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China's Exports Outpaced Imports During WTO Year One

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Abstract

Many analysts predict that China will become a larger importer of agricultural products following its accession to the World Trade Organization (WTO). However, during 2002, its first year as a WTO member, China actually became a larger net exporter of agricultural products. China provided incentives to encourage corn exports, and soybean imports were interrupted by uncertainty over China's biotechnology regulations. Grain imports were minimal during 2002 due to tight world supplies that pushed the delivered price of imports above China's domestic grain prices. China's exports of horticultural crops accelerated, but its poultry exports were hurt by concerns about disease and antibiotic residues. Historically, U.S. exports of bulk commodities to China have seen wide year-to-year swings. Sales of grain and cotton to China have been on the downswing since 1998. However, steady growth in purchases of consumer-oriented products since the early 1990s has made China a larger, more stable market for U.S. agricultural products.

Keywords: International trade, agriculture, policy, China, imports, exports, WTO, statistics, soybeans, vegetables, corn, cotton, tariff rate quota.

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Introduction

China's long-anticipated accession to the World Trade Organization (WTO), effective in December 2001, is expected to give a further boost to China's export-oriented manufacturing sector and attract much-needed foreign capital and technology. China's agricultural sector, however, is expected to have difficulty competing in a more liberalized trade environment. Many analysts have predicted that China's WTO commitments to cut tariffs, to reduce the role of state trading monopolies, and to streamline regulations will open China's market to greater imports of agricultural products. Its commitment to eliminate export subsidies is expected to make its exports of corn and other grain less competitive on world markets. For example, Lohmar, Hansen, Hsu, and Seeley estimated that China's WTO commitments would lead to greater imports of wheat, soybeans, soy oil, and corn and would reduce corn exports. Several prominent Chinese scholars predicted that WTO accession would have severe adverse impacts on China's farmers (Fewsmith, pp. 580-81).

During its first year as a WTO member, China actually became a larger net exporter of agricultural products. Its exports surged by 13.3 percent while its agricultural imports rose by a modest 3.5 percent during calendar year 2002.¹ China's \$1.5-billion rise in agricultural exports exceeded its \$369-million increase in agricultural imports by more than \$1 billion (fig. 1), boosting its trade surplus in agricultural products to \$2.25 billion during calendar year 2002.

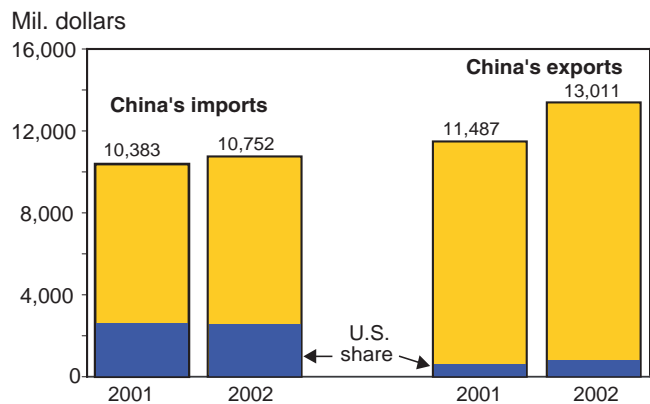
The United States had a \$1-billion agricultural trade surplus with China during 2002, and China was the fifth-largest U.S. export market. In bilateral U.S.-China trade, agricultural imports and exports both grew during 2002. U.S. agricultural exports to China for calendar year 2002 were \$2.07 billion, up \$128 million from the previous year (fig. 2). U.S. agricultural imports from China rose by \$185 million (23 percent), and exceeded \$1 billion for the first time.²

¹Based on the USDA definition of agricultural trade, which excludes fish, seafood, forest products, and manufactured products such as textiles and fruit juices. Data are derived from Chinese customs statistics and include only direct U.S.-China trade. Trans-shipments through third countries or territories are not included.

²Data for bilateral U.S.-China trade are derived from U.S. Bureau of the Census statistics, while estimates of total China trade are derived from Chinese customs statistics (see note for figure 1). Some U.S. exports to China are shipped through Hong Kong, but they are not included in the totals here. U.S. agricultural exports to Hong Kong totaled \$1.09 billion during 2002. Hong Kong and China combined accounted for \$3 billion in U.S. agricultural exports during 2002.

U.S. agricultural exports to China during 2002 had grown to more than double their value in the early 1990s, but were below the \$2.6-billion record set in 1995 (fig. 2). The \$185-million increase in agricultural imports from China during 2002 was three times the average annual increase of \$54 million recording during the 1990s.

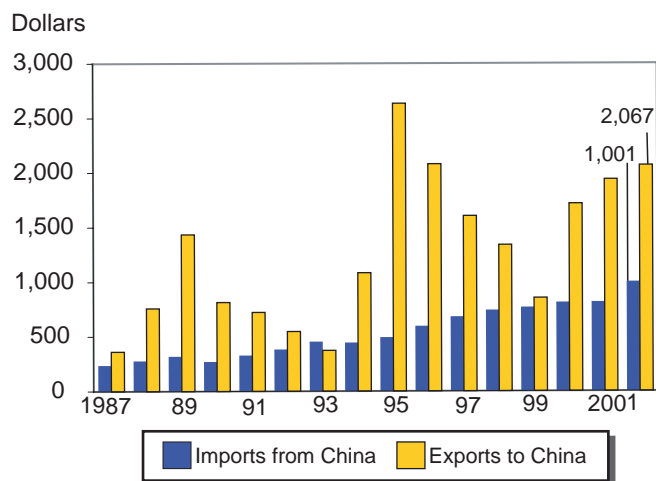
Figure 1
China agricultural trade, 2001-2002



Note: Calendar year data. Agricultural trade is defined according to the USDA, FATUS definition, <http://www.ers.usda.gov/data/fatus/>. It excludes fish, forest, and textile products. These data do not include trade with Hong Kong or Macau. These data are derived from China customs statistics and differ from U.S. statistics on China-U.S. trade due to inclusion or exclusion of transportation costs, differing practices for counting transshipments of goods through third countries or territories, smuggling, under-invoicing of imports, and declaration of products from third countries as U.S. products to circumvent country-specific quotas or import bans.

Source: ERS analysis of World Trade Atlas data based on China customs statistics.

Figure 2
U.S. agricultural trade with China, 1987-2002



Notes: Calendar year data. Does not include trade with Hong Kong. Source: USDA.

Bigger Grain Exports, Smaller Oilseed Imports

Increased exports of corn and horticultural products (vegetables, fruits, nuts, and their products) accounted for over \$1 billion of China's \$1.5 billion increase in agricultural exports during 2002 (table 1). Corn exports were expected to fall after China's WTO accession, due to elimination of export subsidies. Instead, corn exports reached a record 11.7 million tons during calendar year 2002. Corn exports increased by \$542 million during 2002, the largest increase of any commodity. Exports of vegetables and fruit (including preserved and processed products), mainly to other Asian countries, increased \$498 million. The increase in horticultural exports was led by a \$137-million increase in garlic exports, with smaller increases occurring for a range of fruits, mushrooms, tomatoes, and processed vegetables. Exports of soymeal, a byproduct of China's rapidly growing soybean crushing industry, were up \$132 million. The increase in exports suggests that soymeal production has outpaced its domestic use as animal feed.

China's \$369-million net increase in agricultural imports obscures large offsetting changes in imports of

oilseeds and vegetable oils. Imports of soybeans and rapeseed were down by a combined \$554 million in 2002, but they still accounted for nearly one-fourth of agricultural imports. The decline in oilseed imports was more than offset by an \$807-million increase in vegetable oil imports (palm and soybean oil).

In bilateral U.S.-China agricultural trade, U.S. exports of major commodities were fairly stable. Soybean exports, which account for more than half of U.S. agricultural exports to China, were down by 575,000 tons and were valued at just under \$1 billion in calendar year 2002. U.S. cotton exports rose by \$95 million but were still modest by historical standards (table 2). Export growth was relatively modest for other commodities. China's growing imports of vegetable oil did not benefit U.S. exporters since the United States does not produce palm oil and contributed only 2 percent of China's soybean oil imports. The increase in U.S. agricultural imports from China consisted mainly of vegetables, fruits, nuts, and meat products. There was relatively little change in U.S. imports of other agricultural commodities.

Table 1—Change in China's agricultural trade, by major commodity, 2001-02

Export commodities	Change	Import commodities	Change
	<i>Million dollars</i>		<i>Million dollars</i>
Change in agricultural exports	+1,524	Change in agricultural imports	+369
Commodities with export increases		Commodities with import increases	
Corn	+542	Palm oil	+423
Vegetables, fruit, and nuts	+498	Soybean oil	+384
Soybean meal	+132	Cotton	+108
Pork, fresh or frozen	+74	Rubber	+102
Sugar and confections	+71	Dairy, eggs, honey	+53
Food ingredients and preparations	+60	Baking related	+50
Rice	+52		
Commodities with export decreases		Commodities with import decreases	
Poultry meat and offal	-196	Soybeans	-327
		Rapeseed	-227
		Sugar	-96
		Barley	-91
Other commodities	+291	Other commodities	-10

Note: Table shows changes between calendar years 2002 and 2001.

Source: Analysis of World Trade Atlas data derived from China customs statistics.

Table 2—Change in U.S. agricultural trade with China, by commodity, 2001-02

Export commodities	Change	Import commodities	Change
	<i>Million dollars</i>		<i>Million dollars</i>
Change in U.S. agricultural exports to China	+129	Change in U.S. agricultural imports from China	+185
Commodities with export increases		Commodities with import increases	
Cotton	+95	Vegetable, fruits, and nuts	+96
		Meat and meat preparations	+83
Commodities with export decreases		Commodities with import decreases	
Soybeans	-17	Dairy, eggs, honey	-8
Other commodities	+51	Other commodities	+14

Note: Table shows changes between calendar years 2002 and 2001.

Source: Analysis of USDA, Foreign Agricultural Service data derived from U.S. Bureau of the Census statistics.

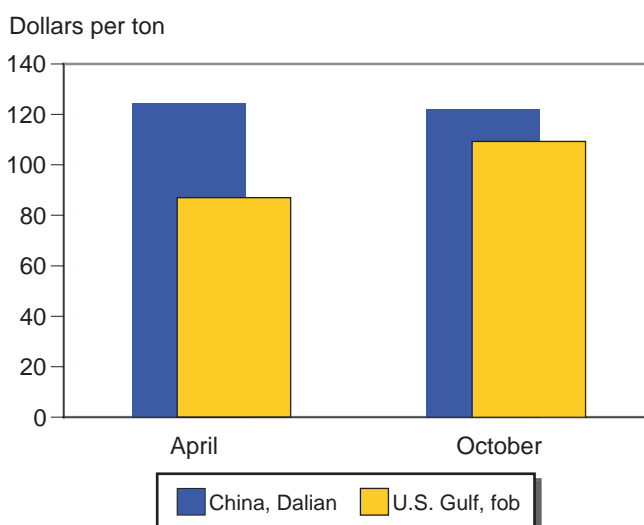
Market Conditions Worked Against Grain Imports

A combination of market conditions and policy measures contributed to China's robust exports and weak import growth during 2002. An increase in world grain prices during 2002 kept China's grain imports minimal. In April 2002, the corn price in southern China was about 40 percent above the U.S. Gulf price (fig. 3). By August, the U.S. Gulf price had risen by 27 percent as it became clear that drought in U.S. production regions, Canada, and other countries would reduce world supplies. In late December, U.S. corn arriving at southern China ports was priced at \$133-\$134 per ton, including freight. According to reports by China National Grain and Oils Information Center, taxes and unloading costs pushed the cost to \$162 per ton, reportedly \$18 above the cost of domestic corn.

The smaller differential between domestic and world prices also improved the competitiveness of China's corn and wheat exports, which normally require generous government subsidies. Corn exports accelerated to a rate of 1 million tons per month in August 2002, after world prices rose, and continued at this pace through the remainder of 2002 and into 2003. China, normally a wheat importer, also increased its wheat exports. China exported milling-quality wheat to Southeast Asia and was, for the first time, a net exporter of wheat during calendar year 2002.

Domestic market conditions also were important factors in China's agricultural trade. An overhang of excessive grain and cotton stocks built up during the 1990s is a major factor that has affected its agricultural trade since 1998. Policymakers in China have sought to encourage exports, limit imports, and reduce fees for transportation of grain from production regions in

Figure 3
**China-U.S. corn price comparison,
April and October 2002**



Sources: Economic Research Service and China National Grain and Oils Information Center.

the north to consuming areas in the south in order to draw down domestic grain stocks. Grain and cotton auctions have been held to dispose of inventories that could not be sold at market prices. China does not publish information on grain stocks, but estimates of grain and cotton use have exceeded supply for several years, suggesting that stocks have been reduced considerably. In early 2003, officials in China still reported that grain stocks were large, but stable-to-rising domestic prices indicated that stocks may have been tightening.

Tariff Rate Quotas Not Filled

Many analysts expected China's new tariff rate quota (TRQ) system to boost imports of key commodities (rice, wheat, corn, cotton, wool, vegetable oil, and sugar) whose trade was tightly controlled by government-operated state trading enterprises before WTO accession. China's WTO agreement set quotas for imports at tariffs as low as 1 percent (U.S. Department of Agriculture, Economic Research Service). China was not required to fill these quotas, but imports of commodities under TRQs were expected to rise due to the combined effects of low tariffs and extension of importing rights to all potential end users.

The TRQ system did little to boost imports during 2002, as the quotas were largely unused (table 3).³ China's imports of wheat, corn, rice, and rapeseed oil amounted to less than 10 percent of their respective quotas. Cotton imports were about one-fifth, and soybean oil imports were about one-third of their quota. Palm oil was the only commodity whose quota was nearly filled. The sugar quota was about two-thirds filled, and wool imports were over 70 percent of their quota. In total, imports of agricultural commodities under TRQs amounted to 20.8 percent of the quotas set for 2002. Imports of TRQ commodities were par-

ticularly disappointing for U.S. exporters. China imported minimal amounts of corn, cotton, and wheat, the products for which the United States is competitive in the China market. China's largest TRQ imports, palm oil and sugar, are not supplied by the United States in significant amounts.

The lack of wheat, corn, and rice imports was, in part, due to world market conditions that made imports uneconomic during the latter half of 2002 (as discussed above). However, China's administration of the TRQs also may have kept quotas from being used. The allocation of quotas to importers was delayed until March 2002, so imports could not take place during the early part of the year before world prices increased. The government has revealed very little information about how it allocated TRQs to end-users, but reports indicate that the number of applicants for wheat and corn TRQs was large. Consequently, most applicants received only a small allocation that was not large enough to fill an ocean-going container ship. It is likely that nearly all end users applied for as much quota as they thought they could use since there was no cost in applying for quota. There are also concerns about multiple bureaucratic layers in the application process. The amount of TRQ commodities allowed to enter the domestic market was further reduced by China's earmarking of a portion of each TRQ for processing and re-export.

³TRQs go unfilled in many other countries as well. The average fill rate for TRQs worldwide in 1999 was 50 percent (U.S. General Accounting Office).

Table 3—China agricultural tariff rate quotas and actual imports, 2002

Commodity	Tariff rate quota ¹	Actual 2002 imports		Fill rate ²	U.S. share of imports
		China total	from U.S.		
		----- 1,000 tons -----		Percent	Percent
Wheat	8,468	632	169	7.5	26
Corn	5,850	8	2	0.1	21
Rice	3,990	238	4	6.0	<1
Soybean oil	2,518	870	20	34.6	2
Rapeseed oil	878	78	<1	8.9	<1
Palm oil	2,400	2,221	<1	92.5	<1
Sugar	1,764	1,184	<1	67.1	<1
Wool	264	192	<1	72.7	<1
Cotton	818	177	91	21.6	51

¹Set by China's WTO accession agreement. ²Actual imports as a percent of tariff rate quota.

Sources: Analysis of World Trade Atlas data and Department of Laws and Regulations of the Customs General Administration of the People's Republic of China.

Policies Protect China's Market

China's agricultural trade was also affected by various policy measures implemented by policymakers to counter the effects of WTO commitments. Most notably, China's corn exports continued in 2002 despite its commitment to eliminate direct export subsidies. The pre-WTO accession corn export subsidy for corn was over \$40 per ton, yet its corn exports actually accelerated from the previous year after the subsidy was supposed to have been eliminated. Chinese corn sales to South Korea and other markets continued in 2002 at prices well below Chinese domestic prices, indicating that export subsidies continued. In early 2003, market-monitoring services in China reported that subsidies for corn exports were still about \$40 per ton during 2002 (China Agricultural Science and Technology Network, FoodChina.com). China introduced tax rebates, transportation fee waivers, and subsidies for storage costs in 2002 to replace the export subsidy (Gale, 2002), but the value of these measures appears to fall short of the \$40 per ton figure.

Soybean imports were disrupted by uncertainty regarding new regulations requiring labeling of foods containing genetically modified organisms (GMO). In June 2001, China issued preliminary regulations, followed by more detailed implementing rules issued in January 2002. The regulations did not clearly specify which products would be covered and how regulations would be enforced. The ensuing uncertainty disrupted imports of soybeans (most of which are grown from GMO varieties in North and South America) for several months until interim arrangements for safety certificate applications were put in place. The GMO regulations were introduced to protect Chinese consumers, but the regulations could be used to control the pace of

imports. The vagueness of the regulations potentially gives government agencies latitude to vary the stringency of their enforcement of the regulations in order to speed up or slow down imports. Some commentators have questioned whether GMO regulations are enforced with equal stringency for domestic and imported products. For example, it is not clear whether labels and safety certificates are required for oil produced from genetically modified domestic cottonseed.

China's value-added tax is also an important policy tool used to control agricultural trade. While Chinese agricultural tariffs are relatively low, most imported products are also assessed a value-added tax (VAT) of 13 percent for raw agricultural commodities like rice, wheat, corn, and soybeans, and 17 percent for processed or manufactured products like soymeal, vegetable oil, and textiles. The VAT is assessed on the delivered price of goods, including the tariff. For example, the effective tax rate on an imported product subject to a 15 percent tariff and a 17 percent value-added tax would be 35 percent. The VAT is also assessed on Chinese products, but some domestic agricultural products are exempt and taxes are frequently avoided by under-invoicing or other means.

China offers rebates of VAT payments for exported grain and soymeal. This practice is an acceptable measure under WTO rules as long as the rebate does not exceed actual tax payments. China also waives the VAT to encourage production of certain commodities. For example, the VAT on soymeal for animal feed was waived for several years in the early 1990s to encourage development of China's livestock industry.

Gradual Reduction in Tariffs

China's agricultural WTO tariff reductions will be phased in over several years. Tariffs on some products were cut significantly in 2002, but overall the 1-year change in tariffs was not that dramatic since the cuts are spread over 3 years. China had already reduced tariffs and government control over trade significantly in the decade leading up to WTO accession. Thus, the impacts of China's WTO accession are spread over the course of many years.

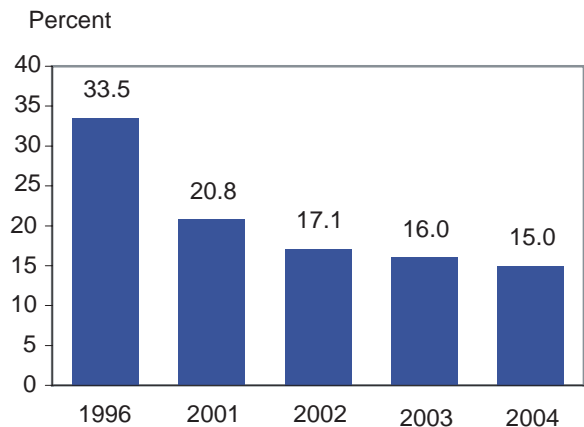
China began liberalizing its trade in non-TRQ commodities—vegetables, fruits, animal products, processed foods, and dairy products—well in advance of WTO accession. China reduced tariffs on over 3,300 items, removed state trading controls on 367 commodities in 1993, and carried out another round of tariff reductions in 1996 (Wailes, Fang, and Tuan). Figure 4 shows the average tariff on non-TRQ agricultural products from 1996 to 2004 (taking into account scheduled tariff reductions for 2003 and 2004). During the 5 years prior to WTO accession, the average tariff on non-TRQ commodities had already fallen from 33.5 percent in 1996 to 20.8 percent in 2001. In 2002 the average tariff was 17.1 percent, so the 2001-02 tariff reduction was an average of just 3.7 percentage points.

Soybeans, for example, were already entering China at low 3-percent tariffs prior to WTO accession and have been China's leading agricultural import in recent years. The value of China's soybean imports reached \$2.8 billion in 2001, accounting for one-fourth of China's agricultural imports. Soybeans were subject to import quotas prior to WTO accession, but unlike

grains, cotton, and vegetable oils, no TRQ was set for soybeans.

China committed to further reduction in tariffs after its December 2001 WTO accession, but the reductions are spread over the 2002-04 period. The average tariff for non-TRQ commodities was 20.8 percent in 2001 (pre-WTO). After WTO accession, the average non-TRQ agricultural tariff fell to 17.1 percent in 2002, to 16 percent in 2003, and is set to fall to 15 percent in 2004 (fig. 4).

Figure 4
**China's average agricultural tariffs
for commodities not under tariff
rate quotas, 1996-2004**



Note: For a definition of "agricultural" commodities, see www.ers.usda.gov/data/fatus/. Figure 4 excludes commodities that were subject to quotas and state-trading prior to WTO accession and is not weighted by trade volume.

Sources: Calculated by ERS using data from Customs General Administration of the People's Republic of China.

China's Consumer-Oriented Exports Booming

Most *a priori* projections of the trade impacts of China's WTO accession focused on prospects for greater imports of bulk commodities, such as grain, cotton, and soybeans. Less attention has been given to China's emergence as a major exporter of consumer-oriented agricultural products, such as vegetables, fruits, meat products, and processed foods. Consumer-oriented products require more labor and less land per unit of output than do most bulk commodities, so they are well suited to China's land-scarce, labor-abundant economy (Wang; Wailes, Fang, and Tuan).

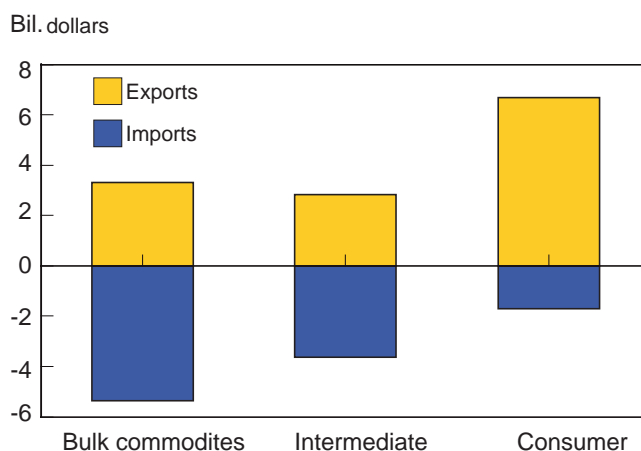
During 2002, consumer-oriented products were the largest component of China's agricultural exports, totaling \$6.7 billion and accounting for over 60 percent of all agricultural exports (fig. 5). Vegetables, fruits, and nuts accounted for nearly \$500 million of the \$1.5 billion increase in agricultural exports during 2002. China's horticultural, poultry, meat, and seafood (not included in USDA's definition of agricultural trade) exports to Japan, Russia, other Asian, European, and Middle Eastern countries have been rising rapidly in recent years due to their low cost and increasing production. Consumer-oriented agricultural exports rose 13 percent during 2001 and 8.5 percent during 2002.

China's consumer-oriented export growth has been slowed during recent years as trade partners raised concerns about the sanitation and safety of its products. Poultry exports were down \$196 million during 2002, as the industry encountered sanitary barriers overseas. The European Union banned Chinese meat and aquatic products in January 2002, due to concerns about drug residues. Japan also tightened its inspection requirements for meat from China and banned its poultry imports due to a disease outbreak. Japanese inspectors also rejected some vegetables from China for excessive chemical residues. Sanitary and phytosanitary barriers have thus become an important constraint on growth of China's exports.

Bulk commodities were the largest component of China's agricultural imports (\$5.4 billion during 2002),

Figure 5

China agricultural trade, by commodity type, 2002



Source: Analysis of World Trade Atlas data derived from China customs statistics.

consistent with China's land-scarce resource endowment. However, China was also a major exporter of bulk commodities (\$3.3 billion). Corn accounted for about half of bulk exports, while soybeans accounted for over 40 percent of bulk imports. Domestic soybean production has not been able to keep up with rapidly growing demand, so China now relies on imports for roughly half of its soybean use. China has encouraged exports of corn to South Korea and other Asian markets to dispose of surplus corn production from its northeastern provinces. Northeastern farmers have China's lowest corn production costs and few profitable alternatives to corn growing, but transporting corn to potential customers in southern China is costly. China's imports of cotton, another bulk commodity, are expected to grow as its textile industry expands.

China is both an importer and an exporter of partially processed intermediate commodities. It imports hides and skins for use in its footwear and leather product manufacturing industries, as well as vegetable oils and a number of non-meat animal products. China is also a major exporter of silk and soymeal.

U.S. Bulk Exports to China Hard to Predict

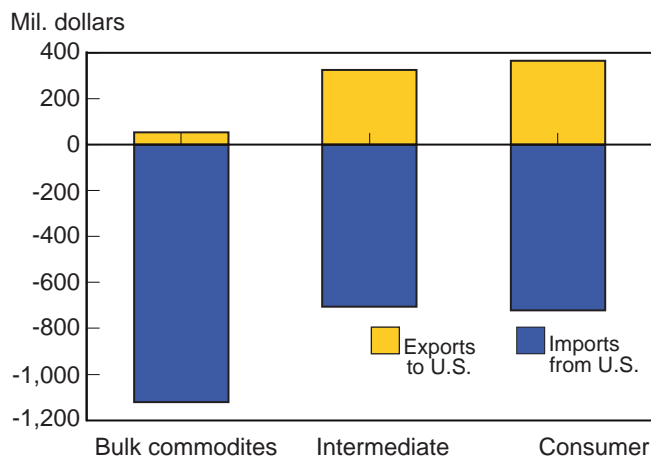
China is a net importer from the United States of all three categories of agricultural products: bulk, intermediate, and consumer-oriented (fig. 6). The United States, with an abundant endowment of land and a highly efficient crop production sector, supplies about one-fifth of China's bulk commodity imports (primarily soybeans during 2002).

Historically, bulk commodities have accounted for most U.S. agricultural exports to China. During 2002, for example, soybeans alone accounted for 45 percent of U.S. agricultural exports to China. In earlier years, China was an important destination for U.S. cotton, wheat, and—in some years—corn. Bulk exports to China show wide year-to-year swings and are therefore difficult to predict. From 1989 to 2002, bulk exports averaged about \$1 billion annually, but were as high as \$2 billion during 1995 and were less than \$500 million during 4 years (fig. 7). U.S. wheat exports to China reached 3.6 million tons during calendar year 1995, but fell to less than 300,000 tons 2 years later in 1997. Cotton exports to China fell from 486,000 tons in 1995 to 95,000 tons in 1998. U.S. coarse grain exports to China exceeded 5 million tons in 1995, but fell to 108,000 tons the following year.

The composition of bulk exports to China has also varied. Wheat and cotton were the primary bulk exports until 1996, but wheat exports have been minimal since

Figure 6

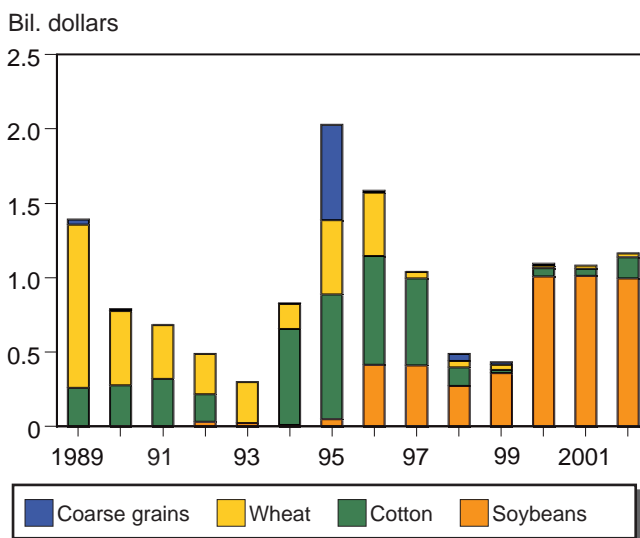
China-U.S. agricultural trade, by commodity type, 2002



Source: Analysis of World Trade Atlas data derived from China customs statistics.

Figure 7

U.S. exports of bulk commodities to China, 1989-2002



Source: USDA.

1996 and cotton exports have not reached \$150 million since 1997. Exports of coarse grains to China were \$638 million during 1995, but were \$15 million or less in most other years. The United States exported significant quantities of soybeans to China for the first time in 1996 and soybeans accounted for most U.S. bulk exports to China from 1998 through 2002.

Policy decisions account for much of the volatility in China's grain and cotton trade since imports of these commodities remained under tight government control until WTO accession. China's imports of grain and cotton have been well below historical levels since 1998, as policymakers sought to dispose of excess grain and cotton stocks accumulated during the mid-1990s. The failure of grain and cotton imports to rebound and the policy-induced disruption of soybean trade during 2002 shows that bulk commodity trade with China is still difficult to predict.

U.S. exports of intermediate products (hides and skins, fats and oils, animals, animal feeds, and sweeteners) and consumer-oriented products (vegetables, fruits, meats, dairy, processed foods, and beverages) to China have grown in importance since the early 1990s. Exports of intermediate products to China grew from \$22 million in 1990 to over \$680 million during 2002. Intermediate and consumer-oriented products com-

bined were 45 percent of U.S. agricultural exports to China during 2002, up from less than 5 percent in 1990.

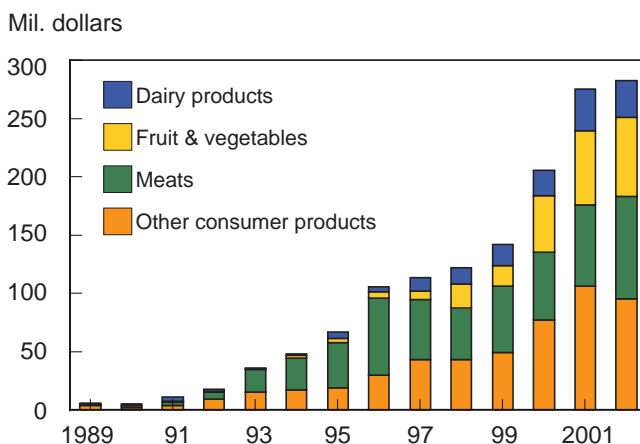
China was the fifth-largest market for U.S. intermediate agricultural products during 2002. China's intermediate imports boomed in the early 1990s when it began to import large quantities of soy oil and soy meal. Intermediate exports to China peaked at over \$700 million during 1998 and fell in subsequent years as China shifted its imports from soy oil and meal to raw soybeans. U.S. exports of hides and skins for use in China's leather product manufacturing industry have also grown rapidly. Hides and skins constituted over 60 percent of U.S. intermediate exports to China in 2002. Exports of planting seeds, other oils and fats have also grown.

Historically, consumer-oriented U.S. exports to China have been low due to a combination of relatively low incomes in China, high tariffs and other trade barriers, lack of market infrastructure, and plentiful domestic supplies. However, in the last decade China has shown signs of becoming a major market for U.S. exports of consumer-oriented products. China's consumer-oriented imports from all countries rose from \$470 million in 1996 (Wang) to \$1.7 billion during 2002. From 1990 to 2002, U.S. exports of consumer-oriented products to China rose from \$5 million to over \$280 million (fig. 8). China was the 11th-largest market for U.S. consumer-oriented agricultural products during 2002, up from 66th-largest in 1990.⁴ Growth has occurred for a variety of different products, including poultry, red meat, offal, dairy products, grapes, apples, and snack

⁴China's imports of consumer-oriented food products have frequently been transshipped through Hong Kong to southern China to avoid high tariffs and bureaucratic barriers. Some reports say that these "gray market" shipments have declined during the last several years as tariffs and other trade barriers have fallen. It is possible that the increased direct exports to China may partially reflect diversion of shipments from "gray market" shipments to official exports to China.

Figure 8

U.S. consumer-oriented agricultural exports to China, by commodity, 1990-2002



Source: USDA.

foods. China's rising imports of consumer-oriented products reflects rising living standards, declining tariffs for non-staple foods, and the emergence of China as a major market for food products. Consumption of imported fruits, meats, dairy products, and processed foods is currently limited to a relatively high-income market segment, mostly in coastal cities and provincial capitals. Demand for imported consumer-oriented foods is likely to continue growing as tariffs fall further. Improvements in refrigerated storage facilities, better transportation infrastructure, growth of modern supermarkets, and rising living standards in smaller cities and rural areas will also boost growth.

The growth in consumer-oriented and intermediate exports will add to China's importance as an export market. Reduced reliance on bulk commodity exports may increase the stability of U.S. exports to China. Trade in consumer-oriented and intermediate commodities is less volatile than trade in bulk commodities, in that they are less influenced by weather-related supply shocks and inventory changes.

Outlook for China's Agricultural Trade

China's agricultural imports and exports are both likely to grow in coming years. Strong income growth and rapid urbanization in China will increase demand for food products, generating demand for imports. The rapid growth of its manufacturing industries will also generate demand for industrial inputs like cotton, animal hides, rubber, and food ingredients. At the same time, China will become an increasingly important source of inexpensive vegetables, fruits, fish, and processed foods, such as instant noodles, for other land-scarce, middle- and high-income Asian countries.

As Chinese officials and end-users in China gain more experience in implementing WTO commitments, the importing process should become smoother. For example, 2003 TRQs for corn were allocated 2 months ahead of the pace set in 2002. TRQs for wheat and corn should be utilized at a greater rate and imports should rise. However, it is likely that imports of corn, wheat, and rice will again be well below their quotas unless world market prices fall enough to make imports more attractive to Chinese buyers.

Imports of corn and wheat are likely to rise at some point as the overhang of excess stocks in China is liquidated. However, uncertainty about stock levels makes it difficult to predict whether imports will increase during 2003 or in later years. A decline in world prices from the drought-induced highs in 2002 and a resurgence of growth in China's livestock sector would increase demand for imports of corn and wheat. China's serious problem with water scarcity in wheat-growing regions is another factor favoring rising wheat imports in the long run.

At the same time, however, Chinese officials remain averse to reliance on imported grain. They are likely to curb a surge of imports by implementing nontariff measures, such as phytosanitary requirements, tightened inspection requirements, delays in approval of import quota allocations, new domestic regulations for importers, indirect taxes, and fees.

China will remain a large importer of soybeans, and USDA projections indicate that China will account for most of the growth in world soybean imports in the next decade. Dozens of large, modern crushing plants have been constructed and China's soybean crushing capacity far exceeds its domestic soybean production.

While demand continues to grow, various policy measures and domestic soybean production growth could potentially curb import growth. China can make use of its vaguely worded regulations for genetically-modified (GMO) food to slow imports by changing testing requirements or other aspects of the application process, or by delaying the granting of applications for safety certificates. China gave assurances that soybean trade would not be interrupted while interim measures are in force through April 2004, but the long-term outlook is still uncertain. Agriculture officials are implementing plans to promote both the quantity and quality of China's soybean production. There are also ongoing efforts to raise yields and oil content. An increase in the ratio of soybean price to corn price could shift some corn acreage to soybeans.

China's corn exports are likely to continue at a rapid pace through calendar year 2003 and into 2004, but USDA projects a decline in future years (U.S. Department of Agriculture, Economic Research Service, Agricultural Baseline Projections). The liquidation of excess corn stocks will reduce the urgency for policymakers to continue various tax rebates and fee waivers aimed at boosting corn exports. Exports could also be reduced if a shift of acreage from corn to soybeans reduces corn production.

Domestic demand for corn, driven by growth in China's livestock production, is expected to grow, thus diverting corn from exports to the domestic market. For the 2003-12 period, USDA projects average annual growth of 4.2 percent in beef production, 2.9 percent in poultry production, and 2 percent in pork production, as China's farm sector responds to increasing demand for meat and livestock products (U.S. Department of Agriculture, Economic Research Service, Agricultural Baseline Projections). Demand for corn to feed the growing livestock herd is projected to grow 3 percent annually, with a cumulative increase of over 30 million tons over the 2003-12 period. Demand for soymeal used for feed will grow even faster, at 5.1 percent annually, due to increasing use of modern feed rations that include high-protein meals. Use of corn for starch, food products, alcohol, and industrial uses is also growing.

China's textile and leather product manufacturing industries are expected to grow rapidly, fueled by low

labor costs and eventual relaxation of textile import quotas in the United States and other markets. This growth is expected to revive China's cotton imports from their low levels in 2002. It is unlikely that China can increase domestic cotton production enough to accommodate growth in its textile industry. Demand for U.S. hides and skins for use in leather products manufacturing will remain strong.

China's exports of horticultural, livestock, and manufactured food products are likely to continue growing, since China can produce these products at relatively

low cost. However, China's products have been rejected in some overseas markets due to disease problems, excessive chemical residue, and other problems. China's increased involvement in world trade is spurring efforts to improve its animal health, raise its food safety standards, and improve its inspection systems. China's high-value food product exports are likely to rise as its sanitary and safety standards rise to world levels. At the same time, rising living standards, falling tariffs, and improved access to the market will increase U.S. exports of consumer-oriented fruits, meats, snack foods, and processed foods to China.

References

- China Agricultural Science and Technology Network (CAST), "Xinhua Weekly Corn Report: Prices Up Slightly in Northeastern Corn Production Regions, Stable in Southern Consumption Regions," China Agricultural Technology Information Network, April 2, 2003. <http://www.cast.net.cn>.
- China National Grain and Oils Information Center, "2002 Nian Guonei Liangyou Shichang Jianze Nianbao" (2002 Annual Domestic Grain and Oils Market Overview Report). 2002 National Grain Bureau Soft Science Report, Jan. 20, 2003.
- Customs General Administration of the People's Republic of China, *Customs Import and Export Tariff of the People's Republic of China*. Beijing: Economic Management Publishing House, various years.
- Fewsmith, Joseph, "The Political and Social Implications of China's Accession to the WTO." *The China Quarterly*, vol. 173, 2001, pp. 574-91.
- FoodChina.com, "FoodChina Daily Report," Internet newsletter, March 31, 2003.
- Gale, Fred. "China's Corn Exports: Business as Usual, Despite WTO Accession." *Feed Outlook supplement*, U.S. Department of Agriculture, Economic Research Service, FDS1202-01, Dec. 2002. <http://www.ers.usda.gov/publications/fds/dec02/fds1202-01/>
- Lohmar, Bryan, James Hansen, Hsin-Hui Hsu, and Ralph Seeley, "WTO Accession Will Increase China's Agricultural Imports." *Agricultural Outlook*, April 2002, pp. 17-20.
- Qing, Xiang, and Adam Branson, "People's Republic of China Poultry and Products Annual, 2002," U.S. Department of Agriculture, Foreign Agricultural Service, GAIN report CH2042, Sept. 10, 2002.
- U.S. Department of Agriculture, Economic Research Service, "China: WTO accession." Web-based briefing room. <http://www.ers.usda.gov/briefing/china/wto.htm>
- _____. "Agricultural Baseline Projections." Web-based briefing room. <http://www.ers.usda.gov/Briefing/Baseline/>.
- Wade, John, and Jianping Zhang, "China Livestock and Products Annual 2002," U.S. Department of Agriculture, Foreign Agricultural Service, GAIN report CH2044, Sept. 16, 2002.
- _____, "China, People's Republic of, Grain and Feed, Corn and Wheat Update 2002," U.S. Department of Agriculture, Foreign Agricultural Service, GAIN report CH2057, Dec. 6, 2002.
- Wailes, Eric, Cheng Fang, and Francis Tuan, "U.S.-China Agricultural Trade: Constraints and Potential," *Journal of Applied and Agricultural Economics*, vol. 30, no. 1, July 1998, pp. 113-126.
- Wang, Zhi, "China's Agricultural Trade in 1996: Commodity Structure, Geographical Distribution, and Its Role in U.S and World Trade," *China Situation and Outlook Report*, U.S. Department of Agriculture, Economic Research Service, WRS-97-3, June 1997, pp. 6-15.

Appendix table 1—Value of China's agricultural imports and exports, calendar years, 2000-02

HS Code ¹	Description	Imports			Exports		
		2000	2001	2002	2000	2001	2002
		<i>Billion dollars</i>			<i>Billion dollars</i>		
	All imports and exports	225.1	243.6	295.3	249.3	266.7	325.6
	Total agricultural	9.9	10.4	10.8	11.6	11.5	13.0
		<i>Million dollars</i>			<i>Million dollars</i>		
01	Live animals	52.3	35.5	53.4	385.2	344.5	343.7
0102	Cattle	2.2	6.0	22.0	38.0	33.7	33.1
0103	Swine	4.1	1.9	2.0	231.9	221.2	214.9
0105	Poultry	11.2	10.3	12.5	104.1	77.7	82.1
02	Meat	637.0	596.9	626.0	753.6	842.1	665.8
0203	Pork	58.4	41.6	81.4	68.6	135.8	209.5
0207	Poultry meat and offal	480.7	443.0	425.7	587.4	597.5	401.1
04	Dairy, eggs, honey	217.9	218.7	272.0	187.9	192.3	194.3
05	Other animal products	158.0	172.7	187.6	756.8	653.4	649.6
06	Live trees and plants	20.7	22.1	32.9	31.8	34.9	43.1
07 ²	Vegetables	59.6	56.3	51.1	1,482.0	1,684.1	1,821.6
08	Edible fruit and nuts	368.4	366.6	377.6	417.3	435.9	555.1
09	Tea, coffee, spices	22.8	21.2	23.2	505.5	542.9	551.6
0902	Tea	4.2	2.9	2.7	347.1	342.3	331.9
10	Grains	574.1	607.4	481.8	1,638.9	1,034.1	1,651.2
1001	Wheat	147.4	121.4	102.7	0.2	46.5	70.1
1003	Barley	313.3	381.9	291.0	0.1	0.1	0.1
1005	Corn	0.4	4.8	1.6	1,047.2	625.4	1,166.8
1006	Rice	112.7	98.9	79.7	561.1	329.2	381.7
11	Milling products, malt, starch	63.7	80.7	95.0	92.6	107.4	118.3
12 ²	Miscellaneous seeds, grains, fruits	3,061.3	3,330.7	2,761.7	832.9	871.8	891.9
1201	Soybeans	2,270.2	2,809.5	2,482.8	64.0	77.2	76.7
1202	Peanuts	0.2	0.1	0.3	231.7	263.9	263.7
1205	Rapeseed	657.6	373.6	146.6	0.4	0.0	0.7
13	LAC, vegetable saps, extract	34.2	31.7	36.4	47.3	67.1	77.1
14	Vegetable plaiting materials	83.2	64.8	44.3	42.6	43.1	43.8
15 ²	Fats and oils	1,011.4	771.7	1,574.5	124.2	117.3	106.9
1507	Soybean oil	125.9	23.5	408.0	17.1	23.1	21.6
1511	Palm oil	456.2	425.8	848.7	0.2	0.1	3.2
16 ²	Prepared meat	7.4	7.9	9.6	491.2	618.8	698.2
17	Sugars	181.6	376.2	279.9	172.9	155.7	227.1
18	Cocoa	70.8	80.3	79.9	29.0	27.5	36.0
19	Baking related	71.2	93.3	143.6	360.3	413.1	455.1
20	Preserved food	59.6	85.0	113.7	1,314.7	1,499.2	1,761.1
21	Miscellaneous food	146.7	181.4	179.5	359.3	400.1	460.3
22 ²	Beverages	127.5	99.9	83.6	402.0	431.4	465.0
23 ²	Food waste, animal feed	332.5	156.3	136.9	249.4	293.6	404.4
2304	Soybean oilcake, residue	105.9	11.7	0.2	4.7	61.8	193.4
2401	Tobacco leaf	164.0	233.2	215.6	151.3	189.9	205.8
35 ³	Modified starches, glue, perfume, acid	235.5	257.2	293.1	109.9	124.9	134.2
4001	Natural rubber	584.2	592.3	693.9	0.3	0.4	0.9
41 ⁴	Hides, skins, and furs	626.1	843.0	774.0	11.4	10.9	12.4
50 ⁵	Raw silk	8.2	6.1	3.1	277.3	246.2	244.6
51 ⁶	Wool	778.4	806.8	819.7	11.5	15.2	13.5
5201	Cotton	74.1	71.0	179.7	305.2	81.4	169.6
53 ⁷	Flax, jute, other vegetable fibers	113.0	112.4	120.0	10.9	7.4	9.3

¹Harmonized codes system for identifying commodities in international trade statistics. ²HS 07 excludes cassava. HS 12 excludes seaweed. HS 15 excludes oil from fish and marine mammals. HS 16 excludes fish, caviar, crustaceans, and mollusks. HS 22 excludes ethyl alcohol. HS 23 excludes flour and meals from fish. ³Includes HS 35, 3301, 33021010, 33021090. ⁴Includes HS 4101, 4102, 4103, 4300. ⁵Includes HS 5001, 5002. ⁶Includes HS 5101, 5102. ⁷Includes HS 5301, 5303, 5305.

Source: ERS analysis of World Trade Atlas data derived from China customs statistics.

Appendix table 2—Value of U.S. agricultural trade with China, calendar year, 2000-2002

HS Code ¹	Description	U.S. exports to China			U.S. imports from China		
		2000	2001	2002	2000	2001	2002
		<i>Billion dollars</i>			<i>Billion dollars</i>		
	All imports and exports	16.3	19.2	22.1	100.1	102.3	125.2
		<i>Million dollars</i>			<i>Million dollars</i>		
	Agricultural total	1,716.0	1,938.5	1,960.0	811.6	816.2	1,001.4
01	Live animals	8.5	8.4	13.9	5.1	5.8	11.7
0102	Cattle	0.1	0.9	1.4	0	0	0
0103	Swine	1.5	0.6	1.8	0	0	0
0105	Poultry	5.0	5.7	8.5	0	0	0
02	Meat, edible offal	62.1	69.2	81.0	3.7	3.5	8.3
0203	Pork	3.6	10.1	7.6	0	0	0
0207	Poultry	41.9	36.9	45.3	0	0	0
04	Dairy products	13.1	25.2	24.7	27.5	21.4	13.8
05	Other animal products	35.0	38.3	33.6	188.1	172.7	197.7
06	Live trees, plants	1.1	1.0	1.5	6.9	9.7	12.7
07 ²	Vegetables	8.0	6.3	5.9	54.0	61.4	89.5
08	Fruit and nuts	30.7	38.4	40.3	25.0	31.3	50.7
09	Tea, coffee, spices	1.0	1.6	0.5	45.7	48.1	55.3
0902	Tea	0.0	0.0	0.2	18.9	19.9	23.1
10	Cereals	28.7	22.3	29.0	0.7	1.1	0.7
1001	Wheat	17.8	21.4	25.9	0	0	0
1003	Barley	6.0	0	0	0	0	0.1
1005	Corn	0.4	0.7	2.2	0.5	0.4	0.3
1006	Rice	0.3	0.2	0.8	0.5	0.9	1.8
11	Milling products, starches	4.7	3.2	2.6	5.3	2.4	3.0
12	Oilseeds	1,043.9	1,030.2	1,024.3	77.3	67.4	68.5
1201	Soybeans	1,007.7	1,012.8	995.8	0	0	0
13	LAC, gums, resins	9.6	13.7	13.9	48.5	44.1	48.4
14	Vegetable plaiting	10.9	3.9	3.0	6.9	8.4	8.7
15 ²	Fats and oils	20.5	14.1	28.5	7.3	5.7	6.2
16 ²	Meat preparations	8.9	20.1	27.2	58.9	107.2	185.5
17	Sugars	17.7	22.3	12.8	25.8	26.2	46.5
18	Cocoa	6.6	5.7	8.5	17.5	11.1	10.0
19	Baking related	9.3	8.4	9.4	28.8	31.4	37.7
20	Preserved food	22.0	33.6	42.1	148.1	175.8	224.2
21	Miscellaneous food	34.3	57.4	44.8	33.1	37.4	42.3
22 ²	Beverages	2.7	4.4	6.1	15.7	23.1	29.2
23 ²	Food waste, animal feed	68.0	63.2	80.4	21.1	21.2	29.8
2401	Tobacco leaf	0.8	1.3	0.5	17.6	5.0	4.9
35 ³	Modified starches, glues, perfumes, resins	0	0	0	0	0	0
4001	Natural rubber	0.1	0.2	1.0	5.5	3.0	1.9
41 ⁴	Hides and skins	227.6	396.0	393.5	0.1	0.2	0.2
5001 ⁵	Raw silk	0	0	0	0	0	0
51 ⁶	Wool	0.1	0.2	1.0	5.5	3.0	1.9
5201	Cotton	46.3	42.9	138.0	0.1	0	0
53 ⁷	Flax, jute, veg. fibers	0	0	0.2	0.1	0.1	0.1

¹Harmonized codes system for identifying commodities in international trade statistics. ²HS 07 excludes cassava. HS 12 excludes seaweed. HS 15 excludes oil from fish and marine mammals. HS 16 excludes fish, caviar, crustaceans, and mollusks. HS 22 excludes ethyl alcohol. HS 23 excludes flour and meals from fish. ³Includes HS 35, 3301, 33021010, 33021090. ⁴Includes HS 4101, 4102, 4103, 4300. ⁵Includes HS 5001, 5002. ⁶Includes HS 5101, 5102. ⁷Includes HS 5301, 5303, 5305.

Source: USDA.

Appendix table 3—China's major agricultural imports, by volume, 2000-02

HS Code ³	Description	All imports ¹			From United States ²		
		2000	2001	2002	2000	2001	2002
		<i>1,000 tons</i>			<i>1,000 tons</i>		
02	Meat	1,145	972	880	92	93	115
0203	Pork	136	94	145	3	6	7
0206	Edible animal offal	134	143	114	7	11	10
0207	Poultry meat, offal	850	705	574	78	72	91
1201	Soybeans	10,419	13,939	11,316	5,231	5,436	4,861
1205	Rapeseed	2,969	1,724	618	0	0	0
10	Grains	3,091	3,366	2,818	0	0	0
1001	Wheat	876	690	605	135	136	169
1003	Barley	1,974	2,368	1,907	57	0	0
1005	Corn	0	36	6	0	1	20
1006	Rice	239	269	236	1	0	4
15	Fats and oils	2,771	2,609	3,915	0	0	0
1507	Soybean oil	308	70	870	1	6	0
1511	Palm oil	1,391	1,520	2,221	0	0	0
08	Fruit and nuts	984	964	1,017	38	45	48
	Nuts	73	128	126	3	4	5
	Bananas, tropical fruit	614	432	374	0	0	0
	Citrus	62	68	58	17	25	26
	Grapes, melons, apples, pears	92	123	198	16	15	14
1701	Sugar	675	1,199	1,184	1	0	0
2304	Soybean oilcakes	505	53	1	0	0	0
4001	Natural rubber	852	984	956	0	0	3
5201	Raw cotton	47	56	171	32	45	151
5101	Wool	239	150	192	0	0	1

¹Derived from Chinese import statistics. ²Derived from U.S. export statistics. ³Harmonized codes system for identifying commodities in international trade statistics.

Source: ERS analysis of World Trade Atlas data derived from China customs statistics and USDA.

Appendix table 4—China's agricultural exports, by volume, 2000-02

HS code ³	Description	All exports ¹			To United States ²		
		2000	2001	2002	2000	2001	2002
		<i>1,000 head</i>			<i>1,000 head</i>		
0103	Live swine	2,039	1,973	1,889	0	0	0
0105	Live poultry	48,901	41,952	42,804	0	0	0
		<i>1,000 tons</i>			<i>1,000 tons</i>		
02	Meat	514	572	524	1	1	2
0203	Pork	53	103	162	0	0	0
0207	Poultry meat, offal	405	403	328	0	0	0
07	Vegetables	2,593	3,242	3,915	56	73	106
0703	Garlic, onions	560	852	1,337	1	5	20
0701-0709, ex.0703	Other fresh, chilled vegetables	736	814	955	3	4	5
0710	Frozen vegetables	312	382	342	15	17	18
0711-0713	Preserved, dried vegetables	986	1,195	1,282	35	46	59
08	Fruit and nuts	886	895	1,235	10	15	16
0805	Citrus fruit	200	171	217	15	17	18
0808	Apples, pears	444	488	682	5	7	6
0801, 0802	Nuts	57	56	58	3	5	5
0902	Tea	228	250	252	14	16	16
0904-0910	Spices	257	308	352	20	23	28
10	Grain	13,593	8,484	14,520	1	2	1
1001	Wheat	3	455	688	0	0	0
1005	Corn	10,485	5,998	11,674	0	0	<1
1006	Rice	2,953	1,860	1,979	1	<1	<1
1201	Soybeans	213	249	276	<1	1	2
1202	Peanuts	400	495	521	0	0	0
1701	Sugar	415	196	326	<1	<1	<1
1704	Confections	49	51	73	8	10	16
5201	Cotton	292	53	150	0	0	0
2304	Soybean oilcakes	29	315	1,013	0	0	0

¹Derived from China customs statistics. ²Derived from U.S. import statistics. <1 = less than 1,000 tons. ³Harmonized codes system for identifying commodities in international trade statistics.

Source: ERS analysis of World Trade Atlas data derived from China customs statistics and USDA data.