market and increase the influence of world markets in determining what is produced and consumed in China. In past years, internal crises or policy decisions have led to abrupt reversals in agricultural and trade policies, and similar reversals could happen again. But the growing role of markets, private business, and more open borders should reduce the government's ability to shut off trade, possibly making the erratic nature of China's agricultural trade a thing of the past. 完

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short takes

New Structure for Canton Fair

The China Export Commodities Fair (CECF)—better known as the Canton Fair—which showcases raw materials and finished products from PRC enterprises, has changed its format. Beginning with the 91st session in April, the CECF will be divided into two sessions. The first session, to be held April 15-20, will focus on raw materials, machinery and tools, electronics and electrical appliances, textiles and garments, foodstuffs, native produce, animal byproducts, medicines, and health products. The second session, to be held April 25-30, will feature housewares, gifts and ornaments, stationery, and sporting goods.

More information about the CECF is available online at www.cantonfair.org.cn, or by contacting CECF's Foreign Liaison Department:

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Taiwan Begins Importing PRC Goods

Taiwan began on February 15 relaxing restrictions on the import of goods produced in the PRC. The draft list of goods includes tariff line items for 903 agricultural goods and 1,225 consumer and industrial products. The complete list of these goods in Chinese is available on Taiwan's Board of Foreign Trade website at www.trade.gov.tw/richnews/newscontent.asp?bbb=503&aaa=s&ccc=3070

An English translation of the Taiwan tariff schedule may be found at www.eng.dgoc.gov.tw/ecatalog1.htm

Fortune Ranks Top Chinese Companies

Fortune magazine recently published a list of China's top 100 publicly listed companies, all of which are state-owned enterprises. Below are the top 10, ranked by revenue:

Rank	Company	Revenues (\$ million)*
1	China Petroleum & Chemical**	39,007.0
2	PetroChina	29,230.2
3	China Mobile (Hong Kong)	7,849.4
4	Baoshan Iron & Steel	3,737.3
5	Legend Holdings	3,487.0
6	China Unicom	2,861.8
7	Sinopec Zhenhai Refining & Chemical**	2,619.9
8	Sinopec Shanghai Petrochemical**	2,406.0
9	China Resources Enterprise	2,153.6
10	CITIC Pacific	2,050.8

SOURCE: www.fortune.com/indexw.jhtml?channel=artcol.jhtml&doc_id=206009

*All dollar values converted using exchange rate of 8.2783 renminbi per 1 US dollar.

**Part of the state-owned Sinopec Group.



BETTING the FARM

The WTO's Impact on China's Agricultural Sector

Frederick W. Crook

About 65 percent of China's population lives in the countryside. In 2000, the PRC government counted 499 million people working in the rural economy, with about 355 million working in agriculture itself. And yet China's agricultural sector only generates 16 percent of the country's GDP—in sharp contrast to the 50 percent it generated 50 years ago. Nevertheless, China's World Trade Organization (WTO) entry was held up in part over issues related to protecting this sector.

The terms of China's WTO accession will affect agricultural workers across the board. Many farmers in low-income areas cultivate crops for their own use, while in other areas the government continues to influence cropping patterns

Frederick W. Crook

is president of The China Group and is retired from the US Department of Agriculture's Economic Research Service.



As a WTO member, China will be under pressure to reform its rural infrastructure

through its mandatory grain-purchase system. Still other farmers participate in vigorous market systems. Some regions have an abundance of water, a warm, humid climate, and excellent crop-growing conditions—other regions are dry and have short growing seasons.

China's current rural economic systems may well require a decade to adjust to WTO rules. The pace of change will be rapid in some areas and slow in others, and these changes will inevitably be tied to changes in other sectors, such as transportation, distribution, international trade, banking, and law.

China, agriculture, and the WTO: Major terms

As a WTO member, China must abide by the WTO Agricultural Agreement, the aim of which is to improve market access by reducing tariffs and eliminating nontariff barriers, limiting domestic support for agricultural production, and restricting export subsidies (*see* Table 1). China must also comply with the WTO Agreement on Sanitary and Phytosanitary Measures, which requires that rules on health and food safety be based on science and not protectionist concerns (*see* p.17).

China's WTO tariff commitments vary according to product and will be phased in by 2004. The average tariff rate on agricultural products fell to 15.8 percent on January 1, 2002, according to the Tax Committee of the State Council. China may use tariff-rate quotas (TRQs) to protect domestic production of some agricultural commodities, including wheat,

corn, rice, soybean oil, cotton, and sugar. China must follow WTO transparency principles on TRQ management and has issued some relevant preliminary measures.

China agreed in its WTO Working Party Report that the country would not maintain national or subnational policies that regulate the quantity, quality, or treatment of imports and would outlaw the use of export subsidies on agricultural products. China also agreed to reduce nontariff barriers such as import licenses, quotas, and technical barriers. The Working Party Report also states that China must restrict domestic support to its farmers to 8.5 percent of the value of total agricultural production and cap support for specific products at 8.5 percent of the value of the specific crop. China will maintain state import rights for some agricultural goods, including wheat, corn, rice, sugar, cotton, soybean oil, and tobacco.

Foreign-invested wholesale enterprises will be able to distribute imported and domestically produced agricultural goods by 2003. Foreign majority ownership will be allowed by 2004 with no geographic or quantitative restrictions, and wholly foreign-owned enterprises will be permitted by 2005.

Three regions, different effects

China's imports and exports of agricultural products today differ sharply among its three geographic regions (*see* p.15). The eastern (coastal) region accounts for 79 percent of the country's agricultural exports and 93 percent of

its imports. The central region accounts for 14 percent of agricultural exports and 5 percent of imports, while the western region makes up only 7 and 2 percent, respectively, of agricultural exports and imports.

Following China's WTO entry, the eastern region will likely increase its share of the country's imports and exports. Its position along the coast gives it a great advantage in receiving bulk products, and its more developed rural industrial and transportation systems will allow firms to process and export agricultural products more easily. The central region likely will increase its share of imports, but its exports will face stiff competition abroad. Its transportation and pro-

cessing industries are not as advanced as those along the coast. The western region will likely lose shares of both imports and exports because of its less developed transportation infrastructure and the greater distances products have to move to find markets.

Short-term trade composition to hold steady

Bulk commodities (mainly grains, cotton, and soybeans) accounted for 59 percent of US agricultural exports to China in the last decade. Though such exports have generally been in decline since 1995, with some rise in 2000 (*see*

Table 1
China's WTO Commitments in Agriculture

WTO issue	China agreed to...	Example
Domestic Support	Cap of 8.5% subsidies for agricultural products	Subsidies are already below 8.5%
Export Subsidies	End export subsidies	Corn
Intellectual Property Rights	Abide by WTO rules on intellectual property rights including agricultural technology	
Judicial Review	Establish tribunals, contact points	Appeal procedures
Market Access	Reduce average tariffs from 21% to 17% by 2004	Oranges from 28.4% to 11%
	Reduce nontariff barriers (licenses, quotas, technical barriers)	End licensing for sugar
	End price controls—use market forces (some exceptions); government-guided pricing for some agricultural products	Oranges (tobacco excepted); government-guided pricing for wheat, corn, rice, soybeans
	Limit quantity import quotas	
	Limit tariff-rate quotas to 10 commodities	3% tariff for 8.4 million metric tons of wheat in 2002, 65% tariff for additional wheat
	Open agricultural service market and grant trading rights to domestic and foreign enterprises in agricultural commodities and inputs such as fertilizer and agricultural chemicals.	
Nondiscrimination	Equal treatment for foreign and domestic companies	
Open Agricultural Product and Input Markets	Open grain and input markets	
Price Comparability	Several alternative methods of price determination in dumping cases; accept US classification of Chinese economy as "non-market" for limited period	In US antidumping cases, US will use 3rd country (e.g. India) price data
Right to Trade	Goods to be traded freely in all of China within 3 years, except for state-traded items	Canned corn—freely traded Bulk corn—state traded
Safeguards	China waived its right to market-disruption safeguards	
Sanitary and Phytosanitary Measures	Publish standards, measures, and product coverage within 30 days after accession; base rules on science	
State Trading	Abide by WTO rules for state trading	China will maintain state trading rights for corn, wheat, rice, etc.
Technical Barriers to Trade	Publish all technical regulations in an official journal	
Transparency	Publish laws and regulations	Official journal established
Transitional Product-Specific Safeguards	Consultations if China's products cause market disruptions in foreign markets; WTO members have market disruption safeguards against China's products for 12 years	
Transitional Review Mechanisms	Provide information on WTO implementation one year after accession.	
Uniform Administration	Apply central rules consistently throughout the provinces	

SOURCES: *Compilation of the Legal Instruments on China's Accession to the World Trade Organization*, Beijing: Falu Chubanshe, 2001. *WTO and China's Agriculture: A Basic Reader (WTO yu Zhongguo Nongye Jianming Duben)*, Beijing: Zhongguo Nongye Chubanshe, 2002.

Figure), US exporters hope that bulk commodity trade will regain its prominent position in post-WTO China. The TRQs that major grain-producing countries, including the United States, Canada, and Australia, negotiated with China before its WTO entry reflect their hopes that China will increase imports of land intensive crops such as grains and soybeans. However, these hopes will likely remain unrealized in the short term, as the following breakdown by individual product shows. (Statistics are based on US Department of Agriculture (USDA) figures and the author's own estimates.)

● **Wheat**

China is currently the world's largest wheat producer, with an estimated 94 million metric tons of output in 2001 (compared to the United States's 53 million tons), and China has been increasing its cultivation of quality wheat. It also has fairly large wheat stocks—estimated to range from 32 to 45 million tons. China has announced a TRQ of 8.5 million tons of wheat in 2002. Given the large stocks, increase in quality, and changes in domestic consumption patterns, China's importing firms are unlikely to use up the full quota. From July 2000 to June 2001, China imported only 350,000 tons of wheat. For the same period in 2001-02, China is likely to import only 600,000 tons.

● **Corn**

China's corn output of 110 million tons ranked second to the 253 million tons that the United States produced between October 2000 and September 2001. China's corn stocks have been falling because of exports and lower production in the past few years, but are nevertheless probably about 80 million tons. China's TRQ for corn is 5.9 million tons in 2002. From October 2000 to September 2001, China imported 150,000 tons of corn and exported 7 million

Rural Employment

Farmers in China's north and northeast will bear the brunt of the increased competition in trading of bulk commodities such as wheat, corn, and soybeans. Some farmers may be able to adjust their cropping patterns and substitute other crops. Some may be able to initiate new production activities such as animal husbandry or find work in local businesses. Others may leave farming altogether and find employment in neighboring urban centers. China's authorities are worried about the effects—including lower incomes and underemployment—of the adjustment these farmers will have to make.

In 2001, I visited rural areas in Yunnan and Guizhou provinces where farmers living in isolated mountain valleys earn average annual per capita incomes of less than \$200. Because much of these farmers' output is consumed on the farm, China's World Trade Organization (WTO) entry is unlikely to have much effect on them in the short term. But over the long term, WTO membership will probably threaten current production techniques

in these areas, which include raising corn on high mountain slopes under plastic film with huge amounts of hand labor.

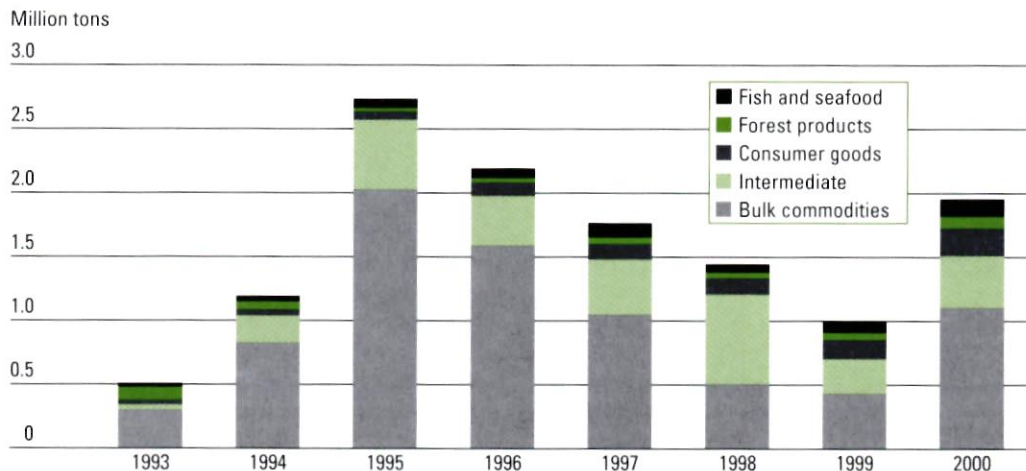
By contrast, more prosperous farmers near Qingdao, Shandong, are planting fewer grain crops and expanding vegetable and fruit acreage. Local townships and counties are investing in food processing plants. These farmers view WTO entry as a chance for them to break into more domestic and foreign markets.

The restructuring of China's huge labor force will take many years to accomplish. The transition from farm to factory and service jobs has already begun, and tens of millions have left their fields (see p.18). Rural governments should facilitate labor mobility by building better roads and transportation systems, developing job placement centers, creating rural adult education centers to train rural workers in various trades, and supporting the development of enterprises that move products from farm gate to consumers.

—Frederick W. Crook

tons. China's corn exports from October 2001 to September 2002 will likely be substantially below the previous year's because of these lower stocks, the fact that domestic corn prices are above the international price, and because of WTO rules restricting China's government from using export subsidies. Exports for 2001-02 are likely to be only 1.5 million tons, with imports only reaching 1 million tons.

Composition of US Agricultural Exports to China, 1993-2000



SOURCE: US Department of Agriculture

The Role of Land Management

Labor, capital, and technology in China today have varying degrees of mobility, but land is tied up in a historical, ideological, and political knot. The Chinese Communist Party came to power promising land to the peasants and then reneged on its promise by collectivizing.

Local resident groups (*cun min zu*) or the old production teams under the commune system legally own China's land. In practice, local cadres in villages and townships control the land, making them the overseers and landlords of the peasants.

Households now have long-term contracts on the land they till and, even though many heads of households leave villages to work in nonfarm employment, wives and children continue to till the

land. This pattern persists because the land is the farmers' only security and can provide something to eat if everything else fails. Another reason may be that farmers believe that at some point in time the government will give them actual legal and economic ownership of the land. If they leave their land, they may lose the chance to own it.

Though households can subcontract their arable land to other families, the current landholding system makes it difficult for farm managers to take advantage of economies of scale. This is not likely to change until the government modifies the landholding system, and in the meantime structural inefficiencies will persist.

—Frederick W. Crook

● Rice

China is by far the world's largest rice producer and has an estimated 94 million tons of rice stocks. The country imported 300,000 tons of rice and exported 1.8 million tons in 2000. China has a 2002 TRQ of about 2 million tons of short- and medium-grain rice and about 2

million tons of long-grain rice. But given China's comparative advantage in producing many different varieties of rice, firms are unlikely to find it profitable to use up these quotas.

● Cotton

China produced 22.5 million 480-lb. bales of cotton between August 2000 and July 2001, making it the world's largest producer, just ahead of the United States, which produced 20 million bales. China is reported to have stocks estimated at 8 to 9 million bales (818,500 tons) and agreed to a TRQ of about 3.8 million bales for 2002. Between August 2000 and July 2001, the country imported about 230,000 bales and exported about 450,000 bales. China likely will not use up its full import quota in 2002.

● Soybean oil

Before July 1999, China's policies favored the import of soybean oil and meal and discouraged the import of beans. These policies were reversed in mid-1999 with the result that soybean oil and meal imports decreased sharply while soybean imports increased rapidly. Hence China's 2002 TRQ for soybean oil of 2.5 million tons is unlikely to be used fully. China only imported about 50,000 tons of soybean oil in 2000, and a similar quantity is forecast for 2001. The domestic price for soybean oil was higher than the international price in 2000 and 2001, but at the end of 2001 the gap narrowed.

● Other TRQs

China's WTO agreements also state the following TRQs for 2002: sugar: 1.764 million tons; rapeseed oil: 878,900 tons; palm oil: 2.4 million tons; wool: 264,500 tons; wool tops: 72,500 tons.

● Nonbulk commodities

Most of the TRQ commodities noted above are bulk commodities, but in the past few years nonbulk commodities have made up an increasing portion of trade. Nonbulk commodities accounted for 43 percent of US agricultural exports to China in 2000.

US exports of intermediate agricultural products rose from \$40 million in 1993 to \$402 million in 2000, including soybean meal, soybean oil, cattle hides, and seeds. China's aforementioned soybean import policies have substantially reduced US exports of soybean meal and soybean oil, which peaked in 1999. Nevertheless, US exports of cattle hides and seeds totaled \$229 million and \$27 million, respectively, in 2000.

US exports of consumer-oriented products have risen dramatically, from \$37 million in 1993 to \$216 million in 2000. In 2000, the United States exported \$21 million in snack foods, \$22 million in red meats, \$45 million in poultry meat (wings and feet), \$21 million in dairy products, \$23 million in fresh fruit, and \$25 million in processed fruit and vegetables.

China has overexploited its forest resources for hundreds of years, and despite vigorous efforts since 1949 to remedy the situation, it

Table 2
China's Comparative Advantages in Agricultural Products

Commodity	Comparative advantage	Comparative disadvantage
Vegetables	XXX	
Fruit	XX	
Tree nuts	XX	
Tea	XX	
Aquatic products	XX	
Livestock products	XX	
Tobacco	X	
Rice	X	
Cotton		X
Wheat		XX
Corn		XX
Soybean		XXX
Oilseeds		XXX
Sugar		XXX
Dairy products		XXX
Forestry products		XXX

NOTE: One "X" indicates a small advantage or disadvantage, three "X"s indicate a large advantage or disadvantage. China's large reservoir of labor gives it a comparative advantage in producing labor intensive products such as vegetables, fruit, and rice. Conversely, China's limited arable land (about 1,000 m² per capita) gives it a comparative disadvantage in producing land intensive crops such as wheat, corn, and sugar. Though costs for producing commodities change over time, the above assessments will likely remain valid for the next few years.

SOURCE: Author's estimates, based on conversations with researchers in China and the United States.

continues to be at a disadvantage in forestry products. The United States regularly exports a wide variety of forestry products to China. From 1993 to 2000, US exports of forestry products averaged \$59 million a year. In 2000 the United States exported \$19 million in logs and chips, \$54 million in hardwood lumber, and \$13 million in plywood.

Though China is one of the world's largest producers of aquatic products, US exports of fish and seafood products increased from \$28 million in 1993 to \$138 million in 2000, a nearly five-fold increase. Major US exports in 2000 included \$16 million worth of salmon and \$11 million worth of crab and crab meat.

A long-term agricultural strategy

Exports of products in which China has a comparative advantage should rise as trade barriers decline (*see* Table 2). China is already the world's largest producer of many labor intensive vegetables (such as garlic, onions, potatoes, spinach, and tomatoes) and fruit (such as apples, melons, and grapes). China exported \$3.7 billion in vegetables and fruit in 2001, according to PRC government data, and these figures should increase in 2002. But it will likely take China's firms several years to exploit these new opportunities. China's farmers currently use high volumes of chemical fertilizers and pesticides, and some food products have residues that are above importing country standards. It will be years before farmers and food processors work out cultivation and technical systems to meet international health and food safety standards.

There is no question that China's farmers are some of the finest in the world, but the links between field and consumer are weak. Improvements in transportation, storage, packaging, labeling, processing, and quality standards will require capital investment, technical assistance, government support for the development of domestic standards, and years of effort. China's food-processing industries in particular have made great progress in the past two decades, but further improvements are required to capture overseas market share—they need to find sources of stable financing and assistance with processing technology.

Commodity associations that promote the interests of a particular industry are currently weak in China, and China's foreign affairs officials have not focused on finding market opportunities for the nation's farmers. The industry has formed associations such as the China Feed Industry Association, China National Poultry Association, and China Dairy Association which are a mixture of government and private sector, but they will need time to assess market opportunities. China's foreign service will also need to

allocate and train staff to report on market situations in foreign countries and design a market information system to make this data available to producers and processors.

Consumers in foreign countries will eventually welcome the increase in China's exports of high-quality, safe, and competitive products. At the same time, producers of those products in importing countries will have to face the competition and adjust accordingly.

Rural structural reform

One of the most important effects of China's WTO membership may be the country's implementation of structural reforms to achieve a better balance in the economy between the urban and rural sectors. Over the past 50 years, farmers have supplied capital to build modern China, but the wealth gap between urban and rural areas is widening.

The government has boosted the purchase price of wheat, rice, and corn to sustain rural incomes and to encourage farmers to continue to produce these crops. It is unclear, however,

Continued on page 47

A Test of WTO Compliance: China's Biotechnology Rules

World Trade Organization (WTO) members have criticized the implementing measures that China released in January 2002 governing import and sale procedures for agricultural genetically modified organisms (GMOs). The problems tend to fall within several categories: approval procedures; treatment of processed food products that use GMO processes or GMO raw materials; forms and supplemental materials referenced in, but omitted from, the appendices; grace periods and grandfathering options; and protection of confidential information. The implementing rules, which take effect on March 20, require three levels of approval for the import and sale of GMO products in China: import approval; safety evaluation; and labeling registration.

US government officials have raised concerns with their PRC counterparts about apparent discrimination against foreign companies in the measure's approval processes. The PRC Administration of Quality Supervision, Inspection, and Quarantine is reportedly responsible for imports, while the Ministry of Agriculture has authority over domestic shipments.

The PRC side is also said to maintain the position that each and every import shipment will need a separate import license; approval could take up to 270 days. PRC officials have yet to clarify what data requirements are needed for license-related safety evaluations and whether such requirements would vary based on product classification. The United States hopes to reach an interim solution with Chinese officials that would allow imports to continue while the safety evaluation applications are pending.

Implementation of labeling requirements, a key issue for many exporters of final consumer goods, also remains unexplained. The implementing rules require all products containing or derived from soy, corn, cotton, rapeseed, or tomatoes to carry special GMO labels that have been registered with PRC authorities before import. Analysts expected China to find it difficult to institute procedures by March 20 to determine which imports should carry GMO labels.

—The US-China Business Council



BETTING the FARM

China's Rural Labor Markets

Alan de Brauw, Jikun Huang, Scott Rozelle, Linxiu Zhang, and Yigang Zhang

Since economic and political reforms began in China in the late 1970s, the expansion of the rural economy has, in large part, driven the nation's rapid economic growth. The emergence and dramatic evolution of rural labor markets over the last 20 years have contributed to the success of the rural economy. Many observers of China agree that earnings from nonfarm jobs account for a significant part of the rise in rural incomes and productivity.

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Evidence shows that China's rural labor markets are functioning well

The importance of the emergence of rural labor markets, however, transcends their role in providing rural residents with a way to raise their incomes. For China to modernize successfully, the nation must rely on labor markets to facilitate migration, the first step in the process of urbanization. Without vibrant labor markets that allow workers to find higher paying jobs in more productive sectors, the economy will be unable to transform itself from an agricultural to an industrial one. Hence, the essential question is whether rural labor markets have emerged in a way that will allow them to assist this transformation.

Scholars disagree about the role that labor markets have played so far in China's economic growth. Some researchers believe that the household registration (*hukou*) system, land tenure arrangements, and mandatory marketing quotas hinder the movement of labor, and that the absence of smoothly functioning rural labor markets has hindered growth. Others believe that rural labor markets are spearheading China's drive towards modernization. Their work has illustrated the emergence of functioning rural labor markets and the breakdown of the institutional barriers that once kept rural labor on the farm. Indeed, one of the most basic indicators of market health, the level of employment, supports the hypothesis that the functioning of labor markets has improved over time. The disagreement may exist because most analyses typically consider only part of the labor market, focus on only part of the country, or are limited to a subset of questions about labor market performance.

Rural labor markets grow

Consistent with the findings of other national studies of rural off-farm employment, data from the authors' own China National Rural Survey (CNRS) show that the off-farm labor force expanded steadily between 1981 and 1995 (see p.23). From around 15 percent in 1981, our survey estimates that by 1995, 32 percent of the rural labor force found some off-farm employment. By assuming that neighboring provinces similar to those surveyed have identical rates of off-farm labor participation, we estimate that off-farm rural employment in China rose from less than 40 million in 1981 to more than 150 million in 1995. Although based on a relatively small sample, these numbers demonstrate the consistency of our data with the results from much larger national studies by the State Statistical Bureau (SSB, now known as the National Bureau of Statistics [NBS]) in 1996 and our own 1995 national village survey. For example, the CNRS estimate is almost the same as both the SSB estimate of the nonfarm labor force (31 percent) and our 1995 community questionnaire-based estimates of rural off-farm employment (34 percent).

Despite the Asian financial crisis, China's own structural reforms, and a general slowing of economic growth in the late 1990s, CNRS data show that rural off-farm employment growth continued expanding between 1995 and 2000. By 2000, 43 percent of rural individuals participated in off-farm work, a rise of just 11 percent in the second half of the 1990s. Thus, by 2000,

more than 200 million rural individuals worked off the farm, and more than 50 million of them entered the off-farm labor force during the last five years of the 1990s. Such a large increase in labor flow is one indicator that China's labor markets are functioning well.

Off-farm participation rates in the richest province in our sample, Zhejiang, are both historically higher and grew more quickly than those in other provinces.

Work patterns diversify

Our study also demonstrates that labor markets are providing more than just off-farm income to rural residents and have begun to change the fabric of Chinese society. Trends by employment type clearly show that the target destination of workers over the past 20 years has shifted from rural to urban (see Figure 1). In 1981, nearly 85 percent of rural individuals spent their time in farming. Those who worked off the farm were almost three times as likely to live at home and work within or close to their village (7 percent were local self-employed; 4.2 percent were local wage earners) than to work outside of the village and live away from home

(less than 1 percent were self-employed migrants; less than 4 percent were migrants) (see p.23 for definitions of these categories). By 2000, almost as many off-farm workers were living away from home (more than 85 percent in cities or suburban villages of major metropolitan areas) as in the village. Migrants composed both the largest and fastest-growing component of the rural labor force.

Migrants have also been venturing further and further from home over the past two decades, a trend that has continued in recent years (see Table). In 1990, just under 30 percent of migrants left the province in search of work. By 2000, almost 40 percent of migrants worked outside the province. The shift into the migrant sector was especially striking among workers under the age of 30. In 1990, 31 percent of young workers were leaving home, but by 2000, this figure had reached 45 percent. The trend is much less pronounced, or nearly nonexistent, among workers older than 30. These observations are consistent with our 1995 community-based questionnaire, which found that only 25 percent of workers moved out of the province in 1988, but by 1995 roughly 40 percent did.

Indeed, the data reveal one of the most striking characteristics of China's changing employment patterns: younger workers are increasingly dominating off-farm employment. Our data show that in 1990, participation rates of all age cohorts fell into a narrow range, from 20.5 to 33.6 percent. There was no clear progression when moving from the oldest to youngest cohorts. By 2000, however, the rise in the off-farm participation rates of younger workers accelerated relative to older ones, and a distinct ranking appeared as one moved from the oldest to the youngest cohort. In 2000, young workers in the 16-20-year-old cohort participated at rates more than three times (75.8 percent) those of 16-20 year-olds in 1990 (23.7 percent). Those in the 21-25 and 26-30 year-old groups doubled the off-farm participation rates of their 1990 cohorts. In contrast, older workers, while still increasing their participation rates by 17 percent, worked off the farm at less than half the rate, only 37.6 percent, of those in the 16-20 year-old cohort.

Our data illustrate a growing tendency for young workers to live away from home and engage in less farm work. In 1990, for example, of the younger workers who had off-farm jobs, more than half spent time (either part time or during the busy season) working on the farm. By 2000, less than a quarter of the youngest cohort who worked off the farm spent any time in agriculture. In contrast, in 2000, of those in the 41-50 year-old group who worked off the farm, over 80 percent were still working in agriculture, either on a part-time or seasonal basis.

The trends that are emerging across China's provinces vividly illustrate the changing nature of labor markets and the nation's emerging

Percentage of Migrants Working in Specific Locations by Age, 2000 and 1990

	Off-farm Job Located Within:		
	Own County	Province, but Outside of County	Another Province
All Off-farm Workers			
2000	29.8	30.4	39.9
1990	42.2	28.9	28.9
Workers Under 30 Years Old			
2000	26.1	28.9	45.0
1990	36.8	32.2	31.0
Workers Over 30 Years Old			
2000	37.4	32.9	28.7
1990	42.0	30.5	27.3

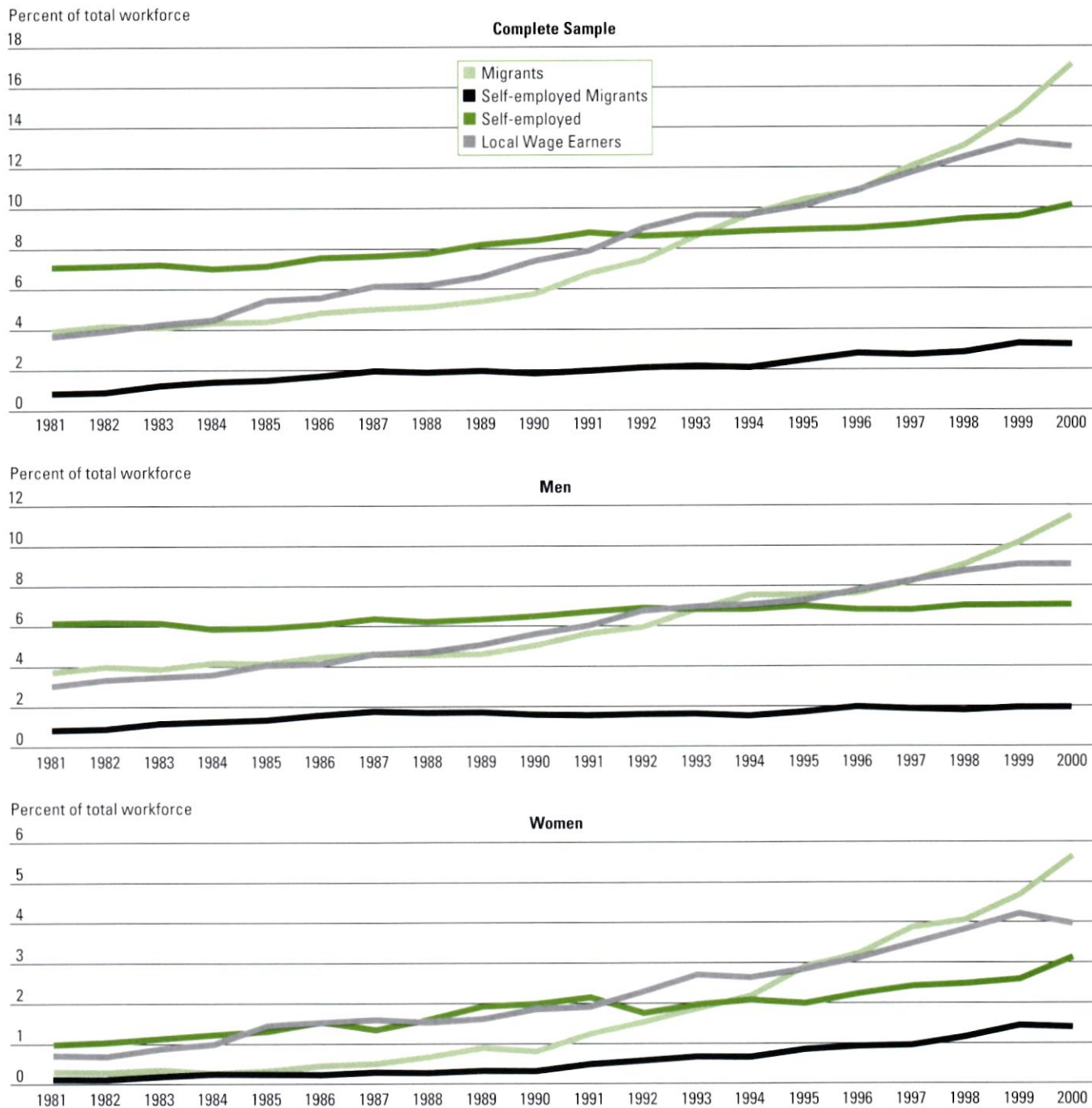
NOTE: Table compares workers who were, for example, 25 years old in 1990 with workers who were 25 years old in 2000.

SOURCE: China National Rural Survey (CNRS)

development path. For example, off-farm participation rates in the richest province in our sample, Zhejiang, are both historically higher and grew more quickly than those in other provinces. By 1990, total off-farm labor participation in Zhejiang neared 40 percent, a level

well above the national average. By 2000, the off-farm participation rate of rural residents across all of Zhejiang (including its poorest southern and western counties) had risen to nearly 65 percent, well above that of poorer provinces. In poorer provinces, such as Sichuan and Hubei,

Figure 1
Percentage of Total Labor Force Engaged in Different Types of Off-farm Work



NOTES: Each line shows total percentages of all individuals (or men or women) engaged in that type of work. The figures include those who are participating part-time or seasonally in agriculture.

SOURCE: CNRS

off-farm participation started at a much lower rate in 1981 and grew slowly until 1990. Since 1990, as migration has emerged as the dominant type of labor activity, labor participation rates in these provinces have accelerated. If the labor market trends of Zhejiang and other provinces portend the future growth paths for China as a

entire 20-year sample period. In 1981, the participation rate of men was more than 25 percent, while that of women was less than 5 percent. And despite low initial levels of involvement in the off-farm sector, participation rates of women grew more slowly than those of men during the 1980s.

In the 1990s, however, the participation rate of women in the off-farm sector rose more quickly than that of men. Women's rising participation rates were driven by their entry into all job categories, although the most striking absolute gains were in migration. Throughout the 1980s, less than 1 percent of women left their homes to work for a wage. Since 1990, however, the rate of growth has been higher than any category of job types for either men or women. By 2000, nearly 6 percent of the female labor force worked as wage-earning migrants. One interpretation of this rise in the participation of women is that more competitive labor markets have forced managers to reduce discriminatory hiring practices, therefore opening up new employment opportunities for those who had previously been unable to participate. Alternatively, the rise in women's employment could have occurred as industries that utilize women's skills, such as textiles and other light manufacturing, developed.

The emergence of labor markets may also have facilitated the emergence of specialized modes of production across China. Drawing on our national community-based survey of 215 randomly selected villages from eight provinces across China in 1995 (including the same six provinces in the 2000 household survey), we find a distinct pattern in the distribution of eco-

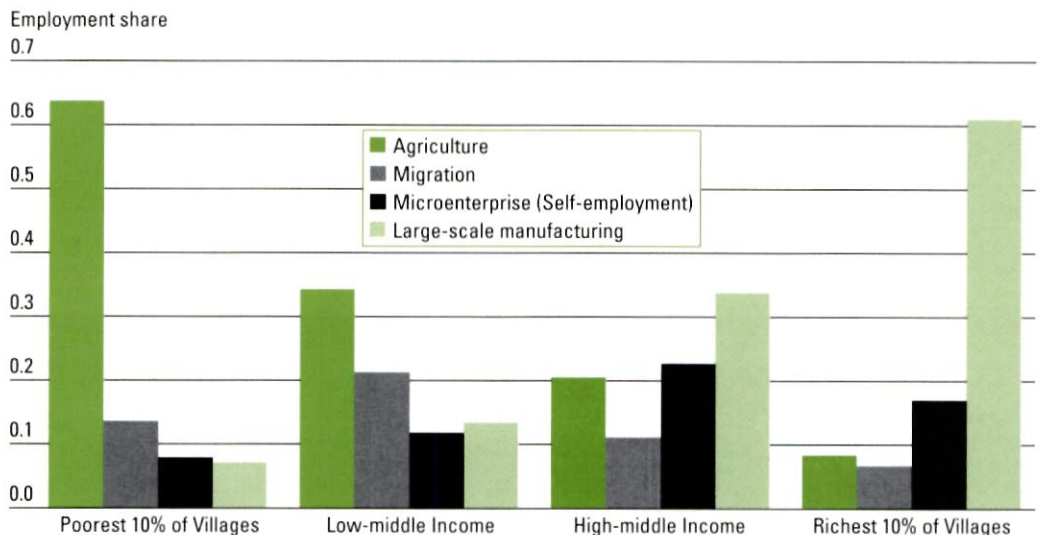
The participation rate of women in the off-farm sector rose more quickly than that of men. Women's rising participation rates were driven by their entry into all job categories, although the most striking absolute gains were in migration.

whole, then we should expect to see continued strong and accelerating labor market growth in the coming years.

Effects of developing rural labor markets

Women have participated in off-farm work at rates far below those of men throughout the

Figure 2
Off-farm Employment by Income Level



NOTE: Shares do not add to one because of "idle" laborers or because of people splitting their time between two endeavors.
SOURCE: CNRS

conomic activity. (These 1995 figures are from Sandeep Mohapatra, Scott Rozelle, and Jikun Huang, "The Evolution of Modes of Production and China's Rural Economic Development." Working Paper, Department of Agricultural and Resource Economics, University of California, Davis, 2001.) The paper of Mohapatra et al. illustrates that employment patterns have been used in a number of studies to represent different types of economic activity.

Figure 2 ranks the villages by average per capita income and shows the percentage of the workforce at each income level that is employed in subsistence agriculture (farmers who only have agricultural income), migration, microenterprise (self-employment), and large-scale manufacturing. In the poorest 10 percent of villages in the sample, people work primarily in subsistence agriculture and are relatively more likely to work in subsistence agriculture than those in richer villages. In contrast, the percentage of the workforce engaged in migration is higher in villages in the lower-middle income category than other income categories.

Likewise, upper middle-income villages tend to specialize in microenterprise operation and participate much less in migration. Finally, large-scale manufacturing is the dominant employer in the richest 10 percent of the sample villages.

A closer examination of our data shows that village specializations across space are interlinked and demonstrates how labor markets have helped transform China's economy. Much of the labor in rural industry (which is almost exclusively located in the suburbs of major metropolitan regions) has come from other rural areas. The emergence of migrant labor markets has facilitated the concentration of large quantities of labor and may have allowed the rise of large-scale manufacturing in the richest parts of China.

Factors that encourage migration

To decompose the labor market trends during the reform period further and to examine

China National Rural Survey

The China National Rural Survey (CNRS), which provided the data for this study, was conducted in fall 2000 in a randomly selected, nearly nationally representative sample of 60 villages in Hebei, Hubei, Liaoning, Shaanxi, Sichuan, and Zhejiang provinces. Data collection involved students from the Center for Chinese Agricultural Policy, Renmin University, and China Agricultural University, and was led by Loren Brandt of the University of Toronto, Scott Rozelle of the University of California, and Linxiu Zhang of the Center for Chinese Agricultural Policy, Chinese Academy of Sciences. Households were paid ¥20 (\$2.42) and given a gift to compensate them for the time that they spent with the survey team.

To reflect varying income distributions within each province accurately, in each province we randomly selected one county from within each income quintile, as measured by the gross value of industrial output. Two villages were randomly selected within each county. The survey teams used village rosters and our own counts to choose 20 households at random, both those with their residency permits (*hukou*) in the village and those without. A total of 1,199 households were surveyed.

The CNRS project team gathered detailed information on household demographic characteristics, wealth, agricultural production, nonfarm activities, and investment. Several

parts of the survey were designed to learn about the household's migration decisions as well as its participation in other labor market activities over time. For roughly half of the households surveyed (610 out of 1,199), a 20-year employment history form was completed for each household member and each child of the household head (even when they were no longer considered household members). For each year between 1981 and 2000, the questionnaire tracks each individual's participation in off-farm employment, the main type of off-farm work performed, the place of residence while working (within or outside the village), the location of off-farm employment, and whether or not each individual was self-employed or earning a wage.

Using the employment history data, we separated off-farm jobs into four types: migrant wage earners (migrants); self-employed migrants; local wage earners; and local self-employed workers. Migrants were identified as people with off-farm jobs who did not live in the household while working. Local wage earners were identified as people who had off-farm employment, were not self-employed, and lived at home while they worked. All people who reported being self-employed and living off the farm were categorized as self-employed migrants. The definitions applied to both members of the household and children of the household head.

We asked about the extent of the participation of each member, in each year, in the household's on-farm activities. A household labor force measure was created by aggregating all individuals above the age of 16 who indicated that they were either working in or searching for employment in agriculture or industry in each year. If a person over 16 indicated he or she had retired, could not work for health-related reasons, or was enrolled full-time in school, he or she was not included in the labor force total.

We also included variables measured at both the individual and household levels to explain off-farm labor market participation. In most of our estimations, we use data on 2,297 individuals from 610 different households that were employed—in either the on-farm or off-farm sector or both—at some time during 1981-2000. Because some individuals enter the labor force during this period and others stop working, we do not have a full panel of 45,940 observations; rather, we have 34,257 observations in total. We omitted villages in the rare case in which there was zero participation in a particular type of employment. As a result, 33,214 observations from 59 villages were used to explain migration participation, and 33,198 observations from 59 villages were used to explain participation in self-employment.

—Scott Rozelle et al.

For each additional year of education, the probabilities of becoming a migrant or a local wage earner both rise by 16 percent.

the determinants of off-farm labor participation, we estimated the determinants of migration, local wage employment, and self-employment using the entire 20-year sample. Some of our findings include:

- A larger household labor force increases participation in the wage earning sectors.
- Male participation in migration is more than 280 percent higher than female participation during the entire sample period. Likewise, male participation exceeds female participation by 107 percent in the local wage-earning markets and 229 percent in self-employed activities.
- Younger workers are 97 percent more likely than identical individuals who are 10 years older to be migrant workers. In the case of migrant wage earners during the entire sample period, the older an individual is, the less likely he or she is to work off the farm.

Our results also show the importance of human capital—education, training, and experience—in determining an individual's participation in off-farm activities. For each additional year of education, the probabilities of becoming a migrant or a local wage earner both rise by 16 percent. Participation in formal training and apprenticeship programs seems to increase participation in all forms of labor market activity. Individuals also benefit from the experience of other household members. When members of a household in China have experience in off-farm labor markets, other individuals in the same household are more likely to work off the farm.

This pattern appears across provinces in China. In Zhejiang, one of China's most developed provinces, rural residents are participating in markets at younger ages, and are better rewarded for their formal education with employment opportunities, than in other provinces. Zhejiang women are far more likely to have off-farm employment in the province. Additionally, the variables that show that individuals find jobs through family connections (instead of according to their own human capital) are either insignificant or smaller in magnitude for Zhejiang than in the rest of China. In summary, assuming that Zhejiang's labor markets foreshadow trends for the rest of China, the evolution of labor markets nationwide is proceeding in a positive and productive direction.

Promising results for future labor markets

China's rural labor markets are performing in a way consistent with an economy that is shifting from an agricultural to a non-agricultural base and a population that is shifting from

rural to urban. Our descriptive analysis illustrates that labor markets have allowed migration to become the dominant form of off-farm activity; been increasingly dominated by young workers; expanded most quickly in economies or areas that are relatively well-off; and increasingly drafted workers from groups in the population, such as women, that had been excluded from participation. Rural workers also showed signs of specialization, particularly when examined by age group and by the average per capita income of their village. Young workers worked much less on the farm than older workers in 2000. Most remarkably, young workers in 2000 participated in much less farm work when compared to those in the same age groups in 1990 and 1981. China could be producing a new generation of rural residents who know much less about farming than their predecessors and who will spend their whole lives off the farm.

We also find robust support for all of the descriptive findings and show that many of the trends most consistent with the emergence of economy-transforming labor markets are becoming stronger. Most notably, the rapid rise in employment continued even during the late 1990s, a time when some feared that macroeconomic conditions might keep rural residents on the farm or drive them back to the farm.

Over time and across China, stronger, younger, and better-educated workers are working off the farm. Barriers to entry are falling for women. Labor markets are showing less and less preference for nonmarket characteristics, such as personal connections. If China continues to change at the pace it has in the past 20 years and as it has in its wealthier regions, we should expect rural residents to continue shifting from rural to urban areas and from agricultural to industrial work. Indeed, all of these trends are consistent with an optimistic view of China's future development—at least in terms of labor markets.

Well-functioning labor markets will also help ease China's rural economy through its accession into the World Trade Organization (WTO). Workers from rural areas, including some of China's poorer regions, will be able to take advantage of new employment opportunities in factories built to meet higher demand after China gains better access to world markets. Moreover, to the extent that households are able to put a member into an off-farm job, adverse effects from WTO-induced lower agricultural prices can be at least partially offset. Foreign companies, both those that are already in China and those that enter after WTO, should expect to find ever more eager, readily available, and better-trained workers. 完

Council Bulletin

Upcoming Events

China Operations 2002

Tuesday, March 26
8:30 am-2:30 pm
The St. Regis Hotel
21 Jianguomenwai Avenue
Beijing

For more information
contact
alicesh@eastnet.com.cn

Biennial Gala 2002 & 29th Annual Membership Meeting

Washington, DC
June 5 & 6

Event Wrap-Up

Council's Forecast Conference Features USTR Zoellick

The Council kicked off its annual Forecast meeting with a reception on Capitol Hill on the evening of January 30. The next day, the meeting's first panel focused on political and economic trends in China. Cheng Li of Hamilton College spoke about China's upcoming leadership change, Robert Ross of Boston College discussed US-China relations, and Fred Hu of Goldman Sachs Group, Inc. talked about China's economy. The second panel, on market operations, featured the Council's Patrick Powers speaking on the business climate; Ken DeWoskin of PricewaterhouseCoopers on navigating China's information technology landscape; Nicholas Howson of Paul, Weiss, Rifkind, Wharton & Garrison on new entry and exit strategies; and Amelia Porges of Powell, Goldstein, Frazer & Murphy on China in the World Trade Organization (WTO).

United States Trade Representative Robert B. Zoellick delivered the keynote speech, focusing his remarks on China's WTO entry. He discussed China's role in future trade negotiations, the regional benefits of China's WTO entry, the effect of WTO entry on relations between China and Taiwan, and the role of US companies in China's implementation efforts. For the full text of Zoellick's speech, see www.uschina.org/public/speeches/2002/01/31-zoellick.html.

Washington

December

Roundtable Discussion Featured PRC Embassy First Secretary Zhao Baoqing

January

Forecast 2002 Featured US Trade Representative Robert Zoellick

Luncheon Honored PRC Vice Minister of Foreign Affairs Li Zhaoxing

Issues Luncheon Featured James R. Keith and colleagues from the Office of Chinese and Mongolian Affairs, US Department of State

Roundtable Discussion Featured Bruce Quinn of the Office of the US Trade Representative's China Desk and Mark Cohen of the US Patent and Trademark Office's International Affairs and Legislative Office

February

Issues Luncheon: China's Entry to the WTO: Implications for China and the World Economy Featured Dr. Nicholas Lardy of the Brookings Institution

Chicago

February

China Business 2002 Featured US-China Business Council President Robert A. Kapp, Director of China Operations Patrick Powers, Director of Business Advisory Services Karen M. Sutter, and Manager of Business Advisory Services Ann M. Weeks

San Francisco

February

China Business 2002 Featured US-China Business Council President Robert A. Kapp, Director of China Operations Patrick Powers, Director of Business Advisory Services Karen M. Sutter, and Manager of Business Advisory Services Ann M. Weeks

In the Next Issue of

THE CHINA BUSINESS REVIEW

- Financial Services
- Insurance
- Company Profile: Chubb

Software Integration in China

Thomas Brizendine

China's young information technology (IT) environment is highly mixed—end-users, vendors, and even developers lack a deep understanding of technologies and products. The environment is also more variable than in developed economies, with some good programmers and companies, many bad ones, and scattered, inconsistent pricing. Moreover, China's entire industry is “imported”: virtually all of the

A review of the domestic software development market suggests ways to integrate software systems in China effectively

technologies, processes, standards and practices, and even the language of development itself—English—originated overseas.

Thus, any company in China that hopes to integrate its various software systems must take into account not only issues faced by its counterparts around the world, but also some that are unique to China. Among these are an immature industry damaged by the bursting of the global Internet bubble, a thin pool of software developing talent, and a strong government presence that can both help and hinder industry developments. Despite several years of reform to separate government from industry, various government ministries still have subsidiaries that retain the full backing of their parent organization—and thus act as monopolists in the market.

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First, some definitions

When it comes to software development and software integration, the IT world of today lives with poorly defined terminology. It is therefore helpful to spend a moment on definitions (*see* Glossary, p.27).

First, “software development” is the process of writing software according to a defined objective. This can be anything from a teenager writing his or her first “Hello World” program to commercial product development or custom application development. “Software integra-

tion” is the process of making software work together for some given purpose. It typically involves all of the elements of software development, but it starts with an existing software environment.

Software development and software integration operate from opposite ends of the same scale, with neither too far removed from the other. Even pure software product development requires significant integration, and pure integration projects typically require significant development work. Both must deal with a wide variety of products and standards, and both have a wide range of products and tools at their disposal, most of which are the same.

Integrating different software and hardware platforms is complicated and involves expertise in many areas. A large number of companies, all with competing claims, participate in the process. Usually these claims are proprietary names built upon variations of several basic technologies. The website EbizQ (www.ebizq.net) provides a coherent view of the state of the software integration industry today in the West and is one of the better reference sites for the industry as a whole.

IT in China

In the early days of China's market opening, the government wasted most of its IT spending on efforts to reverse engineer key hardware technologies. These efforts focused on circuit design and other technologies with mixed civilian-military importance. This phase, which absorbed nearly all of China's limited talent pool, lasted into the mid-1990s.

From the early 1990s on, the industry began to diversify, and Chinese programmers began to develop a large number of relatively simple information systems, typically by directly manipulating a database for a limited set of functions, such as database searching and reporting, and the ability to update information interactively. Systems were developed separately for each enduser and little thought was given to integration or overall design issues. In the mid-1990s, some of China's more advanced software professionals began to think seriously about integration and design. At that time, however, a major disaster was washing across the oceans and into China—the Internet bubble.

The bubble expands...

The Internet bubble brought with it waves of silly business ideas and marketing hype of products, technologies, and methodologies. And it brought with it lots of money—money to burn.

What followed has set China's technologists back by at least a decade in terms of developing systems thinking, component-based design, and true object-oriented design and development capabilities. Young Chinese software developers, who had not yet mastered the necessary technologies or development techniques and practices, suddenly found themselves flooded with money, fancy titles and offices, and waves of hype. They naturally developed a distorted view of the industry and their place in it.

The Internet bubble affected not only the business and practices of developers, but also the perceptions and attitudes of commercial and institutional buyers and government policy. Impractical expectations were created in all quarters.

...and bursts

The effects of the bubble on China's immature industry were much more severe than on the mature industries in developed nations, where a generation of youngsters had their moment in the sun but were and are surrounded by people who have years of experience and a deep understanding of systems thinking, software design, and development best practices. These young programmers in the developed world quickly learned after the bubble that there is, after all, a difference between a compiled language and an interpreted language and that there is, after all, a reason why Unix and all its descendants are the workhorses for real-time systems.

But for most of the industry in China, the fallback has been a return to the mid-1990s.

Of course, this characterization ignores the few PRC companies that have embraced, or that are trying hard to embrace, international standards. But for most it is a scramble for survival, with little time or money for internal advancement.

Glossary

Compiled language vs. interpreted language

A compiled computer programming language, such as C or C++, is converted into machine language through a compiler. An interpreted language such as Java is interpreted into the machine language by a virtual process as the code is executed. In general, compiled languages are much faster, use far fewer system resources, and are platform specific. Java is platform independent, but because of the need for the virtual Java machine—the interpreter—Java is slower and uses more system resources. This distinction is lost on a generation of Chinese developers who have only worked in the technically undemanding Internet domain and not with highly demanding real-time systems, which rely on platform-specific compiled computer programming.

Component-based design is the process of developing software in defined components and then using them in a structured fashion. Done well, this creates better systems as it controls the logic and structure and allows for components to be reused in other projects, thus reducing development costs.

Common Object Request Broker Architecture (CORBA) provides a set of common interfaces through which object-oriented software can communicate, regardless of computer platform. This standard was set in 1991 by Object Management Group, a consortium of software developers, vendors, and users founded to promote the use of object-oriented technology in software applications.

Enterprise resource planning (ERP) is an industry term for integrated, multi-module

application software packages that are designed to serve and support multiple business functions. ERP systems can link all of a company's operations, including human resources, financials, manufacturing, and distribution and can connect the organization to its customers and suppliers.

Object-oriented design is a method of software development that groups related functions and data into reusable programming chunks. Properly handled, object-oriented programming can reduce development time on new projects.

Rational Unified Process® (RUP) is a web-enabled set of software engineering best practices that provide guidance to streamline development activities. An industry-wide process platform, RUP allows developers to choose the set of process components appropriate for a specific project. RUP allows all team members on a project to use common processes that improve communication and create a common understanding of all tasks, responsibilities, and artifacts. One centralized exchange gives developers access to process components such as Rational Software, platform vendors, tool vendors, and domains experts.

Systems thinking is the ability to look at a system as an integrated whole; the art and profession of analyzing and defining the various parts of such a system and how they should work together.

Unix is a general-purpose operating system developed by Bell Labs in the 1970s that now hosts much of the Internet.

Use case analysis is a standard technique for gathering requirements in many modern software development technologies. For the development of business applications, a use case is a list of steps, manual and automated, necessary to accomplish the business goal. Use cases describe the business process, which documents how the business works and the business goals of each interaction with the system. These use cases are then extended to show how the system will support the business goals.

Value-added reseller (VAR) In recent years, this term has come to include application service providers, Internet service providers, e-business consultants, information technology consultants, web integrators and developers, independent software vendors and interactive agencies, and other types of providers and traditional resellers of hardware.

SOURCES:

www.varbiz.com/sections/aboutvb/about.asp
www.cbd-hq.com/articles/1999/991115rw_caseanalysis.asp
www.rational.com/products/rup/faq.jsp
www.cnet.com/Resources/Info/Glossary/Terms/object.html, [omg.html](http://www.cnet.com/Resources/Info/Glossary/Terms/omg.html), [corba.html](http://www.cnet.com/Resources/Info/Glossary/Terms/corba.html), [unix.html](http://www.cnet.com/Resources/Info/Glossary/Terms/unix.html)
www.swif.uniba.it/lei/foldop/foldoc.cgi?object-oriented+design
www.intermec.com/erp/erp_glos.htm
www.erpassist.com/pub/erp_overview.htm

—The US-China Business Council

In the guise of standardization and market regulation, the government has established a series of administrative guidelines that, in effect, give large state-owned enterprises a huge advantage, if not near monopoly in certain circumstances, over their private-sector competitors.

Fortunately for China, the needs of the information age continue to mount. China's industries and institutions are spending more on basic systems, including, for the first time, integration. And the longstanding habit of burying software costs inside of hardware costs, while still common, seems to be coming to an end as clients become more sophisticated and system demands increase beyond what simplistic software solutions can handle. Even in the post-bubble hangover, China's software integration and development markets likely posted growth rates of more than 30 percent in 2001.

Thus the stage is set for a more advanced round of development to begin. In China's chaotic IT environment, many of the weaker software development companies are folding. Others are rapidly moving away from Internet-related products and services to those more directly involved with industry and government. At the same time, clients are becoming more sophisticated. For example, in the second half of 2001, China's telecommunications companies began requiring Common Object Request Broker Architecture (CORBA) compliance from their software vendors, creating quite a stir. Up to this point, CORBA was virtually unknown in China. These two trends of consolidation and increasing sophistication are taking place in a market that is still growing respectably.

Software project management

The project-management method talked about most in China is the Rational Unified Process (RUP), but this is mostly marketing myth. In reality project management for software development in China today involves the mechanical application of traditional project management methodologies. The overhead, especially in terms of personnel, is high because the process must be cut up into the finest pieces possible and each piece—or task—managed separately. This is, of course, one of the direct results of the programmers' generally low skill levels. An interesting note is that for some of the better companies this format for project management works fairly well. Other problems still exist, but the fact that some of the stronger companies continue to climb the technology scale while producing excellent corporate growth rates clearly indicates that there is a market imperative for software project management in today's China.

The players

The various customers and providers of software integration services include

● The PRC government

The Chinese government is, like any government of a large country, a multiheaded creature of strikingly different appearance depending upon the angle from which it is viewed. Four

views are relevant here: as a client; as a supporter of industry; as an industry regulator; and as a monopolistic agent.

The Chinese government is generally a good client, in terms of technical competence, ability to communicate, degree of organization, thinking processes, cooperativeness, and ability to pay. Nevertheless, because most government agencies are not terribly sophisticated technically, they are often unable to articulate their requirements or specifications clearly and tend to focus on hardware.

But, increasingly aware that their needs are not being met, government clients are willing to work with development teams to define their requirements. Government agencies are also recognizing that software projects must be treated differently from hardware and other sorts of projects in terms of time, management, and pricing, among other aspects, and that the software is what delivers (or does not deliver) the desired functionality.

As a strong supporter of the IT industry, the government offers a variety of incentives that range from tax concessions to research grants. On the other hand, as a regulator it often makes decisions in areas from financial system practices and regulations, to educational system development, to Internet supervision and control, that restrict access to funds or technologies and that tend to restrict the industry's natural growth and progress.

This is bad enough, but in the guise of standardization and market regulation, the government has established a series of administrative guidelines that, in effect, give large state-owned enterprises (SOEs) a huge advantage, if not near monopoly in certain circumstances, over their private-sector competitors. These advantages include access to bank financing or even the requirement that any contract applicants for government (and major SOE) work obtain a Certification of Capability and Quality (*cizhi zhengming*), issued by the Ministry of Information Industry at national, provincial, and municipal levels. The standards set for this certificate have nothing to do with projects executed or objective work process considerations, but are based strictly on traditional measures of scale such as number of engineers, total net assets, registered capital, and annual revenues. In the Chinese context it is very difficult for a truly private-sector company to actually (and honestly) meet these standards.

● Chinese companies

It is almost impossible to categorize Chinese corporate clients in the current environment. Like clients everywhere, they range from surprisingly sophisticated and cooperative to fairly clueless and difficult to work for. The main difference between software companies in China and those in developed countries is that few Chinese companies depend on software-derived or -supported functionality for competitive advantage. Compe-

tition is based primarily on price, distribution, and relationships. Though this pattern is changing rapidly, and IT requirements are rising correspondingly, in today's China you can find \$30 billion multinationals with virtually no IT functionality besides e-mail and a marketing website and private small and medium-sized domestic companies with fully integrated enterprise resource planning (ERP) programs.

● Foreign software vendors

Foreign software vendors of all types have entered the China market in the last five years. Most of them work through channel partners—companies, such as distributors through which another company sells its products or services—and they exhibit a wide range of business and pricing practices. Foreign software vendors suffer as much from certain environmental influences as their domestic counterparts. For example, technical support is generally effective if the issue at hand is simple or standard, but most difficult issues must be passed offshore.

Most local staff of foreign software vendors also lack a full understanding of the vendor's entire product range or the more sophisticated aspects of any given product range or technical application. If one looks at the product and technology offerings of most of these companies (BEA Systems, Inc., Computer Associates International, Inc., IBM Corp., IONA Technologies, Oracle Corp., and SAP AG, to name a few), and then discusses the technologies with the domestic organization, it quickly becomes clear that there is a large technical gap. But because they still know more than the rest of the industry in China, these local vendors can charge the same technical consulting fees that their counterparts charge in developed countries.

● Domestic software developers

The capabilities and work quality of domestic developers range widely, but given the status of local programmers and designers, most domestic companies have a hard time performing at advanced levels. Still, most systems in China do not require highly advanced skill levels at the moment and most customers are not yet sophisticated enough to make balanced purchase decisions. This is because most agencies and enterprises are less developed than their Western counterparts; for an organization that is still primarily paper-based or hand-labor-based, it makes little sense to talk about higher levels of automation or integration. Related to this is the nature of China's market, in which it is difficult for domestic developers to evaluate investment and return from more advanced IT investments. Indeed, efficiency is difficult to measure anywhere in the world—but it is nearly impossible to measure in China, where many enterprises do not know their actual costs.

Domestic software vendors fall roughly into three groups. The first includes agents, distributors, or value-added resellers that sell domestic and international packaged products. These

companies range from highly competent within normal requirements to companies that are based solely upon relationships (to get business in the first place) and that hire ad hoc teams of low-cost technical staff.

Custom development and integration shops are numerous and cover the entire range in terms of size, geographic coverage, technical capabilities, and other corporate measures. They tend to be industry focused and regional. To make inroads into their respective industries they must generally have strong domestic relationships within the industry, which can result in technical mediocrity.

The products and product-based solutions developed domestically vary widely across industries and applications. In general they tend to be less expensive and have far more limited functionality than foreign products and solutions. Domestic solutions are often based on open source code that is repackaged for the China market. Nevertheless, domestically developed solutions compete fiercely in many industries, from tax collection to hospital information systems. The language barrier and the reluctance of foreign vendors to localize their offerings are strengthening this trend.

Intellectual property issues

Intellectual property (IP) issues are of concern in China not only to foreign investors, as reported widely in the international press, but also to domestic software companies. In spite of recent successes of foreign and domestic companies in enforcing IP rights through legal channels, several areas of concern persist. The first is the outright theft of IP that is not protectable—usually at the hands of clients. For example, in custom development or integration, a great deal of valuable IP is not protected by copyright. This IP often takes forms other than code, reaching into design and analysis areas as well. When the client chooses to pass this information on to a competitor, a company has little recourse.

The second area of concern is theft of IP by employees. Employee turnover rates in the software industry in China are high, and professional ethics are underdeveloped. Add to this the weakness of legal remedies, and the result is that employee theft, though not unique to China, is often a more serious threat there.

The third area of concern—though not widespread in China—is the theft of existing IP design by third parties. This remains less of a threat because reverse engineering software is difficult, even with all of the source code. Reverse engineering is rarely completed before the original product is upgraded or even obsolete.

And of course there is the illegal copying of packaged products. This problem gets high-profile press coverage, but affects major systems integration product vendors and developers minimally. Copying is mostly concentrated in consumer

Developing in China is still more effective than outsourcing to India or elsewhere because of the analysis and specification issues and, given the proper approach, because Chinese developers are still a relatively good value.

products, small network installations, development tools, and games. When a company installs a full system, it must purchase real licenses.

Developing in China: Common sense and extra effort

So, what does all this mean for the foreign-invested company in China that needs to develop or integrate software? And why develop in China at all if there are so many problems?

The first reason to invest is the importance of developing in the Chinese language, because most business processes in China differ significantly from those in other countries. Yet com-

plete localization is neither easy nor inexpensive. It often makes more sense to develop a limited functionality set locally than it does to localize fully functional applications. Second, once all problems are understood, developing in China is still more effective than outsourcing to India or elsewhere because of the analysis and specification issues and, given the proper approach, because Chinese developers are still a relatively good value. Third, major companies need to have dependable local suppliers, special local knowledge, language skills, and continuous service and support.

In general, companies should pay attention to three things when developing in China: control of the specifications and design, oversight and control over the development process, and time management. Companies should pay attention to these regardless of where development takes place. In China, however, they are even more critical.

Analysis phase: Business logic, specification, and design

The development of system features, functionality, design, and development specifications needs to be done well for a system to work well. In China, the client must lead this process. A good Chinese developer, given clear requirements, will produce the desired system. The problem is that Chinese developers rarely have strong research and analysis capabilities. Thus, unless the client is able to articulate its desires clearly and in detail, it may encounter problems with the Chinese developers' relatively superficial process of investigation. The requirements as understood by the local developer are rarely complete, and development projects as a result often go into an endless cycle of review and revision. Such a process usually leads to an unsatisfactory compromise and creates layers of discarded code within the system, in addition to leading to numerous project delays.

This process results in surface-level solutions. In the development of any system, many choices must be made. These choices are not limited to the functionality of the system for the user, but include design and technology issues that have large impacts on system dependability, efficiency, and expandability. Analysis done at the surface level focuses only on the direct requirements of the endusers—what they will do and see. But beneath this interface are the architectures, designs, and technologies that will determine the true value of the investment. These are choices that need to be made in an organized and consultative environment. In China, these choices tend not to be examined in depth. The developer often selects whatever method is the most time efficient and that delivers the minimum of what was promised. A great deal of difficult and time-consuming analysis of all levels of the project ought to be done—but usually gets short-changed.

Education and the Talent Pool

China's pool of trained programmers is very limited. Until the mid-to-late 1990s China's universities had few positions in computer science—and most universities to this day do not emphasize software programming in computer science programs. Traditional engineering was and is the prime emphasis. As late as 1988, electrical engineering at Qinghua University focused on power generation. Add to this that China has extremely few universities relative to its high school population, and the result is a tiny pool of trained talent.

Software development is a strange mixture of logic, art, and hard skills. In an educational system where memorization is the dominant form of learning, even trained programmers often lack that special spark of ingenuity that is so valuable in software development. Only years of experience, which most do not have, can remedy this inadequacy.

China also lacks a young "computer nerd" culture. Most of today's 20-year-olds had no access to computers when they were growing up, and the intense pressures of the entrance examinations at every level of the education system leave little time for such recreation anyway. Such a culture may be budding among today's urban teenagers in China, but the enthusiasm of this set is not matched by the technical levels of their counterparts in the West. As a result, Chinese programmers, with some exceptions, are short on skills.

Testing Chinese programmers

As an experiment, Delineate Design Associates recently tried to hire only people that could pass technical tests. The test subjects covered Unix operation, Unix programming, C programming, C++ pro-

gramming, Java programming, Oracle operation, Oracle programming, component design, and documentation practices. Each of these subjects contained three questions: basic, intermediate, and advanced.

We did not expect any single programmer to take all of the tests, nor did we expect any given programmer to pass very many of them. Each programmer was asked to take the test that corresponded with his or her resume. The test was designed by three people—one American, one Swiss, and one PRC national—with an average of 15 years of experience each in software development and management. After testing well over 400 programmers over four months, not a single programmer has passed the intermediate or advanced Unix tests. Only a handful have passed the advanced C, C++, Java, and Oracle tests. Component design mystifies the vast majority, and documentation practices are well below acceptable standards.

This admittedly unscientific sample was taken from Beijing during a relatively short period of time, but the results carry significant implications: the salary expectations of most of these young programmers are widely at variance with their actual skills. Furthermore, they are completely unaware of how shallow their skills actually are, creating a large and potentially dangerous expectations gap. This is the true cost of the Internet bubble—shallow skills and extreme dependency on development tools, mismatched expectations, and poor professional habits. All this at salary levels that exceed those commanded by better-skilled Indian software engineers.

—Thomas Brizendine

Systems developed at the surface level are usually difficult to maintain should they have problems. Often such systems use resources inefficiently and integrate with other systems poorly if at all. Development documentation is typically insufficient for other developers, internal or external, to understand the system fully. Such systems have a common and inevitable fate—complete replacement.

Thus, when developing software anywhere, but especially in China, companies must pay special attention to the design and analysis phase. Finding one of the better developers helps, but the client's IT staff should be highly involved in the analysis and design phases. To make their involvement productive, they should learn the basics of use case analysis, conduct a review (with or without the developer) of key technologies, and even read a book or two about the software development process. The key here is not for the client to manage the process in its entirety, but to learn to ask the right questions, track and approve the process and documentation, and verify key decisions with related parties or outside experts. Remember that if the foreign investor's own IT people cannot understand the documentation, other local developers will not understand it either.

Oversight and control

Oversight and control is as important as analysis and design. In general this means tracking the development process by tracking the documentation the project generates. This documentation should be checked against various portions of the project such as the prototype, user interfaces, data inputs or outputs, or other available prototypes and tests that are part of the development process. If the developers cannot supply clear documentation during the development process, the project is likely entering a twilight zone where programmers code on the fly and document—whatever they can remember, and if they feel like it—later. This is a sure and early sign of impending problems. Appropriate and complete documentation formats and procedures are part of every formalized development methodology, and most of these are available, at least in simplified format, from the Internet. If a company conducts development projects frequently, some specialized training for IT staff in this area would be money well spent.

Managing time

It is unfortunate that in most companies' planning and budget processes, time frames regularly get squeezed. It is even more unfortunate

that when time pressures arise, what typically gets cut is the most important but least tangible part of the development process. This is true everywhere, but is particularly dangerous in China.

Development projects under excessive time constraints often suffer from shortcuts. Sometimes this is unavoidable. But by participating actively in the project, the client can control and predict the use of time fairly well. The extra time spent on these activities usually results in time savings in the actual implementation stage. It

Unless the client is able to articulate its desires clearly and in detail, it may encounter problems with the Chinese developers' relatively superficial process of investigation.

also reduces the number and difficulty of corrective cycles, resulting in tighter time schedules overall.

Forewarned is forearmed

Software development anywhere is a difficult process, and it is no different in China. The process in China has some special aspects that clients must be sure to take into account. In short, these consist of analysis, process supervision, and time management. A little extra effort will pay significant dividends.

The environment in China is difficult and will remain so for the next few years. But China's software development market is still growing at more than 30 percent per year, and as the country modernizes such growth will only continue. Many foreign-invested companies will find it necessary to develop at least some software locally, for the reasons previously mentioned. Effective development can be done in China, but it requires additional time and close attention to detail.

In the longer run, as Chinese developers become more experienced and professional, they can be expected to take on ever-higher levels of work with improving standards of quality. But would-be clients must be aware that it is unlikely that they will ever threaten India for software outsourcing business. Some shops may well participate effectively in this business, but domestic demand will easily absorb most of the limited supply of trained Chinese programmers for the foreseeable future. 完

Cracking the Chemical Sector

Sigmund Floyd

China is already one of the world's leading chemical producers, ranking first in the production of ammonia, synthetic fertilizers, fibers, and dyes; second in production of agricultural chemicals and tires; and third in production of sulfuric acid and alkali and in refining capacity (see Table 1).

Foreign investors in China's chemical industry are preparing for new opportunities in the post-WTO environment

The structure of China's chemical industry, following the reorganization of 1998, broadly includes four groups (see Figure). One group consists of the major petrochemical concerns that report directly to the central government, such as China National Offshore Oil Corp. (CNOOC), China Petroleum and Chemical Corp. (Sinopec), and China National Petroleum Corp. (CNPC). Another group includes major "group companies," such as Shanghai Hua Yi (Group) Co., that fall under provincial governments. Private and township enterprises constitute a third group. The fourth category, the foreign-invested sector, overlaps the other sectors.

As China begins its first year as a member of the World Trade Organization (WTO), the Chinese chemical industry is in the midst of a major wave of multibillion-dollar foreign investments stretching out beyond 2005, involving such leading companies as BASF AG, Bayer AG, BP, Exxon Mobil Corp., and Royal Dutch/Shell Group. Several of these firms already have a significant presence via smaller investments, but have embarked on major investments as the perceived risk profile of China has declined.

The domestic sector

China has at least 8,000 chemical producing companies today, ranging from large-scale petro-

chemical enterprises to tiny township enterprises. This collection of enterprises looks to the outsider like a maze of entities, some partially privatized, that report variously to the central government and local governments.

Indeed, the central government, through its approval authority, still maintains a strong influence over companies in the petrochemical sector regarding deployment of capital, while provincial-level authorities usually exercise far less control, and township enterprises have a considerable degree of independence from direct government influence.

Group companies

The chemical industry in many provinces is organized around a provincial-level group company. Among such group companies, the largest are Hua Yi and Beijing Chemical Industry Group Co. Ltd. Hua Yi, established as a corporate structure in 1996, traces its lineage to the former Shanghai Chemical Industry Bureau. Under its umbrella are all of the major chemical and pharmaceutical enterprises in Shanghai Municipality, except Shanghai Petrochemical Co., Ltd. and Gaoqiao Petrochemical Corp., which are subsidiaries of Sinopec. (Shanghai is somewhat unique in having placed administrative and guidance responsibility for pharmaceutical enterprises under the same umbrella as chemicals.)

Hua Yi had combined sales (including foreign joint ventures [JVs]) of ¥15 billion (\$1.8 billion) in 2000, according to the company. It has six principal subsidiaries—Shanghai Tian Yuan (Group) Co., Shanghai Tire and Rubber Co., Ltd., Shanghai Coking and Chemical Co., Shanghai Wujing Chemical Plant, Shanghai Pharmaceutical (Group) Co., and Shanghai Chemical Industry Park—each of which has numerous secondary and tertiary subsidiaries. Tian Yuan is the parent company of Shanghai Chloralkali Co., a company that has been 52 percent privatized via listing on the Shanghai exchange. Hua Yi is the country's top producer of sodium hydroxide (350 kilotons [kt]) and polyvinyl chloride (350 kt) and is also a major producer of methanol (200 kt), coatings, pigments, and other products. Hua Yi, either directly or through its sub-

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subsidiaries, has JVs with an impressive list of foreign companies, including Akzo Nobel NV, Atofina, BASF, Bayer, The BOC Group, Cabot Corp., F. Hoffmann-La Roche Ltd., Rohm and Haas Co., and UOP LLC. Hua Yi is also involved in the Shanghai ethylene cracker project of BP and Sinopec through its stake in the Shanghai Chemical Industry Park in the Caojing District of Shanghai, though Hua Yi does not own a cracker itself. (A cracker converts naphtha, natural gas, or liquified propane gas feedstock into the key petrochemical building blocks ethylene, propylene, and butenes.) This industrial park, encompassing some 23 km² on Hangzhou Bay directly south of Shanghai, has been called China's answer to Antwerp, Belgium, or Singapore's Jurong Island.

Beijing Chemical Industry Group is similarly responsible for the chemical industry in Beijing (except for entities falling under Sinopec) but possesses its own cracker, which started up in June 1998 at its complex in eastern Beijing. In addition to a capacity of 150 kt for ethylene and 60 kt for propylene, the company has a capacity of 140 kt for acrylic acid and 30 kt for vinyl acetate and makes a wide range of emulsion polymers. Its principal foreign JVs are an acrylic emulsions JV with US-based Rohm and Haas, a powder coatings JV with the Netherlands' Akzo Nobel, and a sulfates and ethoxylates JV with France's Rhodia SA.

The provincial-level group company can be a useful first stop for a foreign investor seeking information for a proposed JV that is not a project in the petrochemicals sphere. The influence of this group company, and the extent to which it will be involved in the negotiations, will vary among provinces. These entities may be directly involved in negotiations for major projects, but for minor projects they may delegate negotiation authority to the subsidiary that will become the direct equity partner. Once the venture is formed, decisions regarding day-to-day operations are rarely elevated above the level of the venture partner.

The foreign-invested sector

Multinational chemical firms have been among the most prolific investors in China (see Table 2). European companies have been the most active in terms of both number and scope of ventures. With the exception of E. I. du Pont de Nemours & Co., and The Dow Chemical Co., US companies have tended to adopt a more cautious approach, because of concerns about profitability and political risk—in particular, the sometimes tense relationship between the United States and China. Japanese firms have lagged furthest behind, though their interest has picked up significantly recently, with plans announced by a host of leading companies. Among these, Mitsui Chemicals, Inc.'s plan to invest \$240 million in a 500 kt purified terephthalic

acid (a raw material for polyester fibers) plant represents the largest commitment to date.

The Taiwan government, until last year, prevented major Taiwan companies such as Formosa Plastics Corp. and Chi Mei Corp. from undertaking major petrochemical investments on the mainland. Taiwan's Formosa Plastics reportedly has decided to invest \$300 million in building several polyvinyl chloride plants, and it may also invest up to \$5 billion in a petrochemical complex in Ningbo, Zhejiang.

● Focus on crackers

Though they currently have a lower profile in chemical investments than industrial chemical companies like Atofina, BASF, and Bayer, the world's major oil giants ExxonMobil, Shell, and BP are now aggressively committed to helping China build large-scale cracker complexes (see Table 3). These companies have been trying to invest in this area for the last 10 years, but the central government has been reluctant to approve such projects, despite evidence that China's ethylene deficit was mounting and would prove very costly in terms of imports. (Ethylene and its derivatives are used to produce commodity plastics such as polyethylene and polypropylene, which are widely used to make shopping and trash bags, molded household articles, and automobile parts.) China's deficit has steadily increased since the early 1990s and is currently estimated by Western industry sources to reach several million metric tons annually. If China continues to grow at 7-8 percent a year, it will need to approve around one new world-class cracker project every year just to keep up with demand.

Despite such arguments, the government evidently became comfortable approving cracker projects only after the petroleum and petrochemicals sector reorganization of 1998 (see p.38). Significantly, all of the approved cracker projects are 50-50 JVs. At the same time, the flotation of only small minority interests in

If China continues to grow at 7-8 percent a year, it will need to approve around one new world-class cracker project every year just to keep up with demand.

Table 1
Production of Chemical and Related Products in China, 2000

Product	Production	Growth over 1999 (%)
Petroleum (refined)	210 million tons	2.0
Natural gas	28 billion m ³	9.4
Ethylene	4,700 kilotons (kt)	8.1
Propylene	2,640 kt	18.0
Plastics and copolymers	10,795 kt	19.0
Synthetic rubber	836 kt	11.0
Synthetic fiber monomers	2,974 kt	16.0
Synthetic fiber polymers	3,493 kt	22.0
Fertilizers	31,857 kt	-0.6
Agricultural chemicals	648 kt	-2.9

SOURCE: The State Economic and Trade Commission's State Petroleum and Chemical Industry Bureau (abolished in 2001)

CNPC, Sinopec, and CNOOC confirms the central government's intent to maintain control of the key petrochemical segment. The timing of the flotations—pending approval of the major cracker projects—virtually assured the support of the foreign partners. In return, these foreign investors hope for accelerated rationalization of the ethylene and derivatives industry through

500 kt. However, at least in part owing to provincial circumstances, the government seems prepared to continue its policy of upgrading its smaller cracker facilities by bringing them up to a capacity of 200-300 kt, even as new foreign-invested enterprise (FIE) facilities come on stream.

● **Specialty chemicals**

Many of the more profitable chemical industry investments in China thus far have been in specialty products, particularly those where the customer base is also heavily composed of FIEs. Unlike the petrochemical industry, the industrial and specialty chemical industry is not directly administered by the central government. Projects with less than \$30 million in total investment only require approval from provincial authorities, with generally no restrictions on the level of foreign ownership.

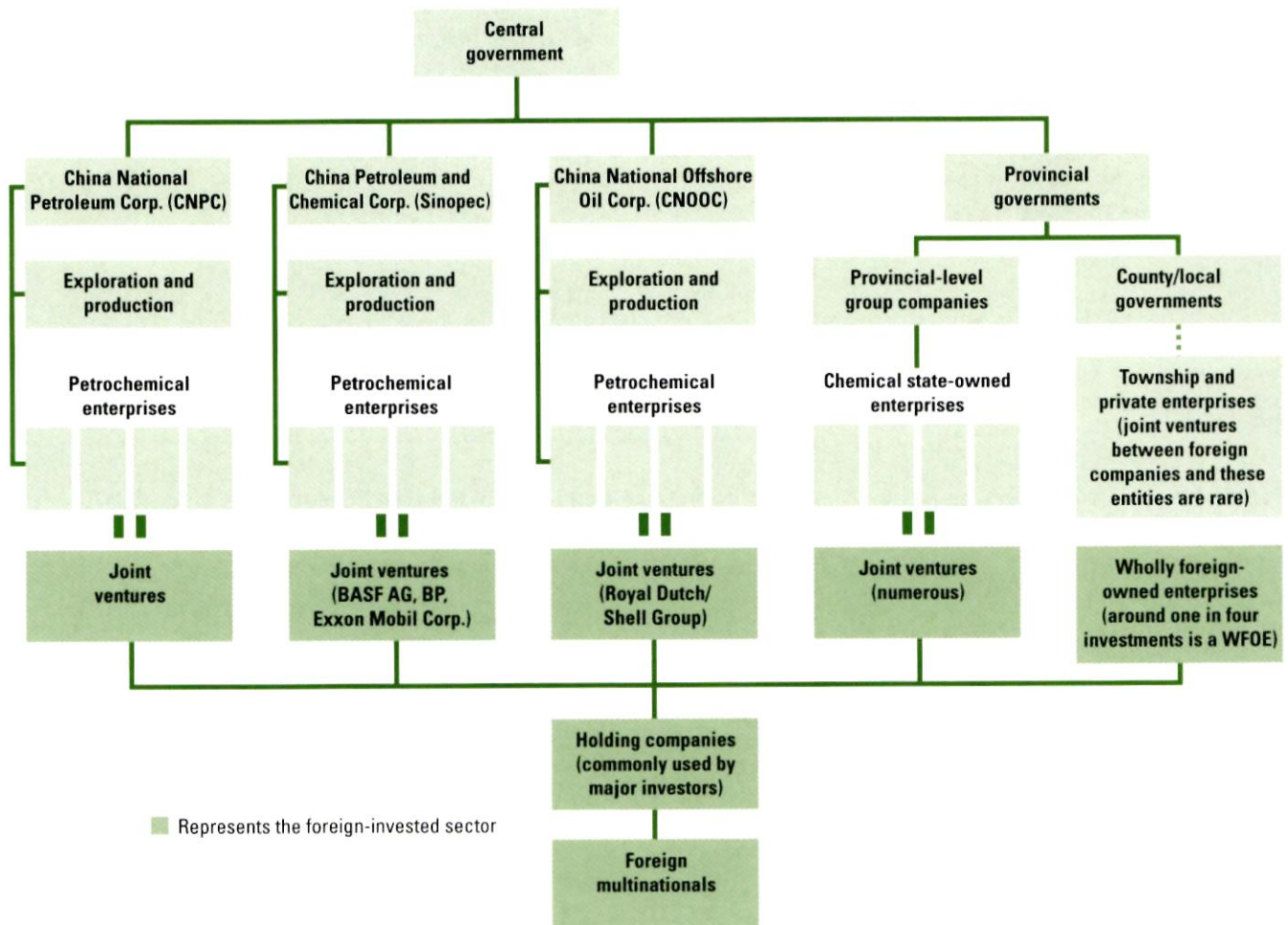
As a result, many specialty projects by experienced investors started up as wholly foreign-owned enterprises (WFOEs). Examples include Dow Corning Corp.'s silicones plant in Shanghai; Atofina's organic peroxides, adhesives, and coatings plants; and some small Japanese investments. Major investors in the specialties field in-

The Chinese public's concern over chemical industry safety has grown, fueled in part by the Chinese media's increasing coverage of the industry.

the closing of smaller facilities and the removal of restrictions on foreign ownership.

A typical world-class cracker today has a minimum capacity of 600 kt of ethylene, and ideally 800 kt or higher. Of the 18 crackers operating in China, the majority have a capacity of less than 200 kt. Only a few can produce 300 kt, and only one—that of Yanshan Petrochemical Co., Ltd. (a Sinopec subsidiary)—is said to be at

Outline of the Chemical Industry in China



SOURCE: Sigmund Floyd

clude Akzo Nobel, Bayer, Ciba Specialty Chemicals, Dupont, and Rhodia. As with the petrochemical projects, European firms were generally the first on the scene, followed by US firms. Japanese interest has accelerated dramatically of late, and a large number of new projects may be expected in the coming years.

Regulatory control

The regulatory environment is of extreme importance to the chemical industry worldwide, in part as a result of the negative public perception of the industry, shaped by events such as the 1984 Bhopal disaster in India—in which an accidental discharge of methyl isocyanate killed 3,000 people. Chinese public concern over chemical industry safety has grown, fueled in part by the Chinese media's increasing coverage of the industry. News items relating to the chemical industry in the Chinese mass media record a steady drumbeat of industrial accidents that resulted in injury, loss of life, or exposure to hazardous chemicals.

The safety record of the domestic chemical industry in China, albeit improving, is undeniably poor. Though not broken down by industry, State Economic and Trade Commission (SETC) data show 5,804 accidents in non-mining industries with 4,233 fatalities for the first 11 months of 2001. (Smaller enterprises tend to have higher accident rates—data for chemical state-owned enterprises [SOEs] above the county level indi-

The Association of International Chemical Manufacturers

The Association of International Chemical Manufacturers (AICM) is an independent association in China that represents multinational chemical manufacturers and engages in dialogue with the various PRC regulatory entities. AICM was formed in Hong Kong in 1988 and opened a representative office in Beijing in 1997. It has over 50 members, including most of the major US and European multinational chemical and petrochemical firms. The association actively monitors Chinese regulations pertaining to the chemical industry and has collaborated with both the State Economic and Trade Commission and the State Environmental Protection Agency in their efforts to assist the Chinese chemical industry upgrade its safety and environmental standards.

AICM provides information for companies seeking to better understand China's complex regulatory environment and general industry issues. A current focus of the association is the spate of new national standards, guidelines, and laws issued in China's effort to improve safety. In recent months, AICM has worked with members on new national requirements relating to occupational safety, safe production, road transportation of hazardous goods, and standards for safety management programs.

AICM can be contacted through its executive director in Hong Kong, Ms. Nancy Tse (nantse@aicmasia.com), or its chief representative in Beijing, Ms. Beryl Ma (yibingma@china.com).

—Sigmund Floyd

cates 146 such incidents with 105 fatalities in 1999, but this figure understates the accident rate for the industry.)

China's current regulatory regime consists of a patchwork of bodies, with SETC in the lead role. The government formed the Production Safety Bureau under SETC to regulate industrial safety, including that of the chemical industry.

Table 2
Foreign Chemical Investments as of 2001

Company	Number of Manufacturing Investments			Employees	Capital Invested, \$ million	Fields
	Total	JV	WFOE			
Atofina	14	7	7	2,000	400	Coatings, adhesives and sealants, bulk chemicals, chlorofluorocarbon substitutes, electroplating chemicals
BASF AG	9	8	1	2,600+	NA	Styrenics, fibers, dyes and pigments, dispersions, coatings, neopentylglycol, vitamins
Bayer AG	9	7	2	1,400+	300	Iron oxide, leather chemicals, flavors, crop protection, animal health, polycarbonate sheet, polyols, rubber chemicals, pharmaceuticals
BP	1	1	0	NA	NA	Acetic acid
Ciba Specialty Chemicals Holding Inc.	7	7	0	750	166	Antioxidants, textile chemicals, optical brighteners, pigments, dyes
The Dow Chemical Co.	8	5	3	700	NA	Polyols, latex polymers, agricultural chemicals, sealants, polystyrene
DSM NV	7	6	1	1,300	100	Engineering plastics, unsaturated polyesters, powder coating resins, antibiotics
E.I. du Pont de Nemours & Co.	16	11	5	NA	500+	Agricultural chemicals, electronic materials, engineering plastics, fibers, films
ExxonMobil Chemical Co.	2	1	1	250	NA	Hydrocarbon resins, plasticizers
Messer AG	12	8	4	1,370	100	Industrial gases
Rhodia SA	15	11	4	3,400	325	Rare earths, fibers, engineering plastics, silicones, surfactants

NOTES: NA: not available; JV: joint venture; WFOE: wholly foreign-owned enterprise

SOURCES: Information was obtained by the author either by explicit permission of the companies, from public sources such as corporate websites, or from articles in the Chinese press.

Eight Emergency Response Centers, which deal with chemical emergencies, report to this bureau. The State Environmental Protection Administration, through its local bureaus, approves environmental impact portions of feasibility studies and enforces environmental regulations.

hold foreign companies, which are perceived to have deep pockets, more rigorously to the rules.

Global competitiveness

The chemical industry in China faces a series of transitions now that the country is a WTO member, including the removal of de facto trade barriers and the reduction of tariffs on chemical imports. Among the barriers China will remove are restrictions on import, resale, and distribution by existing foreign ventures. Though the same provisions will apply to domestic companies, overall these changes seem likely to benefit foreign companies, which have ready access to product and raw materials from overseas sourcing points and considerable expertise in logistics. At the same time, according to foreign investors, the Chinese government's new tariff structure penalizes cracker operators in favor of domestic refiners who supply raw materials. Tariffs on naphtha, the raw feedstock for crackers, will remain at the current level of 6 percent while tariffs on polyethylene and polypropylene, which are downstream products, were reduced to 14.2 and 10 percent, respectively, as of January 2002.

The Chinese petrochemical industry seems unlikely to become an export leader in the near

Foreign firms' competitive edge may be mitigated to some extent by the government's clear willingness to seek antidumping remedies aggressively, as was seen in the case of its successful challenge to US and Japanese exporters of acrylates last year.

In general, China seeks to follow best international practices for environmental standards. However, foreign investors are still concerned that officials do not apply environmental standards uniformly to FIEs and domestic companies. Though local environmental bureaus have exerted significant pressure on domestic companies to improve their practices, they appear to

Table 3
Major Planned or New Foreign Chemical Investments, 2002 Onward

Foreign Company	Project	Chinese Partner	Foreign Share (%)	Location
BASF AG	Cracker	Yangzi Petrochemical Co. (Sinopec)	50	Nanjing, Jiangsu
BASF/Huntsman Corp.	MDI, TDI	Gaoqiao Petrochemical Co. (Sinopec), China Petroleum and Chemical Co., Shanghai Hua Yi (Group) Co.	"Majority"	Shanghai Chemical Industry Park
Bayer AG	Polycarbonate	Shanghai Chloralkali (Hua Yi)	90	Shanghai Chemical Industry Park
	Polyisocyanate	none	100	Shanghai Chemical Industry Park
	Polyurethane	none	100	Shanghai Chemical Industry Park
BP	Cracker	Shanghai Petrochemical Co. (Sinopec)	50	Shanghai Chemical Industry Park
	PTA	Fu Hua Group, China National Chemical Fiber Co.	85	Zhuhai, Guangdong
	Yarraco Expansion	Sichuan Vinyl Works Co. (Sinopec)	51	Chongqing
Exxon Mobil Corp./ Saudi Arabian Oil Co.	Cracker	Fujian Petrochemical Co. (Sinopec)	50	Fuzhou, Fujian
Royal Dutch/Shell Group	Cracker	China National Offshore Oil Co.	50	Daya Bay, Guangdong
The Dow Chemical Co./ Asahi Kasei Corp.	Polystyrene	none	100	Zhangjiagang, Jiangsu
Dow	Cracker	NA	50	Tianjin
Mitsui Chemicals, Inc.	PTA	NA	NA	Under study

NOTES: kt: kilotons, NA: not available, MDI: 4,4'-methylenediphenyl diisocyanate, TDI: toluene diisocyanate, HDI: hexamethylene diisocyanate, PET: polyethylene terephthalate, PTA: purified terephthalic acid, bpd: barrels per day

SOURCE: Information was obtained by the author either by explicit permission of the companies, from public sources such as corporate websites, or from articles in the Chinese press.

future because of China's energy deficit and the relatively small scale of the country's refining operations. China's government will nevertheless continue to provide strong support for the petrochemical industry, which it deems a core industry. The government's approach to the petrochemical sector is one of gradualism—using foreign investment to bring the petrochemical industry up to global standards while continuing to protect the domestic oil sector. The reasons for this probably include a sense of national pride among the senior leadership, who were strongly influenced by the success of the Daqing oil field—the first domestic heavy industry project—four decades ago. It will also take the government time to achieve economies of scale and improve China's transportation infrastructure.

FIEs, which have easy access to international markets, should benefit from their ability to import competitively priced raw materials. Global competitiveness in chemicals often depends more on such access to inexpensive raw materials than on labor costs. Nevertheless, local production generally has significant logistical advantages over imports in a large country such as China. And foreign firms' competitive edge may be mitigated to some extent by the government's

clear willingness to seek antidumping remedies aggressively, as was seen in the case of its successful challenge to US and Japanese exporters of acrylates last year.

Survey of foreign firms: China market looking up

VALUSHAR conducted a series of surveys in 2000-01 of 18 major foreign chemical firms with investments in China. Most respondents said that China's investment environment continued to improve in 2001 and that they are planning new investments. Companies cited the reduction in bureaucratic hurdles as the most significant improvement, followed by improvements in the legal environment for dispute resolution and the equal treatment of foreign and Chinese firms. Companies found less improvement in intellectual property protection and transparency of environmental regulations. They saw two areas as having deteriorated: product liability, owing to the rising number of claims against foreign companies—sometimes fanned by nationalistic mass media—and corruption. Most of the companies gave the government credit for its efforts to improve the investment environment, and there is little evidence that either of these issues have had

**Where the
United States
might have four
to ten competitors
for a typical
chemical
commodity,
China often has
30 or more.**

Product(s) and Capacity	Total Investment, \$ million	Status	Startup
Ethylene 600 kt, aromatics 300 kt, polyethylene 400 kt, polystyrene, ethylene glycol 300 kt, oxo alcohols 250 kt, acrylic acid 160 kt, acrylates 215 kt, propionic acid 30 kt, formic acid 50 kt, dimethylformamide 30 kt, acid 50 kt, dimethylformamide 30 kt, methylamines 30 kt	2,900	Construction	2004-05
MDI 160 kt, TDI 130 kt	1,000	Awaiting approval	2005
Polycarbonate 100 kt	450	Approved	2003
Polyisocyanates 11.5 kt (Phase I), 8.5kt (Phase 2); HDI 30 kt	110	Approved	2003-07
MDI 230 kt, TDI 150 kt, PET 280 kt	1,100	Awaiting approval	2005-07
Ethylene 900 kt, styrene monomer 500 kt, polystyrene 300 kt, polyethylene 600 kt, polypropylene 250 kt, acrylonitrile 260 kt	2,700	Approved	2005
PTA 350 kt	360	Construction	2003
Acetic acid 175 kt (expansion)	128	Awaiting approval	2004
Ethylene 600 kt, polyethylene 450 kt, polypropylene 300 kt, refinery expansion of 8,000 kt (160,000 bpd)	3,000	Final feasibility study submitted	2006
Ethylene 800 kt, styrene monomer 560 kt, propylene oxide 250 kt, ethylene glycol 320 kt, polyethylene 450 kt, polypropylene 240 kt	4,000	Approved	2005
Polystyrene 120 kt	NA	Construction	2002
Ethylene 600 kt, 15 downstream projects	NA	Project proposal submitted	Uncertain
PTA 500 kt	240	Under study	Uncertain

a major impact on investments in China as a whole.

Surveyed companies seem reluctant, however, to follow the central government's recent calls to "go west." About half of the companies said they had no intention of considering investments in the less-developed regions of China where problems such as poor infrastructure, non-business oriented local governments, and difficult partners have been reported. The regions enjoying the highest investor satisfaction were Shanghai and its surrounding areas (principally Jiangsu) followed by southern China (principally Guangdong). Recently, Jiangsu appears to have been very successful in attracting new investment, with Nantong, Changshu, and Zhangjiagang

cities inking projects in agricultural chemicals and fibers, fluorochemicals, and plastics.

Hypercompetition

Chemical firms surveyed by VALUSHAR were relatively neutral on the impact of WTO on their operations. Their investment decisions over the last several years have assumed that WTO entry would become a reality.

Foreign investors see China's hypercompetitive industry dynamics—the result of the country's policies from 40 years ago—as the major challenge of operating in China. Where the United States might have four to ten competitors for a typical chemical commodity, China often has 30 or more. For example, the global ion exchange resin industry excluding China has five major players. (Ion exchange resins are used for water treatment in the power, chemical, and food industries.) The Chinese industry association has, in addition to FIEs of two of these global players, roughly 100 such companies listed on its directory. Many of these are already defunct, but at least 20-25 percent remain in operation, serving minor needs within their locales. Of these, seven or eight significant regional players compete head-to-head with the foreign ventures in the domestic market. Needless to say, the impact of this level of competition on pricing is significant; prices in China's ion exchange resin market are roughly one-third below international levels and in some cases less.

The situation just described is not unusual, nor is it uncommon for an FIE in China to face direct competition within its own immediate region. Sometimes the Chinese parent of a JV continues to operate its older facilities, posing a latent threat. In the case of one of the foreign investors in ion exchange resins, after it bought out its Chinese JV partner, the erstwhile partner restarted an older facility in the same city. The foreign investor responded by exporting most of its Chinese production, reducing its reliance on the domestic market.

Foreign investors generally discount the capabilities of Chinese competitors when drafting the feasibility study. But many Chinese SOEs are capable of producing perfectly serviceable products despite their financial difficulties. Small township enterprises are more flexible, having access to seasonal labor and various incentives. Even these small players often conduct their own research and development and are adept at copying foreign products, legally or otherwise. Thus, the domestic industry often poses a far greater challenge than an unwary investor might think.

Of course, WTO entry is likely to speed up the restructuring and rationalization of the domestic industry that has been taking place for the past few years. The main issues for SOEs are their extremely large workforces and the attendant social costs. These enterprises have found it difficult to obtain discretionary cash flow for

Origins of the Domestic Chemical Sector

The chemical industry in China began to develop as a modern industry after 1949, but the sector evolved in a very different manner from its Western counterparts. Under Mao Zedong's policy of localized production, the government encouraged cities and even rural areas to set up their own production facilities for steel and other critical commodities, ignoring the dictate by then well accepted in Western countries of maximizing economies of scale. As a result, commodities including chemicals were produced on a small scale in hundreds of locales in China. The production units had no meaningful sales and marketing function and focused almost entirely on meeting the needs of their immediate surrounding regions.

Between the 1950s and the late 1990s, the domestic industry alternated several times between amalgamation under central control and redivision with a certain degree of local autonomy. China established provincial-level administrative bodies for the chemical industry in the late 1950s (with Shanghai as the first). The Daqing oil field, developed in 1960, was the first domestic development of a major heavy industry, and became a symbol of national pride.

After a period during which their administration was combined, in 1978 petroleum and chemicals were separated under two ministries, the Ministry of the Chemical Industry (MCI) and its counterpart, the Ministry of the Petroleum Industry (MPI). At the same time, the pharmaceutical industry was removed from the purview of MCI. In 1982 the China National Offshore Oil Corp. (CNOOC) and the China Petroleum and Chemical Corp. (Sinopec) were estab-

lished, both reporting directly to the State Council. In 1988, MPI itself was reorganized to form the China National Petroleum Corp. (CNPC).

Separation of the chemical and petroleum industries persisted until the watershed year of 1998, which introduced sweeping reforms intended to place the Chinese industry on a more equal footing with its international counterparts. It is of course no coincidence that this major reorganization took place just as China was gearing up to enter the WTO. The 1998 reorganization in one sweep eliminated MCI and consolidated its regulatory powers in the State Petroleum and Chemical Industry Bureau under the State Economic and Trade Commission. The bureau was replaced by the China Petroleum and Chemicals Industry Association in 2001.

Soon after the 1998 reorganization, a major asset swap took place between Sinopec and CNPC, with Sinopec gaining certain refinery assets south of the Great Wall and CNPC acquiring several cracker complexes north of the wall. (A cracker converts naphtha, natural gas, or liquified propane gas feedstock into ethylene, propylene, and butenes.) This far-reaching reorganization took place relatively smoothly during 1999 (see *The CBR*, March-April 2000, p.36). Sinopec, CNPC, and CNOOC subsequently floated shares on international markets, and major parts of the flotation were purchased by Exxon Mobil Corp. (Sinopec), BP (Sinopec, CNOOC, and CNPC), and Royal Dutch/Shell Group (CNOOC). Based on total capitalization and sales, Sinopec and CNPC are now major integrated oil companies in their own right.

—Sigmund Floyd

new investments from their own operations, having to rely instead on funds provided by policy fiat. The central government is urging local governments to take on more of the SOEs' traditional social responsibilities, such as housing and education, thus permitting SOEs to focus on restructuring (see Table 4). But provincial governments are also cash-strapped, so this process is fraught with potential conflicts as laid-off workers become increasingly vocal. Protests in a number of cities, particularly in the northern rust belt, have sensitized the central government to this issue. Consequently, the chemical industry will likely continue to face hypercompetition for the next several years.

Industry consolidation

Surveyed foreign chemical investors confirmed that they are heavily focused on improving the profitability of existing operations. Many of these operations are still underperforming and investors are particularly sensitive with regard to their JVs. Detailed data shared by several major investors on production ventures started up since 1997 indicate that 44 percent of their JVs are losing money, compared with only 33 percent of their WFOEs. At the same time, only 25 percent of total ventures are achieving a profitability of greater than 10 percent of their overall sales. Coupled with the low asset turnover ratio (sales/assets) typically seen in the early years of Chinese ventures, this implies an unsatisfactory return on capital for most of the chemical ventures now in operation. As a result, companies are seeking to expand sales in their existing ventures and to restructure to save costs.

An overwhelming majority (82 percent) of chemical investors surveyed indicated that "WFOEs are more likely to succeed than JVs." Possibly, these perceptions are too negative. Many JVs suffer from the fact that an adversarial structure is often built into their contracts. Often, both JVs and WFOEs are initiated with feasibility studies that ignore the economic realities of the target industry (see *The CBR*, January-February 2001, p.36). Though it is true that some Chinese partners have been known to behave in a less-than-ethical manner, foreign companies also need to examine their own processes

of partner selection and sharing of benefits. Sino-foreign ventures are not unique—failure rates of 30-80 percent are reported for JVs all over the world. Nevertheless, regardless of where the fault lies, the JV can be a convenient scapegoat when things go wrong. And the reality is that companies are accelerating their buyouts of Chinese JV partners. Several foreign investors, including Dupont, Akzo Nobel, and Atofina, have bought out at least one Chinese JV partner within the last two years.

To its credit, the Chinese government has made it far easier to undertake such restructuring. The holding company vehicle introduced by the central government in the mid-1990s has enabled major investors to consolidate all of their China ventures under one umbrella and share staff services. All but one of the chemical investors with 10 or more ventures surveyed have adopted the holding company structure, and the survey indicated a high degree of satisfaction with it despite the considerable expense and effort required to start one. Structurally, holding companies are entitled to sell products on behalf of their subsidiary ventures in an agency relationship, with the subsidiary company issuing the actual invoice—though, like JVs and WFOEs, they do not have trading rights until WTO terms take effect.

Further evidence of the industry's consolidation is visible in major investors' grouping more of their ventures in dedicated sites to optimize infrastructure investments, logistics, and service expenses. Though this has always been the rule for the highly integrated petrochemical segment, companies are also increasingly applying it in the specialty chemical segment. Atofina, for example, has combined otherwise unrelated operations (both JV and WFOE) at its "platforms" in Changshu in Jiangsu and Guangzhou in Guangdong, and plans a similar expansion in Beijing.

In many industries the Chinese government had begun allowing acquisition of state-owned assets even before WTO entry, and it now appears to be actively encouraging such acquisitions. Progressive elements of the government believe foreign ownership of domestic Chinese assets will boost the pace of modernization and

Foreign investors generally discount the capabilities of Chinese competitors when drafting the feasibility study. But many Chinese SOEs are capable of producing perfectly serviceable products despite their financial difficulties.

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Table 4
Two New Giants: Sinopec and PetroChina

	China Petroleum and Chemical Corp. (Sinopec)	PetroChina Co. Ltd.
Listed foreign exchanges	New York, London, Hong Kong	New York, Hong Kong
2000 revenues (billion RMB)	328.9	242.0
2000 net profit (billion RMB)	19.0	55.2
2000 petroleum production (million barrels)	247.4	765.2
2000 natural gas production (billion ft ³)	80.0	647.0

SOURCES: www.sinopec.com, www.petrochina.com.cn

How Fast is China's Economy Really Growing?

Thomas G. Rawski

A look at official government statistics raises questions about the reliability of China's growth figures

A salesman for Luoyang Northern EK Chor Motorcycle Co. explained in a November 2001 Dow Jones Newswires report that "We're pushing hard to boost exports" because of poor domestic sales: "It's like a plague hit the domestic market." With Chinese researchers such as Wang Xiaoya in the journal *Finance and Trade Economics (Caimao Jingji)* reporting that, "In recent years, rural incomes have gone down year by year" and finding big declines in the marginal propensity to consume (the ratio of extra consumption to extra income), it is not surprising to find a recent article in the *China Daily* echoing the same theme: "Since 1998, rural areas have seen their consumption levels continuously shrink."

What is surprising is that official statistical sources report large annual *increases* in retail sales of consumer goods, of 5.2 percent in 1998 at the county level and 7 percent at the sub-county level. These figures continued to rise through 1999 and 2000, reaching 9 percent and 7.3 percent, respectively, for the first 10 months of 2001.

This disconnect between official statistics and actual performance is not limited to rural consumption. Increasing numbers of researchers and businesspeople now believe that, beginning in 1998, official statistics have succumbed to what Chinese writers call a "wind of falsification and embellishment" (*jiabao fukuafeng*), which has produced a systematic pattern of overstating economic outcomes. What happened? What evidence supports the idea that recent statistics overstate performance? If official figures exaggerate outcomes, how fast is China's economy really growing?

What happened in 1998

Since reforms began in the late 1970s, China's economy has experienced an astonishing growth spurt that has transformed the nation's economy, rocketed several hundred million villagers out of extreme poverty, and delivered huge increases in every conceivable measure of material welfare. But China is now discovering what Japan and South Korea have already learned: high-speed growth cannot continue indefinitely.

China's current difficulties can be traced back to 1993-94, when the government applied stringent macroeconomic controls to curtail inflation. The policy appeared to work. As inflation faded without halting the economy's forward momentum, China's leaders congratulated themselves on achieving a "soft landing."

These plaudits turned out to be premature. China's economy, long known for extensive shortages and widespread "seller's market" conditions, suddenly began to show signs of excess capacity. The 1995 industrial census revealed idle facilities across the country. The rate of job formation dropped sharply in 1996, just as state-owned enterprises, long in decline, accelerated the transfer of redundant workers into "furlough" (*xiagang*)—a sort of semi-unemployment. As the government prepared, for the first time, to confront massive urban unemployment, the Asian crisis dealt a huge and unexpected blow to exports and foreign investment, two of the most dynamic sectors of China's economy.

In response, Beijing initiated a program of large-scale deficit spending to stimulate the economy, which continues today. To emphasize the government's determination to maintain economic momentum, Premier Zhu Rongji announced a target of 8 percent growth for 1998. This figure was not just an economic target, but also a "great political goal," meaning that officials in charge of provinces, localities, and various sectors of the economy would be held personally accountable for failure to meet the 8 percent objective.

In Guangzhou, for example,

*Completing economic growth targets was made a political requirement. Even though the municipal [Chinese Communist] Party committee and the city government made special efforts to help the local National Bureau of Statistics protect the quality of economic statistics... the bureau came under great pressure.... The issue facing Bureau Director Hua: if the target cannot be met, can you resist pressure to manufacture data? His answer ... 'I'll never manufacture data!' (Wu Xiaobing and Huang Chaohui: "Sowing and Reaping: A Visit to the Guangzhou National Bureau of Statistics," *China Statistics [Zhongguo Tongji]* No. 8, pp.12-13, 1999.)*

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The general picture, however, is less encouraging. In an obvious reference to the 8 percent growth target, an article by Gan Xinmin and Li Tongyin in the November 1998 issue of *China Statistics*, the official National Bureau of Statistics (NBS) journal, complained that

Some of the targets that come down from the higher levels are objectively impossible to reach, but since the leaders demand high speed, then the operating departments split up the responsibilities, and, in order to ensure the achievement of the result specified by the upper levels, the lower levels apply more pressure.... Plan indicators that are based on the requirements sent down by the upper levels in reality are forced on the lower-level statistical figures and then returned upwards.

A remarkable interview that appeared in the March 1999 *Science and Technology Daily* (*Keji Ribao*) highlighted the unusual character of the 1998 episode:

Zhang Sai...a former head of the [NBS] is very concerned about administrative interference with statistical work.... The challenge of keeping statistics accurate was particularly difficult last year.... If administrative departments involve themselves too much in statistical work, it will be hard to avoid introducing errors into the data...exaggerating the size of the task as the order works its way down level by level and...exaggerat[ing]...economic performance level by level as economic data works its way towards the center.... Zhang Sai stressed that an end must be put to the phenomenon of 'officials make statistics and statistics make officials' and using exaggeration to win an official position.

Recent statistics overstate performance

Lower-level manipulation of economic statistics did not begin in 1998. NBS, which has played the lead role in aligning China's statistical system with international norms, has battled the falsification of economic data for many years. In 1999, NBS publicly rejected provincial figures for GDP growth in 1998. Although provincial figures implied national growth amounting to nearly 10 percent, NBS, as reported in the February 15, 1999 issue of the *China Daily Business Weekly*, attributed this outcome to "cooked local figures," expressed its determination to "reduce...dependence on the calculations of local governments," and announced that it had "squeezed out the over-reported part" to arrive at an "accurate" total of 7.8 percent growth for 1997-98.

This history of vigorous NBS efforts to combat data manipulation makes it imperative to provide specific and detailed evidence to support any claim of exaggeration in the statistics bureau's revised figures.

Evidence of inconsistency fairly leaps from the pages of recent editions of the *China Statisti-*

cal Yearbook. The standard figures shown in Table 1 imply that real GDP grew by 33.8 percent between 1998 and 2001. During the same three years, energy consumption, an indirect indicator of industrial production, dropped by 5.7 percent. The reduction of energy consumption over three years seems implausible, despite the rapid growth of computer manufacturing and other activities with low unit energy consumption. Rapid growth of energy efficiency is not a hallmark of China's economy: from 1997 to 1998,

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for example, the efficiency of energy conversion in producing thermal electricity, coke, and refined oil products all declined, and the "total efficiency of energy conversion" was no better than the average for 1984.

Energy is not the only problem area. Unlikely implications pop up throughout the figures for 1998. Could farm output have increased in all but one province despite floods that rank among China's top 10 natural disasters of the twentieth century? Could industrial production rise 10.75 percent even though only 14 of 94 major products achieved double-digit growth and 53 suffered declining physical output? Could investment spending jump 13.9 percent even though steel consumption and cement output rose by less than 5 percent? Skeptical Chinese analysts point to many such puzzles.

Figures for subsequent years seem equally dubious. Recent figures for consumption spending, which show rapid expansion of retail sales at all levels, seem particularly implausible. China's national figures for retail sales have grown more rapidly than per capita expenditure figures

Table 1
Chinese GDP and Related Indicators, Official Figures, 1998-2001
(percentage growth)

	1998	1999	2000	2001	Cumulative Growth 1998-2001
Real GDP	7.8	7.1	8.0	7.3	33.8
Energy Use	-6.4	-7.8	1.1	8.1	-5.7
Urban Formal Employment	2.3	1.6	-4.3	-2.6	-3.1
Consumer Price Index	-0.8	-1.4	0.4	-0.3	-2.1

SOURCES: *China Statistical Yearbook 2000*, *China Statistical Abstract 2001*, *China Daily*, *China Monthly Economic Indicators*

NOTE: For 2000/01, employment data refer to the first nine months; the energy data refer to production rather than consumption and cover the first 11 months of 2001.

shown in household budgets. In addition, the figures for retail sales rise more rapidly than those for household income, especially in rural areas. This trend implies an increase in the average propensity to consume—the share of household income spent on consumption. But Chinese academic studies find a declining trend in the average propensity to consume among both urban and rural households; newspaper reports indicating that “moderate income growth has intensified people’s tendency to save money” point to a continuing decline in the ratio of consumption spending to income—the exact opposite of what the retail sales data imply. Chinese observers expect more of the same: rural consumption will remain weak because “the actual income of most farmers is not expected to improve significantly.” In the cities, “worries of being laid off...lead consumers to prefer saving over spending,” and concerns over the rising cost of education, health care, and retirement creates a “desire to further reduce spending [and] leads to lower levels of...consumption.”

Difficulties persist when we turn from statistics to qualitative accounts. Official commentators provide inconsistent explanations of recent growth. When foreign trade and investment expand rapidly, China’s dynamism is attributed to export-led growth. When they do not, as in 2001, the international sector is suddenly of little consequence, as China’s growth is said to be powered by vast domestic demand. Thus international shock waves that cause Hong Kong’s economy to shudder create only a minor blip for

neighboring Guangdong—if we believe the statistics. This shifting story undercuts the plausibility of the official high-growth scenario, as does the frequency with which Chinese commentators apply terms like decline, slowdown, and excess supply to an economy that, if we believe the statistics, continues to race along the path of high-speed growth begun in the late 1970s.

Skepticism about official accounts, although sometimes veiled, is not hard to find in Chinese sources. Premier Zhu Rongji himself complained in March 2000 that “falsification and exaggeration are rampant.” A July 2000 article in the influential journal *Economic Research (Jingji Yanjiu)* noted that “mistaken analyses of the economic situation during the past few years are related to unrealistic statistics.” Articles in *China Statistics* make it clear that falsification is not limited to lower-level agencies:

Statistical illegalities occur when agencies of the national government [guojia jiguan]...social organizations, enterprises and administrative agencies...violate provisions of the law...[emphasis added].

Leaders at various levels want data from the lower-level reporting units and from their own jurisdictions to be accurate and reliable. But when it comes to reporting upward and to the outside, for reasons of history, political evaluation, and self-interest, they adopt a different type of behavior [emphasis added; note that the term “outside” [duiwai] can be read as a specific reference to foreign as well as external audiences].

It is not unusual for Chinese newspapers and economics journals to specifically contradict official figures. An April 1999 *China Daily* account, for example, stated that “Per capita income in urban and rural areas continued to fall in the first quarter of this year.” And a December 1999 *China Daily* article noted that, “In October [1999], 66 percent of [apparently urban] consumers said their household incomes had either remained unchanged or had decreased during the previous 12 months.”

When Chinese economists discuss policy issues, they often appear to be guided by private maps, formed from their own information and first-hand experience, that offer a considerably different picture from the one presented by official statistics. Ni Hongri, a research fellow with the Development Research Center under the State Council, warns that termination of deficit spending or continuation of the recent decline in growth rates could trigger a recession. Since numerous Chinese accounts indicate that fiscal stimulus has added 1.5-2 percentage points to annual GDP growth, Ni’s comments suggest a growth rate closer to 2 percent than the 7-8 percent claimed in official sources. A July 2001 *China Daily* account cites Wu Jinglian’s view that

Table 2
Chinese GDP Growth, Official and Alternate Figures, 1998-2001
(percentage change)

Real GDP	1998	1999	2000	2001	Cumulative Growth 1998-2001
Official	7.8	7.1	8.0	7.3	33.8
Alternate	-2.0 to +2.0	-2.5 to +2.0	2.0 to 3.0	3.0 to 4.0	0.4 to 11.4*

SOURCE: Alternate figures are author’s estimates—see text.

*Endpoints of cumulative growth range based on low and high annual growth figures.

Table 3
Episodes of Growth in Asian Economies, 1957-2001
(cumulative percentage change)

Cumulative Change in	Japan 1957-61	Taiwan 1967-71	South Korea 1977-81	China 1987-91	China 1998-2001
Real GDP: Official	52.8	49.7	21.6	31.8	33.8
Real GDP: Alternate					0.4 -11.4
Energy Consumption	40.1	85.2	33.6	19.8	-5.7
Employment	4.6	17.0	9.4	23.2	-3.1
Consumer Prices	10.6	20.6	111.7	46.6	-2.1

SOURCES: *Patterns of Japanese Economic Development* (www.stat.gov.jp/english/1431.htm), *Statistical Yearbook of the Republic of China for 1982* (www.stat.gov.tw), www.nso.go.kr/eng, *China Statistical Yearbook 2000*, *China Statistical Abstract 2001*, *China Daily*, *China Monthly Economic Indicators*

“China has reversed its downward momentum in economic growth, which started in 1997.” An August 2001 summary in the *China Daily Business Weekly* of views on fiscal policy notes that deficit spending “was introduced in 1998 to overcome insufficient domestic demand and dwindling exports,” and then observes that because “the economy has been revived, some economists say that the positive policy should be weakened.” But official projections show that the “revived” economy is growing more slowly than in 1997.

Alternate measures

If official measures appear to exaggerate actual performance in recent years, what’s the alternative? An NBS researcher, commenting on a conference paper prepared by this author, said “If you think we can’t measure China’s GDP, what makes you think you can do better?” Indeed, China’s economy is both huge and heterogeneous, ensuring that efforts to create a substitute for official measures cannot hope to achieve more than a crude approximation of actual outcomes. For those who share the author’s discomfort with recent statistical claims, China’s civil aviation industry offers a starting point for reassessing recent GDP growth.

Airline travel appeals to a high-income clientele. Since steeply rising inequality is widely recognized as a prominent feature of China’s economy, income growth among the airlines’ prosperous clientele surely exceeded the norm, probably by a large margin. A fierce price war slashed ticket prices during 1998. Airlines routinely offered discounts of 30-40 percent to travelers on domestic routes. With customers’ incomes rising and ticket prices plunging, passenger traffic should have grown well ahead of disposable income and aggregate consumption, the largest components of aggregate income and expenditure. Yet the data for 1998 show that passenger miles rose by only 2.2 percent on domestic routes and 3.4 percent overall compared to 1997.

In the absence of major shifts in the structure of GDP, the elementary economics of demand and consumption points to 2.2 percent as a generous upper bound for overall real growth during 1998. Declining energy use, output reductions in many branches of industry, mass layoffs, widespread excess capacity, inventory accumulations, and the impact of major floods make this a far more plausible measure of GDP growth that year than the official figure of 7.8 percent. And 2.2 percent is an upper bound. The actual result could have been far lower, perhaps less than zero.

From a qualitative perspective, official accounts of Chinese growth since 1998 are entirely plausible. They show that GDP growth declined

slightly from 1998 to 1999 and improved somewhat thereafter. The continuation of excess supply, downward price pressure, near-zero employment creation, widespread excess capacity, inventory build-up, and large-scale accumulation of idle bank deposits indicate that real growth remains well below the 7 percent level that Chinese economists say is needed to absorb new urban labor force entrants (see Ge Yanfeng, *Prevent and Resolve Social Risk—China’s Employment Policy Choices for 1999*. [Fangfan He Huajie Shehui Fengxian—1999 Zhongguo Jiuye Zhengce Xuanzi], Beijing: Development Research Center).

These considerations underlie the proposed alternate figures for GDP growth shown in Table 2. The alternate figures represent little more than the author’s guesses about China’s recent GDP performance. They are not firmly grounded in a systematic analysis of empirical data. But unlike the official figures, the alternate series does seem consistent with Chinese policy discussions and with official data on changes in employment, prices, and energy consumption.

Official performance measures for recent years imply that China’s economy has entered an unprecedented interlude that combines high-speed growth with declining energy use, falling prices, minimal employment growth, widespread excess supply, rampant overcapacity, low consumer confidence, and large-scale pump-priming.

International comparisons highlight the implausibility of recent Chinese growth claims. Table 3 presents capsule summaries of several Asian economies during comparably short time periods going back to the 1950s. China’s recent official growth story is an obvious misfit: in every other instance, including China’s own experience 10 years earlier, substantial GDP growth coincided with increased energy use, higher employment, and rising consumer prices.

Even though recent growth claims defy economic logic and clash with a broad array of credible information from Chinese sources, economic researchers, international organizations, and financial analysts both within and outside China have continued the longstanding practice of routinely adopting official figures. This “business as usual” approach is a recipe for bad policy, flawed research, and costly investment errors.

The alternative is to hypothesize that NBS has run afoul of the same political pressures that have caused local authorities to become “obsessed with...GDP growth rates—the leading criteria for evaluating cadre performance,” according to the *Far Eastern Economic Review’s* Bruce Gilley. If this is so, official data showing 7-8 percent real GDP growth for recent years reflect official objectives rather than economic outcomes, and analysts must continue the search for alternate figures that can provide a realistic appraisal of China’s recent economic performance. 完

China’s economy is both huge and heterogeneous, ensuring that efforts to create a substitute for official measures cannot hope to achieve more than a crude approximation of actual outcomes.

China Business

Sales and Investment

NOVEMBER 16 – JANUARY 15, 2002

Compiled by Dong Ke
and Richard Burns

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

Firms whose sales and other business arrangements with China do not normally appear in press reports may have them published in *The CBR* by sending the information to the attention of the editor.

Accounting and Insurance

INVESTMENTS IN CHINA

Generali S.p.A. (Italy)/China Petroleum Finance Co., a unit of CNPC

Will establish joint venture, Generali China Life Insurance Co., in Guangzhou, to offer insurance services in China. \$25 million. 01/02.

New York Life Insurance Co. (US)/Haier Group Corp. (Shandong)

Will establish joint venture, Haier New York Life Co., Ltd., to sell insurance in China. (US:50%-PRC:50%). \$24.2 million. 12/01.

Advertising and Public Relations

INVESTMENTS IN CHINA

Tom.com Ltd. (Hong Kong)

Will acquire 100% of China Travel Network Co. \$3 million. 12/01.

Banking and Finance

INVESTMENTS IN CHINA

ABN AMRO Bank (the Netherlands)/Changsheng Fund Management Co. (Beijing)

Will establish joint venture fund management company. 12/01.

HSBC Holdings plc (UK)

Acquired 8% of the Bank of Shanghai. \$62.6 million. 12/01.

Shanghai Commercial Bank (Hong Kong)/Bank of Shanghai

Shanghai Commercial Bank acquired 3% of the Bank of Shanghai. \$23.46 million. 12/01.

Abbreviations used throughout text: ABC: Agricultural Bank of China; ADB: Asian Development Bank; BOC: Bank of China; CAAC: General Administration of Civil Aviation of China; CATV: cable television; CCB: China Construction Bank; CCTV: China Central Television; CDB: China Development Bank; CDMA: code division multiple access; CEIEC: China National Electronics Import and Export Corp.; China Mobile: China Mobile Communications Corp.; China Netcom: China Netcom Corp. Ltd.; China Railcom: China Railway Communications Co., Ltd.; China Telecom: China Telecommunications Group Corp.; China Unicom: China United Telecommunications Corp.; CIRC: China Insurance Regulatory Commission; CITIC: China International Trust and Investment Corp.; CITS: China International Travel Service; CNOOC: China National Offshore Oil Corp.; CNPC: China National Petroleum & Gas Corp.; COSCO: China Ocean Shipping Co.; ETDZ: economic and technological development zone; ICBC: Industrial and Commercial Bank of China; MII: Ministry of Information Industry; MOFTEC: Ministry of Foreign Trade and Economic Cooperation; MOU: memorandum of understanding; NA: Not Available; P&T: Post and Telecommunications; PBOC: People's Bank of China; PetroChina: PetroChina Co., Ltd.; RMB: Renminbi; SEZ: Special Economic Zone; SINOCHEM: China National Chemicals Import-Export Corp.; SINOPEC: China National Petrochemical Corp.; SINO-TRANS: China National Foreign Trade Transportation Corp.; SDPC: State Development Planning Commission; UNDP: United Nations Development Program

International Finance Corp., a unit of the World Bank Group

Will buy 15% stake in Nanjing City Commercial Bank (Jiangsu). \$27 million. 11/01.

OTHER

Hong Kong Monetary Authority/China Government Securities Depository Trust & Clearing Co., Ltd.

Will establish a link between their securities settlement systems to promote the development of debt-market infrastructure in China and Hong Kong. 01/02.

Prudential plc (UK)/Harvest Fund Management Co., Ltd.

Signed agreement in which Prudential will provide technical support to Harvest Fund in investment management, sales and marketing, capital operation, interior supervision, corporate management, and risk control. 01/02.

Hyundai Motor Group (South Korea)/BOC

BOC will grant credit services including trade credits and foreign exchange loans to Hyundai. \$500 million. 12/01.

Korea Exchange Bank (South Korea)/BOC

Will cooperate in the dollar- and RMB-denominated direct loan business. 12/01.

Allianz AG (Germany)/Guotai Junan Securities Co.

Will set up a team to form a joint venture fund management company. 11/01.

Prumerica Financial, the brand name used by Prudential Insurance Co. in China (US)/Everbright Securities Ltd. (Beijing)

Will set up joint venture to conduct fund management consulting in Shanghai. 11/01.

Chemicals, Petrochemicals, and Related Equipment

INVESTMENTS IN CHINA

Mitsui Chemicals, Inc. (Japan)

Will set up factory to produce terephthalic acid, used to manufacture polyester fiber. \$550 million. 12/01.

Consumer Goods

OTHER

Reemtsma Cigarettenfabriken GmbH (Germany)/Yunnan Yuxi-Hongta Tobacco (Group) Co.

Will share new technologies and processing techniques to develop the Chinese and global markets. 01/02.

Electronics and Computer Software

CHINA'S IMPORTS

AsiaInfo Holdings Inc. (US)

Won contract from Shanxi Mobile Corp., a subsidiary of China Mobile, to provide network optimization software. 01/02.

INVESTMENTS IN CHINA

Chunghwa Picture Tubes, Ltd. (Taiwan), LG Group (South Korea)/Fujian Electronic Industry Group

Will establish joint venture, LG Micron (Fujian) Electronics Corp., in Fuzhou, Fujian, to develop, design, and manufacture shadow masks, a core component used in the manufacturing of TV kinescopes and computer displays. (South Korea:80%, Taiwan:5%-PRC:15%). \$70 million. 01/02.

LG Group (South Korea)/Guangzhou Echon Technology Co., Ltd. (Guangdong)

Established joint venture, Echon-LG Information Systems Co., Ltd., to develop software and application resolutions for government departments, banks, and other sectors. \$20 million. 01/02.

Microsoft Corp. (US), Stone Group (Hong Kong)/Beijing Centergate Technologies Holdings Co., Ltd.

Will establish joint venture to develop application software for enterprises and government. (US:19%, Hong Kong:30%-PRC:51%). \$12 million. 01/02.

Kyocera Corp. (Japan)/Shilong Dongguan Yue Long Industry Co. (Guangdong)

Will set up joint venture, Kyocera Mita Office Equipment Co., Ltd., in Shilong, Guangdong, to manufacture laser printers and digital copiers. (Japan:90%-PRC:10%). \$15 million. 12/01.

OTHER

Sanyo Electric Co., Ltd. (Japan)/Haier Group (Shandong)

Will cooperate in marketing each others' products in China and Japan. 01/02.

Motorola (China) Electronics Ltd., a subsidiary of Motorola Inc. (US)/Chengdu High-Tech Zone Investment Co. (Sichuan)

Will set up a software R&D base in Chengdu Hi-Tech Zone in Sichuan. \$60.5 million. 12/01.

PaySys International Inc., a unit of First Data Corp. (US)/Shanghai Huateng Software Systems Co., Ltd.

Huateng will serve as PaySys products provider in China. 11/01.

Environmental Technology and Equipment

INVESTMENTS IN CHINA

Earth Tech, a unit of Tyco International Ltd. (US)

Will design, build, finance, and operate the Xi Lang wastewater treatment plant in Guangzhou. \$120 million. 12/01.

Wedeco AG Water Technology (Germany)/Chongqing Kangda Environmental Protection Inc. (Chongqing)

Will establish joint venture, Chongqing Wedeco-Kangda Water Technology Co., Ltd. (Germany:51%-PRC:49%). 12/01.

OTHER

BP (UK)/Chinese Academy of Sciences

Will cooperate in clean energy research over the next decade. \$10 million. 01/02.

Food and Food Processing

INVESTMENTS IN CHINA

Ajinomoto Co., Inc. (Japan), House Foods Corp. (Japan)

Established joint venture, Shanghai House Ajinomoto Foods Co., Ltd., to produce ready-to-eat foods. (Ajinomoto:70%, House Foods:30%). \$9.7 million. 11/01.

Machinery and Machine Tools

OTHER

John Deere Construction & Forestry Co. (US)/Hunan Sany Heavy Industry Co., Ltd.

Established partnership in which Sany will be the sole sales agent for John Deere equipment and machinery components in China. 11/01.

Metals, Minerals, and Mining

CHINA'S INVESTMENTS ABROAD

Rio Tinto plc (UK)/Shanghai Baosteel Group Corp.

Will establish joint venture to process iron ore in Western Australia. (UK:54%-PRC:46%). \$63 million. 12/01.

Miscellaneous

INVESTMENT IN CHINA

Underwriters Laboratories, Inc. (US)/China National Import and Export Commodities Inspection Corp. (CCIC)

Will establish joint venture in China to facilitate low-cost testing of Chinese products to earn the UL certification label. \$10 million. 12/01.

ContiTech Holding GmbH, a unit of Continental AG (Germany)/Grand Ocean (International) Co., Ltd. (Jilin)

ContiTech acquired 51% of Grand Ocean to establish joint venture, ContiTech Grand Ocean, which will manufacture air-conditioning and power-steering hose lines. 11/01.

Petroleum, Natural Gas, and Related Equipment

CHINA'S IMPORTS

Pohang Iron and Steel Co. (South Korea)

Won contract from CNPC to supply hot-rolled coil pipes for the third phase of the Trans-China Gas Pipeline project. \$14 million. 01/02.

OTHER

Nippon Mitsubishi Oil Corp. (Japan)/Sinopec

Will cooperate in selling fuel oil in China through Mitsubishi's joint venture in Guangdong. 01/02.

Royal Dutch/Shell Group (the Netherlands)/CNOOC

Signed product-share contract to cooperate in oil exploration in south Bohai Bay. 01/02.

Advantica Technologies Ltd., a subsidiary of Lattice Group (UK)/Xinao Gas Holding Ltd. (Anhui)

Will cooperate in natural gas transportation, storage, distribution, operating performance, and engineering technology. 11/01.

Pharmaceuticals

INVESTMENTS IN CHINA

Novo Nordisk (China) Biotechnology, a subsidiary of Novo Nordisk Scandinavia AB (Denmark)/Tianjin Development Zone Corp.

Will set up a factory in Tianjin Development Zone to produce insulin. 11/01.

OTHER

Avanir Pharmaceuticals Inc. (US)/Shanghai New Asiatic Pharmaceutical Co., Ltd., a subsidiary of Shanghai Pharmaceutical Co., Ltd.

Signed agreement to cooperate in R&D for Avanir's docosanol 10% cream. 01/02.

Ports and Shipping

INVESTMENTS IN CHINA

Singamas Container Holdings Ltd. (Hong Kong)/Tianjin International Maritime Container Engineering Corp. (TIMCO)

Singamas will acquire 55% of TIMCO's stake and rename it Tianjin Pacific Container Corp. 12/01.

Hutchison Port Holdings Ltd., a unit of Hutchison Whampoa Ltd. (Hong Kong)/Shenzhen Municipal Government (Guangdong), Yantian Port Group (Guangdong)

Will cooperate in developing Phase III of Yantian International Container Terminals. \$8.46 million. 11/01.

Property Management and Development

INVESTMENTS IN CHINA

Ascott Group (Singapore)/Beijing Foreign Investment Center

Established Ascott Property Management Co., Ltd. in Beijing. 01/02.

Accor (France)/Beijing Tourism Group

Will set up joint venture to provide management services to 50 three-star hotels in China. 12/01.

Telecommunications

CHINA'S IMPORTS

Gemplus International SA (Luxembourg)

Won contract from China Unicom to supply its removable universal identity module smart card for China Unicom's CDMA network. 01/02.

Nortel Networks Corp. (Canada)

Won contract from China Unicom to supply its Optical Long Haul backbone networks in Beijing, Fujian, Guangdong, and Zhejiang. \$14 million. 01/02.

Compagnie Financière Alcatel (France)

Won contract from China Mobile to build China Mobile's first optical transmission backbone network. \$15 million. 12/01.

LM Ericsson AB (Sweden)

Won contract from Sichuan Mobile Communications Corp. to expand Sichuan Mobile's GSM/GPRS mobile phone network in Sichuan. \$143 million. 12/01.

Motorola Inc. (US)

Won contracts from China Mobile Communications Corp. to supply wireless equipment. \$95 million. 12/01.

UTStarcom Inc. (US)

Won contract from China Telecom to expand UTStarcom's PAS(tm) citywide access system in Zhejiang. 12/01.

Siemens Information and Communications Mobile Group, a unit of Siemens AG (Germany)

Won contract from China Mobile to expand the GSM network in Xinjiang Uygur Autonomous Region. \$88 million. 11/01.

INVESTMENTS IN CHINA

Samsung Electronics Co., Ltd. (South Korea)/Shanghai Bell Co., Ltd., a joint venture of Compagnie Financière Alcatel (France)

Will establish joint venture, Shanghai Bell Samsung Mobile Communications Co., Ltd., to cooperate in the development, production, and marketing of CDMA systems. (South Korea:49%-PRC:51%). \$29 million. 01/02.

OTHER

GRIC Communications Inc. (US)/China Netcom Corp.

Signed deal to allow GRIC's subscribers to use Netcom's high-speed wireless Internet access network. 11/01.

Loral CyberStar & Communications Co. (US)/China Telecommunications Broadcast Satellite Corp. (ChinaSat)

Established partnership under which ChinaSat will offer the entire range of CyberStar services including the ClearStream broadband services. 11/01.

Oy Nokia AB (Finland)

Will set up an R&D center in Hangzhou, Zhejiang, to develop platform technologies. 11/01.

Philips Semiconductors, a unit of Koninklijke Philips NV (the Netherlands)/Huawei Technologies Co., Ltd. (Guangdong)

Will jointly develop a third generation chipset. 11/01.

Qualcomm Inc. (US)/TCL Holdings Co., Ltd. (Guangdong)

Signed agreement to grant TCL a license under Qualcomm's CDMA patent portfolio to develop, manufacture, and sell cdmaOne™ and third-generation subscriber equipment. 11/01.

TSI Telecommunications Services Inc. (US)/China Unicom

TSI will provide China Unicom's CDMA subscribers with international roaming services. 11/01.

Transportation

CHINA'S IMPORTS

Bombardier Transportation, a unit of Bombardier Inc. (Canada)

Won contract from Shenzhen Metro Co., Ltd., Guangdong, to supply trains. \$88.02 million. 11/01.

INVESTMENTS IN CHINA

General Electric Co. (US)/Beiya Industrial Group Co. (Beijing)

Will establish joint venture to provide comprehensive goods distribution via railway. \$60.4 million. 11/01.

OTHER

Evobus GmbH, a unit of Mercedes-Benz GmbH (Germany)/Ankai Automobile Co., Ltd. (Anhui)

Will cooperate to produce S315 series luxury buses in China. 12/01.

Garuda Indonesia (Indonesia)/China Southern Airlines Co., Ltd.

Signed codeshare agreement for the Jakarta-Guangzhou route. 12/01.

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The WTO's Impact on China's Agricultural Sector

Continued from page 17

whether the current price support program is compatible with WTO rules. In the meantime, China continues to search for WTO-compatible policies to boost rural incomes—policies that may include research and education subsidies, support for infrastructure projects, and crop insurance payments.

The government has also initiated democratic village elections, giving farmers a chance to elect their own local leaders (*see The CBR*, March-April 2001, p.44). Locally elected officials may be more willing to allow farmers to organize cooperatives to market their output and organize technical associations to purchase inputs and spread new production technologies. As a result, local township authorities may begin to give villages the opportunity to form associations to address mutual concerns, such as the cooperative marketing of products.

Harvesting change

China's WTO membership will require adjustments on both sides of the Pacific. Some US farmers will benefit from a more open Chinese market in the years ahead and will export more agricultural commodities to China. Some US agricultural producers will feel the impact of the imports of labor intensive agricultural products from China.

It will take time for China to gear up to increase agricultural exports. Chinese firms must expand their processing capacity, improve local transport systems, construct storage facilities, develop quality-control systems to maintain health and sanitary standards, adopt internationally competitive packaging and labeling standards, develop marketing systems, and build financial institutions to fund all of these projects.

While China's agricultural sector adapts, the country's trading partners may become irritated as Chinese goods enter foreign markets even as China maintains its import trade barriers. To sustain the support of its trading partners during the transition period, China would be wise to keep them informed of the sequence and progress of change. Patience on both sides will be required. 完

Cracking the Chemical Sector

Continued from page 39

assist the government in its task of industry rationalization. Despite the favorable turn in the investment environment, mergers and acquisitions of Chinese chemical enterprises have not taken off yet. Foreign investors in chemicals, as represented by the survey respondents, are generally skeptical of the quality and risk-reward balance of Chinese assets available for acquisition. While about half of respondents would "consider" an acquisition, none regard it as a strategic priority. Most are reluctant to take over existing state-owned concerns with their attendant problems, such as antiquated production equipment, a poorly trained and possibly restive workforce, and the likely need for extensive environmental remediation.

The next stage of reform may well be the liberalization of China's stock markets to allow foreign investors to float A and B shares. In 1994, China introduced yet another corporate form, the foreign-invested joint-stock company, which (unlike the holding company) very few major investors have adopted—Eastman Kodak Co. being the first example. The Ministry of Foreign Trade and Economic Cooperation is preparing to allow foreign-invested joint-stock companies to issue shares on domestic stock exchanges, and new policy guidelines are expected soon. This could be a revolutionary development, permitting foreign investors full access to China's stock markets. In the long term, it may lead to the emergence of Shanghai as a major player on the world's financial stage with New York, London, and Tokyo. In the near term, the ability of foreign investors to issue shares locally may make them take a closer look at mergers and acquisitions of state-owned assets, as the government evidently anticipates.

A more profitable era

The environment for chemical investments in China has improved steadily and appears poised for further changes that will benefit both existing and new ventures. Despite the current challenges of hypercompetition, gaps in infrastructure, and a weak raw material base, the goal of creating shareholder value is steadily becoming more realistic as transparency and the ability of foreign investors to control their operations increase. With WTO membership now a reality and several global-scale projects moving forward, it seems likely that—in contrast to the previous decade—dynamic changes in the state-owned sector will spur active involvement by foreign investors, with the petrochemical segment playing a leading role. 完

Blue Skies for the Beijing Olympics

Andrew Ness

In the run-up to the 2008 Olympic Games in Beijing, Chinese government officials at both the central and municipal levels are keenly aware that they must transform Beijing into a world-class city. Indeed, China's capital is woefully unprepared for what will undoubtedly be the single largest international event that China has ever hosted.

To prepare for the Olympics, Beijing plans to redevelop large tracts of central city real estate, extend its urban transportation infrastructure, clean up its air, create new parks, and restore historic landmarks

The pressure to transform Beijing will generate numerous benefits; most notably, enduring changes to the city's urban form through the completion of a comprehensive urban regeneration program. Mid-September 2008 is a decidedly harsh and inflexible deadline by which the city will have to resolve numerous longstanding environmental, transportation, and other infrastructure problems. Massive spending on infrastructure projects and related capital construction programs will benefit the municipal economy in the short term by creating jobs.

The pace and scale of investment in urban infrastructure and environmental improvement will accelerate considerably, leaving the city with a major new central park, where there is now none; a much-expanded mass transit system, which will include a sorely needed connection between the north and south areas of the central city; and finally, much more rigorous environmental protection systems and the infrastructure and facilities required to back them up (see Figure 1).

Andrew Ness
is director, Global Research
and Consulting, People's
Republic of China at CB
Richard Ellis.

Key problems and improvements

Specifically, Beijing plans to address problems relating to:

● The environment

Beijing still suffers from severe dust storms, which blanket the city with some 25,700 tons of sandy dust each spring and give rise to the glowing, purplish-orange springtime sunsets for which the city is famous. The city is also home to 110 polluting factories, which ring the inner city, and some 1.17 million automotive vehicles. In addition, around 10-15 percent of the inner city's 6 million residents still heat their homes with coal-burning stoves in the winter, according to the Beijing Municipal Environmental Protection Bureau (EPB).

China's representatives pledged to the International Olympic Committee that, if chosen to host the 2008 Olympics, Beijing would reduce its ambient air pollution to the level of Paris today. To attain this difficult goal, the Chinese government has reportedly earmarked roughly ¥45 billion (\$5.4 billion) to resolve some of the city's most serious environmental problems. In an attempt to control the dust storms, Beijing will soon take steps to increase the forested area surrounding the central city by 50 percent by 2005, through the addition of a 125-km tree belt.

In another, dramatic bid to improve the air quality, 90 percent of the city's 20,000-odd public buses will switch from diesel to natural gas by 2008, up from 60 percent today. Sixty percent of the city's 67,000 taxis will also use natural gas by 2008, up from 40 percent today.

Beijing will also move the 110 polluting factories now inside the fourth ring road—which have a total floor area of 6.13 million m² and primarily serve the chemical, pharmaceutical, and textile industries—to locations outside of the fourth ring road by 2007. According to the Beijing Municipal EPB, this move will cut the total amount of inner-city land devoted to industrial purposes by half, to 7 percent. In addition, to safeguard the quality of water in, around, and under Beijing, the city will require the treatment of 90 percent of its sewage in modern treatment plants by 2010, up from 60 percent today.

● Transportation

Traffic in Beijing is frequently snarled—in part because of the excessive number of low-grade taxis and other similar vehicles that the city has licensed in recent years and because of the shortage of north-south roadways and metro and light-rail links. The phasing out of the small, uncomfortable Xiali taxis, manufactured in Tianjin, which in 2001 accounted for 77.5 percent of the 67,000 taxis licensed to operate in Beijing, was markedly accelerated in early 2002.

The metro system provides inadequate service to the city's northern and southern areas, with one line currently running east-west and the other following the path of the second ring road. Olympic preparation plans include some ¥90 billion (\$10.8 billion) for various kinds of transportation improvements to the inner-city light rail system and the metro, the inner-city expressway system, and outlying high-speed expressways, as well as the accelerated completion of the city's ring road system. The Beijing government has made completion of the city's light rail system a high priority over the next five years, with more than 100 km of new light rail currently under construction. Beijing's plans also include the completion of the No.5 metro line, the Batong and Chunyi branch metro lines, and the Wangjing branch line. Within the same time frame, the city will complete preparatory work to launch construction of the No.4 and No.9 metro lines. As a result of this work, by 2006 Beijing will have 138 km of inner-city metro and light rail lines, up from 53 km today (see Figure 2).

The more than 10 expressways that radiate outward from the center of Beijing are the spokes of a system that is giving rise to a dense network of transportation connection points, linking Beijing with its outlying suburban areas. Also by 2006, the city will revamp some 200 km of inner-city roads to form an expressway system and complete the fifth and sixth ring roads, according to the Beijing Municipal Traffic Administration Bureau. In addition, the Beijing-Miyun Expressway, which is currently still in the planning stage, and the third phase of the Beijing-Badaling Expressway are both scheduled for completion by then.

● Utilities and high technology

Beijing will use the ¥15 billion (\$1.8 billion) that is earmarked for the city's utilities to improve the city's water, power, and gas supplies, according to the Beijing Organizing Committee of the 2008 Olympic Games (BOCOG, see p.50). Within the next five years, Beijing will establish a second Shanxi-Beijing natural gas pipeline, tripling or quadrupling the city's current supply of natural gas. By 2005, BOCOG estimates that electricity use will soar from the present 31.8 billion kilowatt-hours (kWh) to 50 billion, with peak period use expected to jump from 67.8 billion to 100 billion kWh.

China also plans to spend ¥30 billion (\$3.6 billion) on "digitalizing Beijing." This will entail

upgrading the city's basic information technology and telecommunications infrastructures and districtwide networks of fiber-optic cable. The Chaoyang, Dongcheng, Haidian, Shijingshan, and Fengtai districts will be the highest priority areas for the provision of modern telecommunications infrastructure, and as such will be the city's first platforms for the widespread use of e-commerce, e-administration, and distance education. The Olympic Park area will have access to digital and broadband telecommunications, wireless transmission and networking technologies, and other intelligent technology solutions, according to BOCOG.

China plans to spend ¥30 billion (\$3.6 billion) on "digitalizing Beijing." This will entail upgrading the city's basic information technology and telecommunications infrastructures and districtwide networks of fiber-optic cable.

● Heritage and urban regeneration

In the 1950s, the Beijing government chose not to preserve the whole of the city's historic center, which covered 62 km², on the grounds that it would be too costly and unmanageable. But as the Jianguomenwai central business district, Fuchengmenwai Financial District, and the Wangfujing commercial area continue to expand rapidly, the city's leaders have come to realize that not merely the city's ancient monuments but also the cityscape in older neighborhoods constitute part of the city's charm and character.

The Beijing Municipal Construction Commission issued two regulations in 1999 that identified areas for historic preservation within the second ring road amounting to 5.58 km² (about 9 percent of the area within the second ring road), which was subdivided into 25 sites. This area amounts to 15 picturesque ancient streets, three cultural-historical areas, four enclosed courtyard-type residences (*siheyuan*), four historical lane areas (*hutong*), and three major commercial and cultural streets. Almost all of these properties are situated near the Qing Dynasty-era Imperial City. The plan aims to restore ancient sites and monuments gradually back to their original condition and convert the most attractive of them into public museums, thereby expanding the historical areas open to Beijing's tourists.

Initially the Beijing government did not seem in any hurry to implement the plan, but shortly after the city was granted the 2008 Olympic Games it announced an acceleration of the plan and designated some \$208 million to restore historical sites and remove old, dilapidated buildings that surround them.

City officials have also stepped up the removal of slum and substandard housing. Be-

tween 1990 and 2000, a total of almost 5 million m² of substandard housing was demolished in Beijing—the equivalent of about 184,000 residential units averaging about 27 m² each—forcing the relocation of some 165,000 urban house-

Upon completion, the Olympic Park will provide a desperately needed new “lung” amidst the miles of macadam ringing Beijing’s concrete canyons.

holds. The government wants to demolish an additional 9.34 million m² of older housing, out of a total residential stock of some 28 million m², resulting in the dislocation of yet another 350,000 inner-city households, according to BOCOG.

Raising—and spending—the money

The PRC government has reportedly drawn up a budget of ¥180 billion (\$21.7 billion) for 142 Olympics-related improvement projects in Beijing. Of this, some \$14 billion will come from the PRC government and the remaining \$8 billion will come from domestic and overseas private-sector investment. The Beijing Municipal Finance Bureau, under the central government’s

Ministry of Finance, will reportedly allocate half of the necessary PRC government funding.

Directly or indirectly motivated by the Olympics, Beijing will develop some 25 million m² of property in the 2002-08 period. This will entail not merely the revamping or new construction of competition and sports venues, and the development of a number of mega-malls and other major commercial projects, but also includes an enormous “urban facelift” program which will redevelop sizeable tracts containing substandard single-story dwellings in the city’s Xuanwu, Chongwen, Dongcheng, and Xicheng districts into new residential areas composed primarily of high-rise apartment complexes. At the same time, the city is stepping up the development of a new business district centered around the Zhongguancun area in Haidian and the second and third phases of the Fuchengmenwai Financial District.

The hosting of the 2008 Olympic Games will thus be the second-largest public works project ever undertaken in China—after the Three Gorges Dam. By some calculations, this is also the largest sum that has ever been spent in readying any single municipality to host the Olympic Games. According to the estimates of a Beijing economist with the China Research Institute of Science Popularization, who used statistics from the Sydney Olympics to derive a model of job creation, if Beijing attracts ¥74.5 billion (\$9 billion) in additional outside investment as a result of hosting the 2008 games, and if each ¥100,000 (\$12,100) invested creates one new employment opportunity, then Olympics-related investment will create 745,000 new jobs in Beijing. In addition, the government anticipates that the combination of Olympics-related fixed-asset investment and foreign direct investment will add 0.3 to 0.4 percentage points to China’s annual GDP growth in the six-and-a-half years leading up to the event.

Beijing’s 2008 Olympic Organizing Committee

Five months after Beijing won the bid to host the 2008 Olympic Games, the city officially launched the Beijing Organizing Committee of the 2008 Olympic Games (BOCOG). According to Liu Qi, president of BOCOG and mayor of Beijing, the committee will focus its work on market development strategy, image design, stadium planning and construction, and talent recruitment, among other issues. The committee will also strengthen China’s communication and cooperation with the International Olympic Committee and other international sports organizations.

BOCOG consists of 13 departments: general strategy, market development, propaganda, external liaison, engineering, finance, legal affairs, supervision and auditing, sports, personnel, technology, environmental protection, and a general office.

President: Liu Qi (mayor of Beijing)

Executive President: Yuan Weimin (director of State Sports Bureau)

Acting Vice President: Liu Jingmin (vice mayor of Beijing)

Vice Presidents: Duan Shijie (deputy director of State Sports Bureau), Jiang Xiaoyu (director of Propaganda Dept. of the Beijing Municipal Party Committee), Li Zhijian (president of All-China Sports Federation and deputy director of State Sports General Administration), Yu Zaiqing (vice president of Chinese Olympic Committee and deputy director of State Sports General Administration), Zhang Mao (vice mayor of Beijing)

Secretary General: Wang Wei (vice secretary general of Beijing Municipal Government)

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—The US-China Business Council

The Olympic Park

To rectify the lack of a suitable, central city park area to serve as an Olympic Park, the Beijing Municipal Government is now organizing a tender for the conceptual master plan of what will be the city’s newest park. The Olympic Park will occupy 12 km², about 60 percent of which will be green and wooded space. Its size makes it the largest park in central Beijing and the second largest within Beijing Municipality, after Fragrant Hills Park in the city’s northwest. Upon completion, the Olympic Park will provide a desperately needed new “lung” amidst the miles of macadam ringing Beijing’s concrete canyons.

The park will be located at the northern end of the central north-south axis that bifurcates central Beijing, straddling the fourth ring road. The importance of this north-south axis is clearly explained by Zixuan Zhu and Reginald Yin-Wang Kwok in their essay “Beijing: The Ex-

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pression of Political Ideology," in *Culture and the City in East Asia*: "Following the Confucian tradition, Beijing was planned along a north to south axis, representing the authority of the state. The Imperial Palace, government offices, religious buildings, and minor royal residences

The Beijing Municipal Tourism Bureau has announced that it intends to more than double the city's present stock of star-rated hotels to over 800 and raise the number of hotel rooms in such hotels by some 60 percent, to 130,000, by the time the games begin.

were all located, symmetrically, on the east and west sides of the central axis. Political power and social position were clearly demarcated on the urban landscape." The location of the Olympic Park thus embodies the Chinese government's stated goal of "integrating the 2008 Olympics with Chinese culture and spiritual civilization."

The park will include one central district, which has been officially designated the Olympic Green, and three non-contiguous ancillary districts. The central district will contain the Beijing Olympics Athletes' Village, Reporters' Village, News Center, International Broadcasting Center, and 14 athletic competition venues. The three subdistricts include a northern scenic district, a western living district, and a university village that contains sports training and competition facilities associated with eight Chinese universities.

Olympic facilities and hotels

China Olympics Commission Sports Director Lou Dapeng stated that for the 28 competitive athletic events in the 2008 Olympics, China will provide a total of 59 stadiums, sports arenas, gymnasiums, and workout and exercise areas, all of which will meet international specifications. Beijing will provide 32 competition venues, located in the four districts of the Olympic Park. For the convenience of the participating athletes, 14 of the competition areas will be within 5 minutes' drive of the Olympic Village, 10 of the competition venues will be within a 20-minute drive, and the remaining 8 venues will be within 30 minutes' drive. Five additional competition venues will be located in Shanghai; Tianjin; Qingdao, Shandong; Qinhuangdao, Hebei; and Shenyang, Liaoning. Qingdao will host the sailboat race competitions while the four other cities will host soccer matches.

In the late 1980s, the Beijing government spent ¥2.5 billion (\$302.1 million) developing sports venues and related facilities for the 1990 Asian Games. These facilities, with a total floor area of 1.3 million m², include 80 venues for athletic training and competitions—55 of which were either renovated or newly constructed buildings. However, Beijing still faces the sizeable task of building 24 completely new competition venues and related facilities, and Beijing and the other host cities will need to revamp 13 existing facilities to bring them up to International Olympic Committee specifications, according to BOCOG.

The housing for athletes and journalists who attend the roughly three-week event will include 470,000 m² of housing for athletes (equivalent to

The Olympics and the Beijing Real Estate Market

The selection of Beijing as the host city for the 2008 Olympics had an almost immediate and significant impact on the Beijing real estate market. Analysts now anticipate another six to seven years of double-digit GDP growth in the city as a result of massive Olympics-related urban investment. Though the building of residential accommodations for the games' 22,000 participants will lead to a small surge in medium- to high-quality residential supply in the years 2007-08, this amounts to a small percentage of the total number of housing completions that Beijing forecasts for 2002-08—between 10 and 12 million m² per year, or the equivalent of 670,000 units—within the seven-year period.

The present sales absorption rate for apartments located within the third ring road is 95 percent, the absorption rate for apartments between the third and fourth ring roads is about 80 percent, and the rate for

apartments in satellite residential areas that ring Beijing's urban fringe is approximately 60 percent (this figure varies considerably among individual satellite areas), according to CB Richard Ellis. Absorption patterns in the 2002-08 period are expected to be fairly similar, though the growth rate in satellite residential areas—particularly areas northeast, north, and northwest of the central city—is expected to rise as the city completes transportation improvements such as the light rail system.

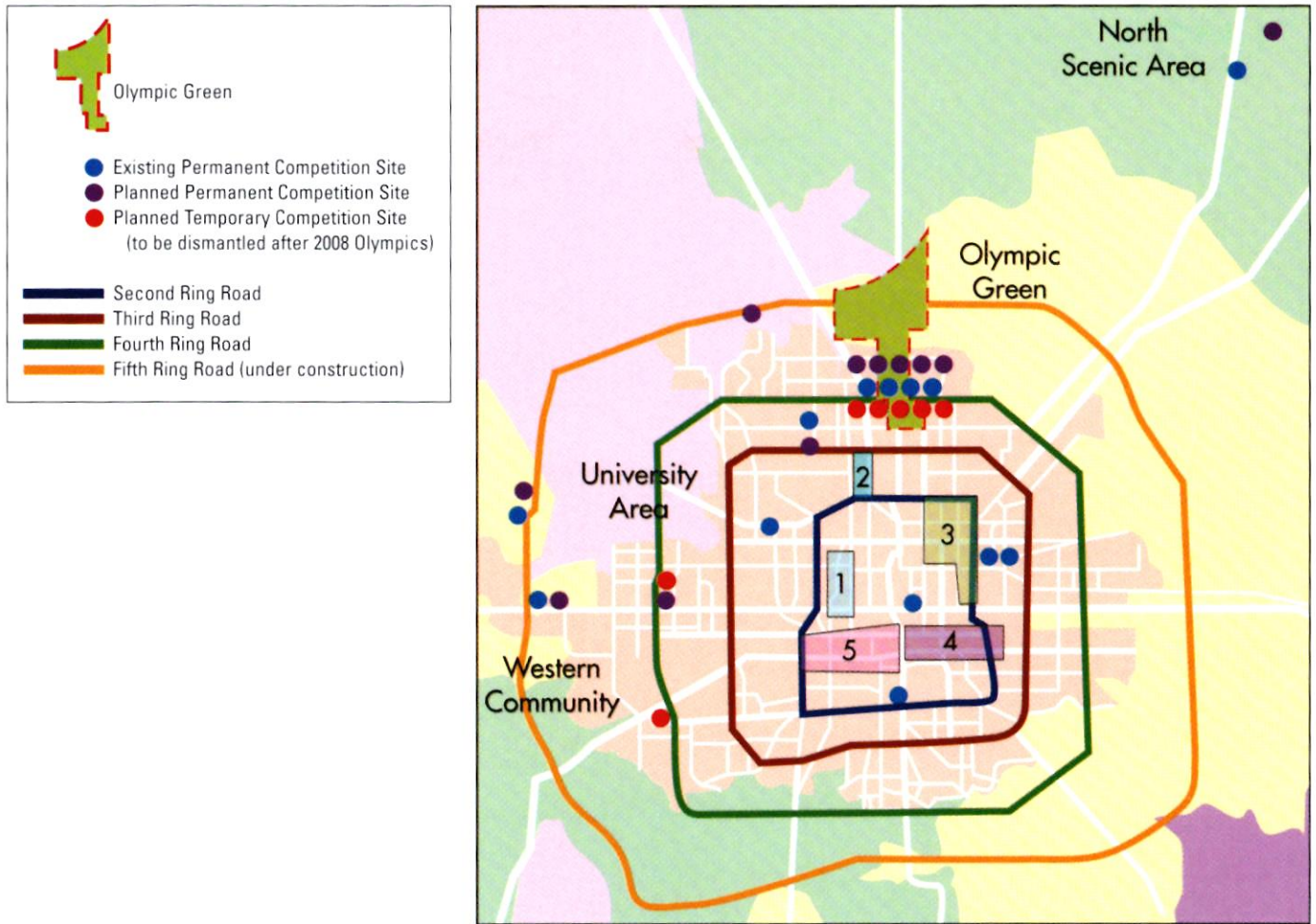
Certainly, the massive improvement plans for the northern Chaoyang District, between the fourth and fifth ring roads, have not gone unnoticed by Beijing's development community, and many developers who own sites near the Asian Games Village have begun targeting the high end of the market. Some owners of sites zoned for residential development in the northeastern and northwestern parts of

the central city, in a bid to stimulate greater purchasing interest, have even altered their development concepts with the Olympic Games in mind.

If the thorough regeneration of Beijing is successful, the changes wrought in the cityscape will make it a far more pleasant place in which to live and work. Domestic and overseas companies will then create strong and stable real estate demand in the city's office, high-end residential, and retail sectors. This demand is crucial to ensuring the success of the recently inaugurated Chaoyang Central Business District, providing sufficient financial-sector tenants to support the latter-phase expansion of the existing Fuchengmenwai Financial District, and supporting the existing Zhongguancun high-technology district as a thriving hub of information technology business and commerce.

—Andrew Ness

Figure 1
Beijing's Urban Redevelopment and Olympic Development Plans



NOTES:

1. Beijing is clearing substandard inner city residential areas to make way for the Phase II and III expansions of the financial district, Phase I of which has been completed.

2. The government will connect the second and third ring roads. In the process, the city will considerably upgrade Deshengmen Avenue to create a major new hub of commercial development—provisionally named the Deshengmen Science and Technology Park. This project is intended to drive office and commercial development and, to a lesser extent, high-quality residential development in and around Deshengmenwai.

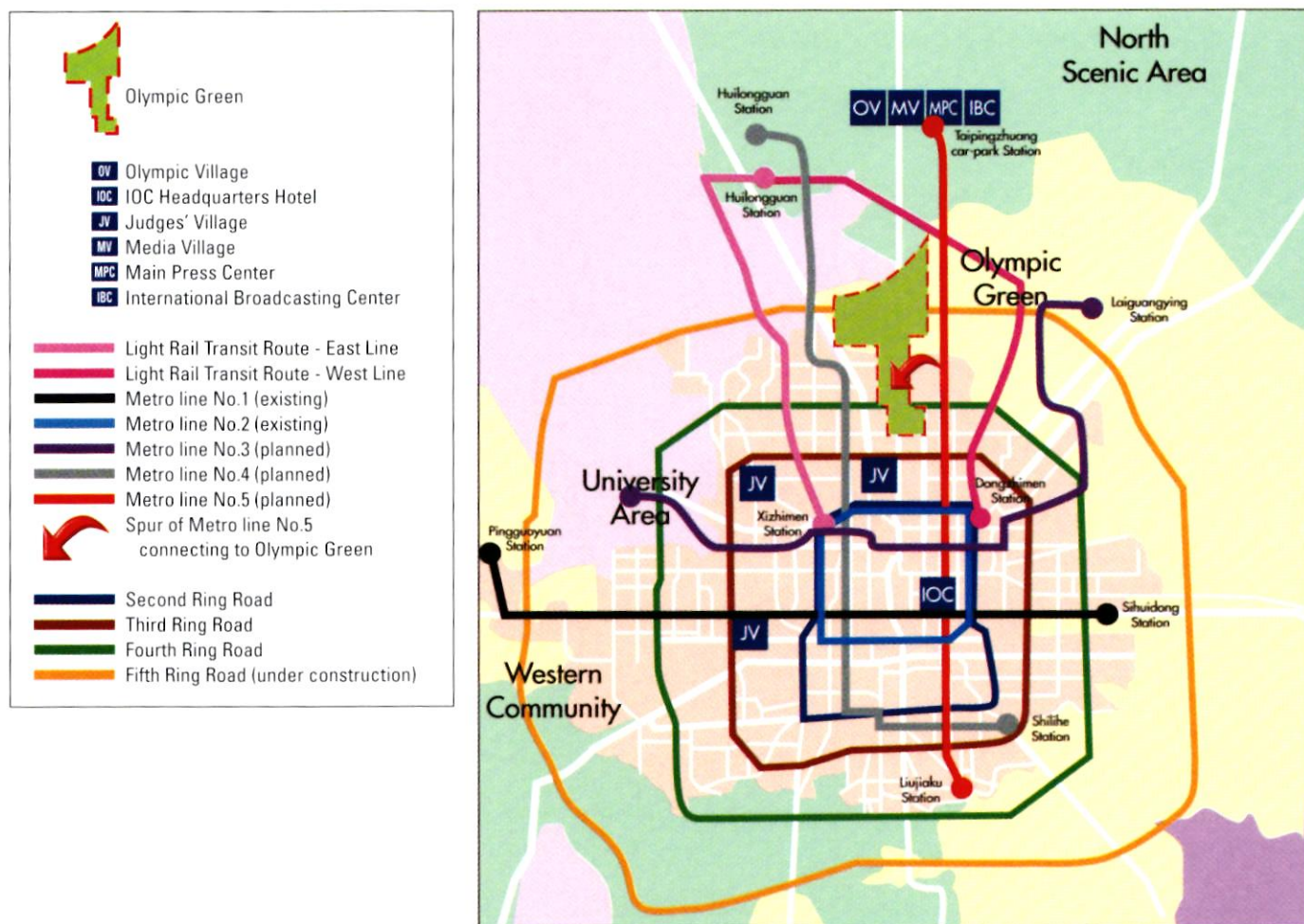
3. The city will transform a portion of the Dongcheng District into a high-grade residential and commercial area by upgrading Wangfujing into a major commercial boulevard and transforming Dongzhimen into a major transportation hub. The street-level

area at the new Dongzhimen traffic hub will serve as an intersection for numerous inner-city public bus routes; basement level two of the new facility will serve the Beijing International Airport Light Rail Express Train; basement level three will serve as the central city terminus of the eastern extension of the Beijing Light Rail system.

4. The government will substantially upgrade Chongwenmenwai Avenue by transforming a large section of the Chongwen District into a high-grade, mixed-use residential and commercial area. The city will also build the New World Center on Chongwenmenwai Avenue.

5. The government will transform a substantial section of the Xuanwu District into a high-grade, mixed-use commercial and residential area. The Junefield Group's massive Junefield Plaza commercial complex, situated on Xuanwumenwai Avenue, is driving this regeneration.

Figure 2
Planned Mass Transportation Improvements



SOURCE: CB Richard Ellis, Global Research & Consulting

12,000 apartment units) and 400,000 m² of housing for journalists and other media personnel (equivalent to 10,000 apartment units). Private sector developers will build all of the housing in the two villages, and the resulting units will be offered for sale as condominiums after the games.

In 2000, Beijing attracted some 67.4 million domestic visitors and 2.82 million overseas travelers. The city's 392 star-rated hotels provided 80,000 hotel rooms. Though the city's present stock of hotels would likely be sufficient to accommodate the huge surge in visitors during the two weeks of the Olympic Games, the Beijing Municipal Tourism Bureau has nevertheless announced that it intends to more than double the city's present stock of star-rated hotels to more than 800 and raise the number of hotel rooms in such hotels by some 60 percent, to 130,000, by the time the games begin. These plans seem to reflect an anticipated rapid growth in the city's tourism and convention industry over the next six years, as opposed to demand during the Olympic Games.

After the games

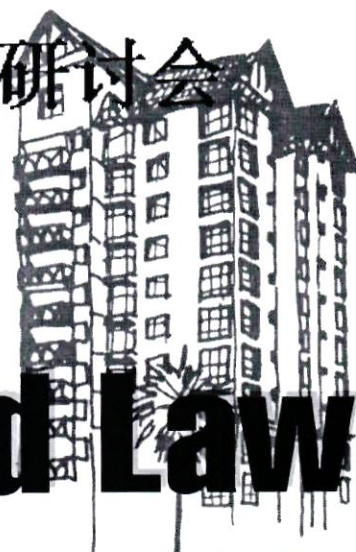
Once the games are finished, the parks, competition venues, residential facilities, sports complexes, media centers, and commercial facilities now on the drawing board will provide the population of Beijing with recreational and athletic facilities for decades to come and establish Beijing as an ideal host for a wide variety of national athletic competitions.

The placement of the Beijing Olympic Park, extending northwards from the 1990 Asian Games Village, represents the final step in the development of the northern terminus of the city's north-south axis. The park, which may feature a 120-story Beijing World Trade Center and its own business district, will provide yet another space that may emerge as the center of a major new commercial development area to counterbalance the dense development in the city center to the south.

完

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