Chapter 6

China's Fruit and Vegetable Trade

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Emerging developments in China's fruit and vegetable trade indicate that foreign producers could see increased competition from the world's largest producer. During 1999-2001, China ranked eighth in world exports of fruits and vegetables (including pulses and tree nuts) and reached more than six times the level of its imports.

But as the world's largest consumer of fruits and vegetables, with a growing appetite for high-quality produce, China is also an expanding import market (mostly fresh fruits and, to a lesser extent, processed products). The value of China's produce imports increased sevenfold between 1992 and 2001, making it one of the world's fastest growing import markets.[1]

A clear distinction can be made between trade in fruits and in vegetables. China is a large net exporter of fresh and processed vegetables. In contrast, the country imports more fruit than it exports. China's overall trade value and volume have been increasing in the last decade, and recent investment in the sector has resulted in competitive products and points toward a greater presence for China in global markets (Shields and Tuan, 2001). Trade flows, as well as shifts in supplier shares in China and third-country markets, provide an indication of how China's fruit and vegetable trade will help shape global trade and financial prospects for producers and traders around the world.

China's Export Value Resumes Growth

China's exports of fruits and vegetables rose from $2 billion in 1992 to $3.7 billion in 2001 (fig. 6.1). Growth stalled in the mid- and late-1990s as total volume (quantity) increased, while average prices declined due to competitive conditions in major markets. China's export volume of fruits and vegetables is about 1 percent of total domestic output.

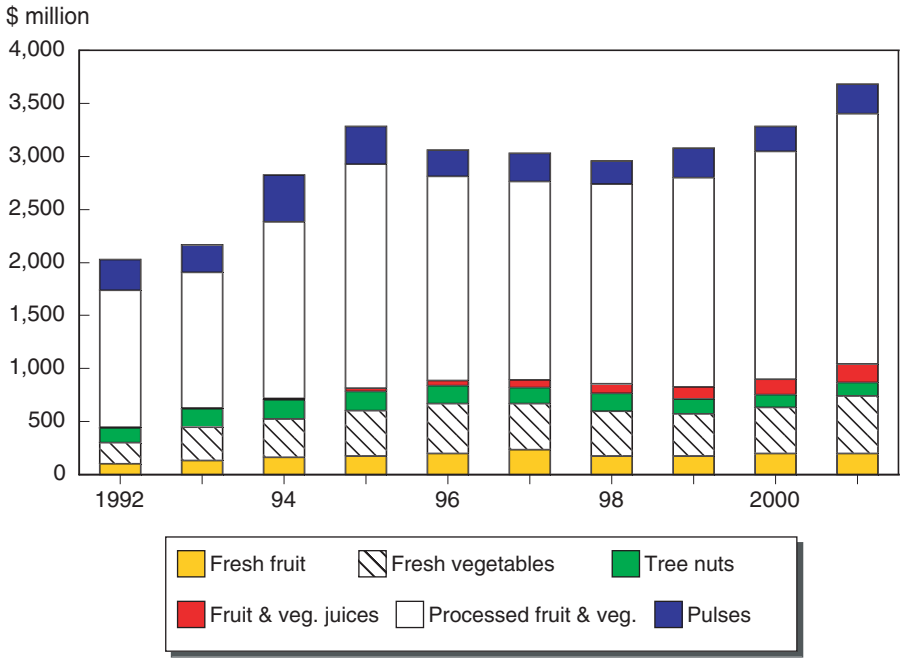
Processed products (including juice) account for more than two-thirds of China's fruit and vegetable export value (table 6.1). Leading products include vegetable mixes (not frozen), frozen vegetables, and mushrooms. Fresh vegetables—such as mushrooms, garlic, onions, and radishes—account for 14 percent of total horticultural exports. The balance is in pulses (8 percent), fresh fruit (6 percent), and nuts (4 percent).

Japan is the major market for processed products, absorbing nearly half of China's exports (fig. 6.2). In turn, China is easily Japan's number one supplier (see chapter 7 on Japan). The United States is the next-largest market, accounting for about 6 percent of China's total exports. Other key

[1] Trade data cited here are from the United Nations Trade Statistics, as reported by China and from compilations by World Trade Atlas. The country's imports are likely understated because official government statistics do not reflect "gray market" fruit and vegetable sales, which are channeled from Hong Kong into both nearby and far-inland markets.

Figure 6.1

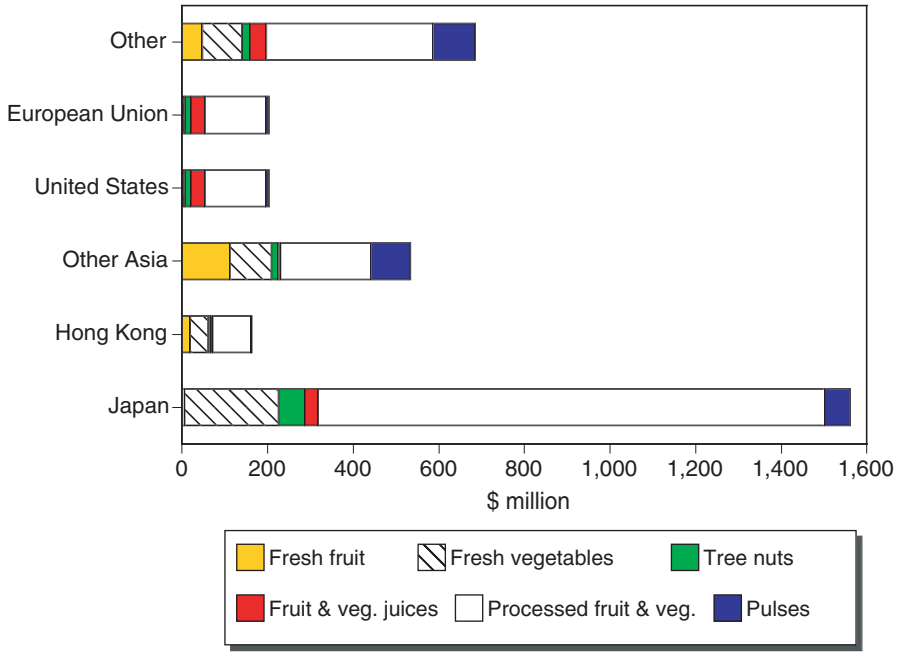
China's fruit and vegetable exports resume growth in 2000



Source: USDA, FAS Global Agricultural Trade System.

Figure 6.2

Japan is the dominant market for Chinese fruit and vegetable exports, average 1999-2001



Source: USDA, FAS Global Agricultural Trade System.

Table 6.1—China's trade in fruits and vegetables

China's exports of fruits and vegetables			China's imports of fruits and vegetables		
Item	Avg. value 1999-2001	Major markets	Item	Avg. value 1999-2001	Major suppliers
	$ Million			*$ Million*	
Total exports	**3,346**	Japan, Hong Kong, European Union	**Total imports**	**521**	S. America, Thailand, Philippines, United States
Fresh fruit	190		Fresh fruit	277	
Apples	91	Russia, Singapore, Malaysia, Indonesia	Bananas	136	Philippines, Ecuador, Colombia
Mandarins	40	Philippines, Malaysia, Canada, Indonesia	Grapes	31	United States, Chile
Pears	36	Malaysia, Indonesia, Singapore	Oranges	19	United States, New Zealand
			Apples	13	United States, New Zealand, Chile
Fresh vegetables	459		Fresh vegetables	4	
Mushrooms	114	Japan	Celery	2	United States
Garlic	109	Indonesia, Japan, Netherlands	Peas	1	New Zealand
Onions	47	Japan, Russia	Mushrooms	1	North Korea
Beetroot, radishes, etc.	21	Japan, South Korea			
Nuts	128		Nuts	32	
Chestnuts	63	Japan, Taiwan, Singapore	Pistachios	6	United States, Iran
Walnuts	23	United Kingdom, Japan, Canada	Cashew nuts	4	Vietnam
Pistachios	2	Hong Kong, United States	Coconuts	3	Vietnam,Thailand
Veg. & fruit juice	146		Veg. & fruit juice	16	
Apple juice	113	United States, Japan, Netherlands	Frozen orange juice	10	Brazil, United States, Israel
Processed veg. & fruit	2,161		Processed veg. & fruit	164	
Vegetable mixes (not frozen)	644	Japan, United States, South Korea, Hong Kong	Manioc (cassava)	71	Thailand, Indonesia, Vietnam
Frozen vegetables	314	Japan, Germany, United States, Netherlands	Potatoes (frozen)	19	United States
Mushrooms	301	Japan, Germany, Hong Kong, United States	Potatoes (not frozen)	5	United States, Belgium, United Kingdom
			Frozen sweet corn	4	United States, Hungary, Canada, New Zealand
Pulses	263		Pulses	27	
Kidney or white pea beans	117	Cuba, Italy, Pakistan, Turkey, Japan	Dried peas	19	Canada
Mung/black/green beans	75	Japan, India, United States, Vietnam	Mung/black/green beans	1	Myanmar, Thailand, Australia
Small red beans	30	Japan, South Korea			

Source: USDA, FAS Global Agricultural Trade System.

markets include Germany and the Netherlands, along with regional markets in Hong Kong, South Korea, Malaysia, and Singapore.

One of the fastest growing segments of China's processed produce exports is frozen vegetables, which increased more than fivefold between 1992 and 2001. If prepared frozen potatoes (mainly french fries) are excluded, China is the world's second-largest exporter of frozen vegetables after Belgium. Japan is the destination for more than three-quarters of China's exports, and China holds a 56-percent share in that market. If prepared frozen potatoes are included, however, China's global ranking slips to number five, while the United States ranks third. Although China has sharply increased its presence in Japan, Chinese frozen vegetables do not yet pose a serious challenge to U.S. frozen vegetables in Japan because each country ships different products. Japan's frozen vegetable imports from the United States, mainly prepared potatoes and sweet corn, meet with only a minimum challenge from China (Huang, 2002).

A larger share of China's fresh vegetable exports, which require short transit times and cost more to transport, stays within the Asia region—nearly 80 percent compared with 70 percent for processed products. Japan accounts for about half of China's fresh vegetable exports, while Hong Kong ranks second with a share of about 10 percent.

China has recently become a strong competitor in fresh vegetable markets that other suppliers, such as the United States, previously dominated. For example, it is now a major factor in the import market for fresh broccoli in Japan, which was until 2000 almost exclusively supplied by the United States. China's product quality is reportedly meeting customer preferences, and some Chinese growers/marketers contract with Japanese importers or sell on consignment, which makes the broccoli very price-competitive. Recent improvement in ocean freight service to Japan from China—which takes only 3-4 days compared with about 14 days from California—has been key to development of this trade flow (USDA, FAS, 2001a).

China's leading fresh fruit export is apples, and the country is by far the world's largest apple producer. Major markets include Russia for lower-priced apples and Southeast Asia (including Singapore, Malaysia, Indonesia, and the Philippines) and Hong Kong for higher-priced apples. U.S. apples have encountered significant competition from the Chinese products in Hong Kong and the Philippines, key U.S. export markets. In 1999, the cost of shipping apples from China to the Philippines was about 15 percent lower than shipping from the United States (Caron, 1999). Since then, the gap has likely widened as ports in China have expanded.

Up to one-half of China's apple trees have yet to reach maximum yields, so production is expected to keep expanding during the next 10 years. In addition, foreign investment is resulting in highly competitive operations. In the eastern province of Shandong, for example, a Singapore-based firm packs locally grown apples and pears for shipping to Southeast Asia and for the domestic market. Demand is strong in major cities such as Shanghai, located within a few hours' drive (USDA, FAS, 2000a).

Another indicator of China's growing presence in world markets for vegetables and fruits is its trade disputes with a number of importing countries. For example, Japan imposed quotas on leeks and fresh shiitake mushrooms in 2001 in response to rising imports from China. Similarly, following an investigation by the U.S. International Trade Commission of a massive import surge in 1993, the United States imposed anti-dumping duties on garlic from China. The European Union also has restrictions on imports of Chinese garlic.

These and other markets have domestic producers that are sensitive to import competition, and import surges can bring about retaliatory actions that severely limit trade. Now that China has joined the WTO, however, retaliatory action by other members will be subject to the WTO rules.

With these recent experiences in mind, traders and marketers shipping or sourcing from China may modify their marketing strategies to minimize policy changes that adversely affect trade. For example, when a U.S. anti-dumping investigation on apple juice was underway, China's apple juice producers met in 1999 to reportedly establish price floors to avoid similar problems in other markets. Based on trade data, unit values (prices) appear to have generally exceeded price floors, and in 2000 and 2001 quantity and value of total apple juice exports from China increased, compared with 1999.

Another sign of a potential change in marketing strategy involves China's exports to the United States of fresh onions, which have increased from essentially zero in the early 1990s to very modest levels in recent years. This pattern contrasts with sharp rises in the past for other products (e.g., garlic). While these shipments are not sufficient to affect the overall U.S. market, they are enough to draw attention to a potential competitor.

China's Rapid Import Growth Since the Early 1990s

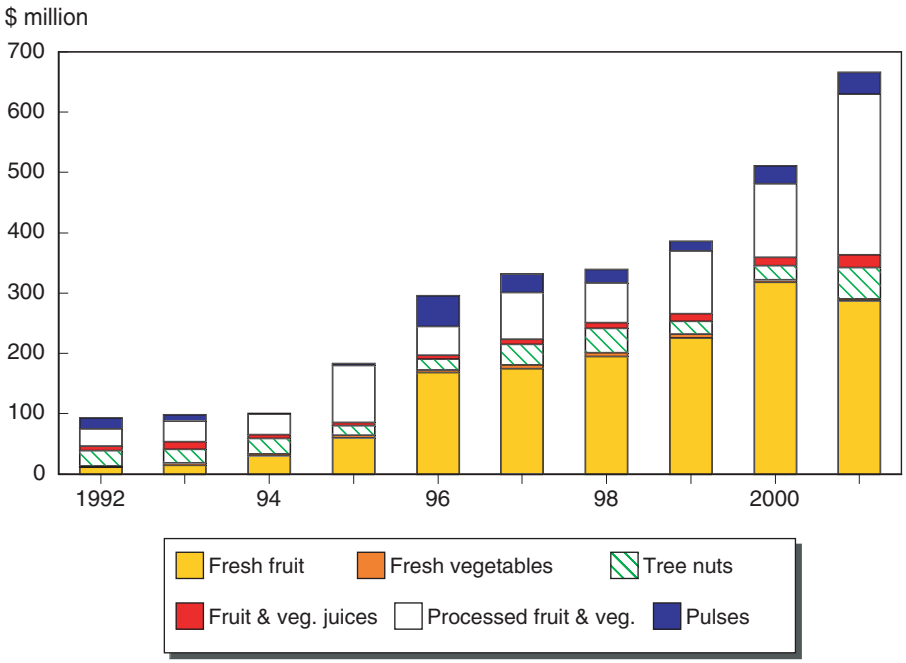
China's fruit and vegetable import market has been dynamic, increasing from less than $100 million in 1992 to more than $600 million in 2001 (fig. 6.3). Fresh fruit accounts for more than half of total imports, with processed products (including juices) accounting for one-third. Pulses, nuts, and fresh vegetables make up the balance. China imports produce mostly from Asia, United States, and South America (table 6.1 and fig. 6.4).

Total imports would have been greater in the absence of China's import tariffs, which were 30 or 40 percent for most fresh fruits and vegetables before China joined the WTO. Now that China is a WTO member, ad valorem duties in 2004 are 10 percent for apples and pears, 13 percent for grapes, and 12 percent for fresh citrus. Tariffs for most processed fruits and vegetables have also declined (USDA, FAS, 2001b; 2001c; 2002).

Underlying the rapid growth of imports is rising demand for a number of fresh fruits, including bananas (49 percent of fresh fruit imports during 1999-2001), grapes (11 percent), oranges (7 percent), and apples (5 percent). China produces all of these fruits, but the volume of high-quality products is not enough to satisfy growing demand, primarily in urban areas where incomes are rapidly rising.

Figure 6.3

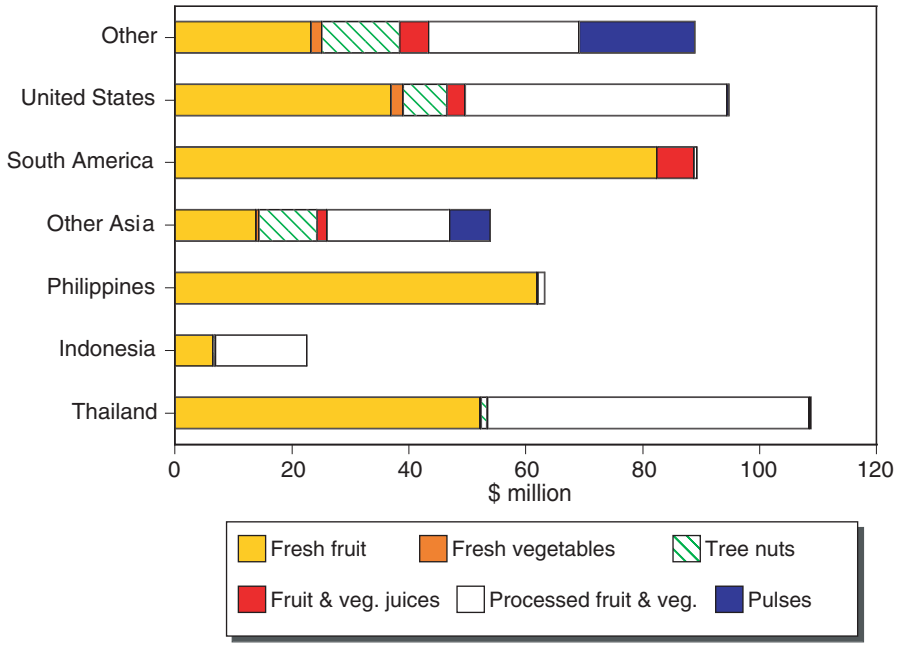
China's fruit and vegetable imports grew rapidly



Source: USDA, FAS Global Agricultural Trade System.

Figure 6.4

China fruit and vegetable imports, average 1999-2001



Source: USDA, FAS Global Agricultural Trade System.

Banana imports grew fairly quickly in the 1990s. Major banana suppliers include Latin American producers (Ecuador, and to a much lesser extent Colombia and Costa Rica) and Southeast Asia (the Philippines, and to a smaller degree, Indonesia, Vietnam, and Thailand).

In contrast, significant growth in other fresh fruit imports has occurred only since 1998. Grape imports grew from less than $3 million in 1998 to $34 million in 2001. Although the United States remains the largest supplier of fresh grapes, Chile is gaining a market share during the offpeak portion (January-April) of the U.S. shipping season, much like the shift that occurred in the U.S. market in the 1980s and 1990s. The U.S. shipping season corresponds with China's, so U.S. and Chinese grapes come into direct competition.

Fresh apple imports have seen somewhat slower growth—from less than $3 million in 1998 to about $17 million in 2001. The United States and New Zealand are the leading suppliers. Chile, the only other significant supplier, is a distant third. Some domestically produced high-quality apples previously expected to be marketed overseas (e.g., to Southeast Asia) are finding their way into Chinese markets because urban demand is strong.

China has historically barred orange imports for phytosanitary reasons. But this changed when the Agreement of U.S.-China Agricultural Cooperation went into effect in early 2000, paving the way for direct importation of U.S. citrus and other commodities (meat, poultry products, and wheat). The first direct shipment of U.S. oranges arrived in China in April 2000, although fresh oranges from California had been entering the country for many years, mostly through the "gray market" import channel (discussed below under the next heading). Foreign shippers now have direct access to large central and northern coastal cities. The quality difference between foreign and Chinese domestic products is substantial, and improving domestic quality through investment in cold storage and other marketing technologies will take time.

Official statistics reported $25 million in total fresh orange imports in 2001, up from just $1 million in 1998. The United States is a major supplier, accounting for over half of the market during 1999-2001. China harvests most of its citrus (mainly tangerines) in November and December, although some producers are reportedly switching to more late-harvest varieties. The limited post-harvest marketing practices—and inadequate cold storage facilities—currently result in import opportunities during the rest of the year. In addition, similar opportunities exist year-round for other varieties of citrus.

Processed fruit and vegetable imports (excluding juices) grew from less than $30 million in 1992 to more than $250 million in 2001. Major suppliers include Thailand, the United States, and other Southeast Asian countries. China's major imports from these Asian countries are manioc (cassava), mainly from Thailand, and a wide variety of prepared, preserved, or frozen vegetables and fruit mixtures from other Southeast Asian countries such as Indonesia and Vietnam. The United States ranks as the number two supplier overall, shipping mostly prepared frozen potatoes (mainly french fries), prepared or preserved potatoes (not frozen), and frozen sweet corn.

The juice import market is also undergoing rapid expansion, more than trebling since 1996 to nearly $22 million in 2001. Frozen orange juice is the leading product, accounting for more than half of juice sales. Brazil is the leading supplier, with nearly two-thirds of the market, while the remaining third is divided mostly between the United States and Israel. Frozen orange juice comprises nearly all of Brazil's shipments. Most of U.S. sales are orange juice, but other juices—including grape, vegetable, and grapefruit—are gaining ground.

Continued gains in juice imports depend on China's development of its domestic production capacity. The country is a large net exporter of juice, and production has expanded along with rising fruit output (e.g., apples). Overall juice consumption is relatively low, partly because cold beverages have become popular only recently (USDA, FAS, GAIN CH9630, 1999).

The import market for many fruits and vegetables is just beginning to take off. Suppliers are establishing positions in markets and building trading and customer relationships. As with any product or market, firms tend to maintain a competitive advantage if they enter markets early and demonstrate the capacity to deliver a high-quality product on a consistent basis.

Changes in Marketing Channels Encourage China's Imports and Exports

Developments in shipping are making China's vegetables and fruits more competitive in international markets. At the same time, these changes are reducing costs of shipping foreign products into China's domestic markets. Improvements in China's ports mean that imported fruits and vegetables can increasingly arrive in better condition and at lower prices than when transported overland from Hong Kong.

As a major transportation hub, financial center, and "free port," Hong Kong has long been a focal point for China's fruit and vegetable trade. As late as 1999, a relatively large share of Hong Kong's fresh fruit imports from the United States, for example, was re-exported to China: 46 percent of apples, 23 percent of grapes, and 19 percent of oranges (USDA, FAS, 2000b). Many distributors of imported fruit in China's major cities have business ties with Hong Kong firms.

Fruit and vegetable shipments to Hong Kong pass through one of two wholesale markets. Vessels are unloaded in the center of the harbor and tugboats transport products to the docks. Containers are also transferred directly onto smaller vessels for shipping to other ports in China.

Produce arrives from all over the world: expensive pears from Japan; U.S. Red Delicious apples; Florida grapefruit; California oranges; Chinese Fuji apples; California Red Globe grapes; Chinese ponkan (a tangerine variety) from Guangdong and Guangxi; and Taiwanese ponkan. Chinese vegetables are also plentiful in Hong Kong wholesale markets, but most products are displayed with little or no packaging (e.g., in big baskets). Other vegetable imports include onions from Oregon and Washington, U.S. celery, carrots from Australia, okra from Singapore (by airfreight), and potatoes from Holland.

Shipments into China via Hong Kong generally go by one of three ways: through official trade with duties paid (small volume), smuggling to Chinese ports (small volume), or "gray channel" (large volume). Gray channel trade is documented and declared in some way, but "transportation" companies handle the product for a fixed fee to see that it passes through checkpoints. One major benefit of WTO accession is legitimization of this process that would make it less volatile—there are occasional government crackdowns against it (Ferris, 2000).

A large portion of gray channel trade is handled by the Nanhai Lishui wholesale market (and the Huadu market, to a lesser extent) in Guangdong province, adjacent to Hong Kong. The market, supported by the provincial and municipal governments, accounted for an estimated 75 percent of China's fresh fruit imports in 2000. Trucks arrive from all over China to pick up produce and transport it to wholesale markets throughout the southern region of the mainland, as well as to markets in Xi'an in central China, Qingdao on the east coast, and as far north as Beijing (all requiring at least a 2-day drive). The principal buyers of this fruit are supermarkets, hotels, restaurants, and small retailers, mainly individuals who sell fruit at kiosks and on the street.

While Hong Kong remains a key gateway for fruit and vegetable trade between China and the rest of the world, North China ports are becoming more attractive destinations. With expanded capacity, ports in Shanghai, Dalian, Xingang, and Qingdao are picking up volume as their costs have become competitive. The cost of shipping a container in 2000 directly to Dalian from Hong Kong, for example, was about 25 percent less than shipping it through Guangdong. Fees for transport and handling through the gray channel will adjust downward as legal channels develop and official tariff levels decline—and as a greater share of China's imports of fruits and vegetables shifts from shipments through Hong Kong to direct imports into North China ports, at lower costs to shippers and consumers.

Shipping patterns to China are indeed shifting, evident in the final destination of U.S. container shipments of fruits and vegetables to Hong Kong and other Chinese ports. The share of volume for China's other ports grew from less than 2 percent of the total in 1997 to more than 9 percent in 2000, with a steady gain each year. Hong Kong is still generally the first port of entry, but direct shipments are increasing rapidly. Shanghai is the leading alternative port, accounting for more than one-third of fruit and vegetable container shipments in 2000 (excluding Hong Kong) (AMS, 2001).

Many of China's ports are undergoing significant expansion to handle growing trade of all products, not just fruits and vegetables. Besides investing in infrastructure (e.g., cranes), ports are buying logistical systems to maximize throughput and shorten dock time to just 12-18 hours for the largest vessels. The skills of port operators and laborers are also being upgraded (Caron, 2001; Chan, 2001).

Most fruits and vegetables (fresh and processed) are shipped in refrigerated containers, which are usually transported a short distance inland by truck. The product is then transferred to other trucks for transport to its final destination in the country (Caron, 2001).

Another longer term benefit of WTO accession is likely to be new provisions for financing that encourage more direct shipments. Historically, private traders have been prohibited from opening letters of credit and must engage a state trading enterprise to help finance fruit and vegetable trade.

China's Prospects for Trade Growth

The lack of government involvement in marketing and pricing of fruits and vegetables has resulted in an integrated national market in China for a number of years. Price signals are readily transmitted across the country and throughout production and marketing chains, as evidenced by a price analysis conducted in 1996 (The World Bank, 1996). In the last decade, a large number of private distributors emerged, purchasing fruits and vegetables in regions of abundant supply and selling them in deficit regions.

With market information generally available across the country, many domestic producers and processors became aware of the same demand and set their sights on the same markets. Consequently, prospects for China's imports and exports of fruits and vegetables depend heavily on developments in the domestic market, namely, on how domestic supplies of high-quality fresh and processed products grow in response to market incentives within China. Supplies of most vegetables and fruits have expanded in the last two decades, particularly in the 1990s, because these crops have generally provided higher returns than field crops. While quality of the domestic product has improved during this time, most growers and marketers still focus on volume because consumers purchase by weight, not by the "piece" as in high-priced markets like Hong Kong (Ng, 2001).

Market incentives and demand in China are shaped by the usual factors, including growth in income and population. China's population is growing at about 1 percent annually (1991-2001 average), or nearly 12 million per year. Meanwhile, inflation-adjusted income per urban resident more than doubled from 1990 to 2001 (National Bureau of Statistics of China, 2002). The effect of higher incomes is particularly strong for fruit consumption, with expenditures increasing 1.58 percent for a 1-percent gain in income. In addition, expenditures on fruit by urban residents in the top 10-percent income bracket are twice the expenditures of those in the bottom 10 percent (The World Bank, 1996).

With a growing population and rising incomes pushing up demand, overall consumption of vegetables (excluding potatoes) and fruit has increased. For example, according to China's urban household survey, fruit consumption increased more than 25 percent during 1990-2001 (National Bureau of Statistics of China, 2002). Vegetables are an important part of many meals. Fruit is consumed in much smaller quantities, as part of a meal or as a snack, or purchased for gifts during Chinese New Year or other holidays. Overall supplies have generally kept up with demand in recent years, keeping price levels in check.

Over the next 5 years, supplies of fruits and vegetables may continue to grow faster than demand if planting incentives remain favorable relative to other crops. Although fruit and vegetable prices have been declining, field crop prices have been under even greater pressure in recent years as

domestic policies encouraged grain production. The field crop sector may be under additional price pressure from imports following China's accession to the WTO, which prohibits subsidized grain exports and curbs government policies that favor grain output.

China's vegetable and fruit export prospects are bolstered by relatively low costs of production, which are reflected in wholesale prices (costs-of-production data are not available for comparison.) In Beijing, for example, wholesale prices for fruits and vegetables are only one-tenth to one-third the level of prices in other countries. However, higher production and marketing costs associated with delivering high-quality produce can reduce the cost advantage implied by wholesale prices. Nevertheless, many private firms, including foreign investors who are taking advantage of China's low input costs (particularly labor), are expanding vegetable and fruit output and boosting overseas shipments. For example, an investor from Singapore recently built a large greenhouse/packing facility west of Qingdao (Shangdong Province in eastern China) to ship spinach, lettuce, melons, and celery to Japan and Singapore (Shields and Tuan, 2001).

Given this simple wholesale price comparison, it seems likely China will expand vegetable and fruit exports. However, several factors will dampen prospective export gains in the near term while encouraging imports. First, China currently offers only a few varieties of fruits and vegetables in large volume for the export market. High-quality products are available (e.g., fresh vegetables in Shandong), but volume is limited and generally predestined for a particular market (such as Singapore) where demand is considered sufficient to support an operation.

Second, the vegetable and fruit industry does not, in general, use grade standards (e.g., for uniform product size and appearance), which are essential for international trade. Some producing areas employ their own sizing standards, and nationally mandated standards for citrus are primarily concerned with size and not quality (USDA, FAS, 2000c). The lack of widespread use of grade standards will continue to encourage imports and dampen exports, although a number of private firms successfully export fresh and processed products based on customer specifications

Third, China does not make widespread use of basic marketing practices, such as modern packing and packaging techniques. The ample supply of labor (and associated low cost) slows adoption of capital improvements that would improve produce quality. In China's fresh deciduous fruit industry, for example, many distributors store fruit in ambient air, including in unimproved underground storage pits, which can lead to deterioration (USDA, FAS, 2000a).

Prospects for imports depend heavily upon: (1) market strength for vegetables and fruits not currently produced on a large scale in China, and (2) how domestic supplies change to meet that demand. Grapefruit, for example, is available primarily through imports. Should domestic citrus producers foresee a profit, some may establish additional grapefruit groves, affecting demand for the U.S. product. China currently produces a "Barbarian" grapefruit (Wu-Yu) in Zhejiang province, providing some domestic competition for Florida grapefruit (Ng, 2001).

Will China become a major competitor or will it become a significant market for U.S. vegetable and fruit producers? The answer is yes for both. Over the last decade, international competition from China is already a significant issue for U.S. producers of commodities such as garlic, apple juice, and walnuts. More commodities will likely be added to the list as investments in processing facilities continue to increase and firms take advantage of China's relatively low costs of labor needed to grow, harvest, and process products requiring special handling.

Moreover, the quality gap between Chinese and foreign products in international markets may well be closing. This means producers with higher costs will need to compete on the basis of reliability, consistency of product, service, and other nonprice factors. In markets like Japan, a U.S. brand name is valued and is often a significant selling point. It remains to be seen if Chinese products can achieve similar recognition.

While some fruits and vegetables from China, such as apples, are already very competitive in the Hong Kong market, they are a factor only immediately after the harvest season because China lacks cold storage and marketing capabilities. For grapes, pears, peaches, lettuce and tomatoes, some importers expect that it will be a few years before Chinese products can be competitive.

As for China as an import market, U.S. exports to China of products such as fruit juice and fresh citrus are rising and appear to be gaining a foothold. This is due in part to limited availability of domestic fruit during late spring/early summer. In the near term, growing demand, along with shortcomings in China's marketing and distribution system, will likely result in rising vegetable and fruit imports.