

December 2005

CHINA TRADE

U.S. Exports, Investment, Affiliate Sales Rising, but Export Share Falling



G A O

Accountability * Integrity * Reliability



Highlights of [GAO-06-162](#), a report to congressional committees

Why GAO Did This Study

China is important to the global economy and a major U.S. trading partner. By joining the World Trade Organization (WTO) in 2001, China pledged to further liberalize its trade regime and follow global trade rules. While U.S.-Chinese commercial relations have expanded, controversies have emerged, including the size and growth of the U.S. trade deficit with China, China's lack of intellectual property protection, and China's implementation of its WTO obligations. Despite these challenges, China's vast consumer and labor markets present huge opportunities for U.S. exporters and investors. GAO (1) analyzed U.S. goods and services exports to China, (2) assessed how U.S. exports to China have fared against those of other major trading partners, and (3) analyzed U.S. investment and affiliate sales in China.

We provided the Office of the U.S. Trade Representative, the Departments of Agriculture and Commerce, and the International Trade Commission with a draft of this report for their review and comment. These agencies chose to provide technical comments from their staff. We incorporated their suggestions as appropriate.

www.gao.gov/cgi-bin/getrpt?GAO-06-162.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Loren Yager at (202) 512-4128 or yagerl@gao.gov.

CHINA TRADE

U.S. Exports, Investment, Affiliate Sales Rising, but Export Share Falling

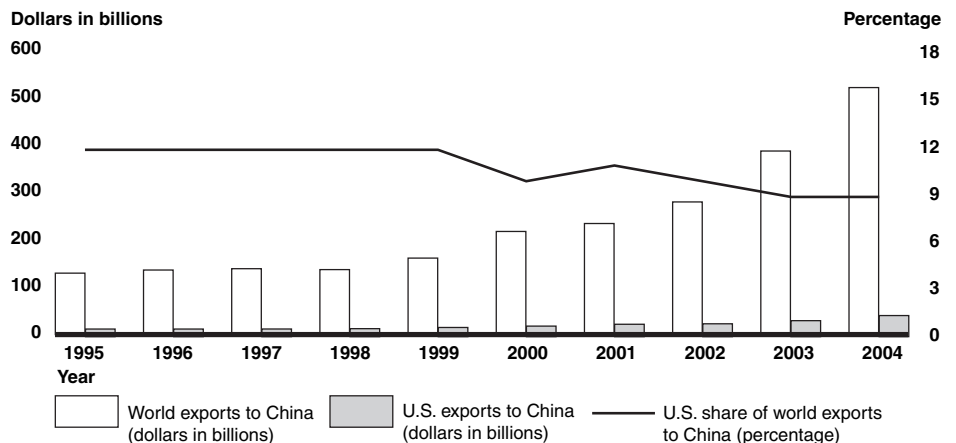
What GAO Found

China is a rapidly growing market for U.S. goods and services. Although still small, accounting for only 4 percent of U.S. goods exports in 2004, U.S. goods exports to China tripled, from \$11 billion to \$33 billion, and increased across virtually all major categories from 1995 to 2004. Over the same period, China went from the ninth-largest to the fifth-largest U.S. market for goods behind Canada, the European Union, Mexico, and Japan. Although smaller, U.S. services exports grew from \$3 billion to \$7 billion, from 1995 to 2004. Economic growth in China and liberalization of its market, including joining the WTO, are among the factors driving the impressive export growth.

Despite rapid growth, U.S. goods exports to China have not kept pace with those of other countries, particularly exports from Asia. The U.S. share of world goods exports to China declined from 12 percent to 9 percent, from 1995 to 2004, while South Korea and Taiwan's shares increased and at times surpassed that of the United States. The decline is partly due to increased integrated production among China's neighbors; growing resource-based exports, such as oil, from smaller countries; and macroeconomic factors, including exchange rates.

Sales to China by U.S. affiliates located in China grew faster and exceeded U.S. exports to China in 2003, \$38 billion versus \$35 billion, while U.S. foreign direct investment grew from \$2 billion to \$15 billion from 1995 to 2004. Growth in U.S. investment and affiliate sales, particularly for goods, is due at least in part to China's attraction as a growing economy, including its burgeoning domestic market, high productivity and low labor costs, and developing infrastructure.

U.S. and World Goods Exports to China Are Rising, but U.S. Share of World Goods Exports to China Is Falling (1995-2004)



Source: GAO analysis of official Chinese trade statistics.

Contents

Letter

Results in Brief	1
Background	2
Goods Exports to China Experienced Rapid Growth in the Past Decade, Driven by China's Economic Growth and Market Liberalization	5
While Overall Services Exports to China Grew during the Past 10 Years, Growth among Services Categories Varied	7
U.S. Goods Exports Have Not Kept Pace with Other Nations' Exports to China	14
U.S. Investment in China Has Increased, and Affiliate Sales Surpassed U.S. Exports	21
Observations	32
Agency Comments	40
	41

Appendixes

Appendix I: Objectives, Scope, and Methodologies	43
Appendix II: U.S. Goods Exports and U.S. Share of World Goods Exports to China	47
Appendix III: Services Trade Categories and Their Definitions	64
Appendix IV: U.S. Foreign Direct Investment and U.S. Affiliate Sales in China	65
U.S. Foreign Direct Investment in China	65
U.S. Affiliate Sales in China	66
Appendix V: GAO Contact and Staff Acknowledgments	69

Tables

Table 1: U.S. Exports to China by the Annual Growth Rate (1995-2004) and Export Value for 2004	11
Table 2: Five Main U.S. Services Exports to China by Annual Growth Rate (1995-2004) and Export Value for 2004	17
Table 3: Subcategory of U.S. Services Exports to China by the Annual Growth Rate (1995-2004) and Export Value for 2004	18
Table 4: Subcategory of U.S. Services Exports to China by the Annual Growth Rate (1995-2004) and Export Value for 2004	19
Table 5: Changes in U.S. Share of World Exports to China, 1995-2004; and U.S. Goods Exports to China, 2004	25

Table 6: Examples of Oil-Producing Countries with Higher-Than-Average Export Growth Rates to China, 2000-2004	31
Table 7: Concordance between 10 GAO Categories and the U.S. Harmonized Tariff Schedule Section Headings	44
Table 8: Goods Subcategories for Which U.S. Goods Exports to China Accounted for More Than 10 Percent of Total U.S. Goods Exports in 2004	47
Table 9: Goods Subcategories for Which U.S. Goods Exports to China Accounted for Less Than 1 percent of Total U.S. Goods Exports in 2004	48
Table 10: Goods Subcategories with the Highest Value Increase in U.S. Exports to China (Average 1995-1999 Versus Average 2000-2004)	50
Table 11: Products with the Highest Value Decrease in Exports to China (Average 1995-1999 Versus Average 2000-2004)	51
Table 12: Top 20 Declines in U.S. Share of World Exports to China, 1995-2004	52
Table 13: Top 20 Increases in U.S. Share of World Goods Exports to China, 1995-2004	53
Table 14: U.S. Goods Exports and U.S. Share of World Goods Exports to China—All Categories and Subcategories, 1995-2004	56
Table 15: Industry Group U.S. Foreign Direct Investment to China by Annual Growth Rate (1995-2004) and Value Foreign Direct Investment for 2004	65
Table 16: Manufacturing Industry Group U.S. Foreign Direct Investment to China by the Annual Growth Rate (1995-2004) and Value Foreign Direct Investment 2004	66
Table 17: Affiliate industry Group Sales in China by Annual Growth Rate (1995-2003) and Sales Value in 2003	67
Table 18: Manufacturing Affiliate Industry Group Sales in China by Annual Growth Rate (1995-2003) and Sales Value in 2003	68

Figures

Figure 1: U.S. Goods Export Markets in 2004	8
Figure 2: Value and Share of U.S. Goods Exports to China	9
Figure 3: Top Markets for U.S. Services Exports in 2004	15
Figure 4: Value and Share of U.S. Services Exports to China and as a Share of Total U.S. Services Exports, 1995-2004	16
Figure 5: U.S. and World Goods Exports to China and U.S. Share of World Goods Exports to China, 1995-2004	23

Figure 6: Share of Goods Exports to China for the Top Six Suppliers, 1995-2004	24
Figure 7: Major Suppliers' Share of World Exports to China of Prepared Food, Beverages, Spirits, and Tobacco, 1995-2004	28
Figure 8: U.S. Foreign Direct Investment in China, Value of Cumulative Stock, and Share of Total U.S. Investment, 1995-2004	33
Figure 9: Realized Annual Investment Flows in China, from the World, 2003	34
Figure 10: Growth of Total (Goods and Services) U.S. Affiliate Sales in China and U.S. Exports to China, 1995-2004	36
Figure 11: Growth of U.S. Affiliate Sales of Goods in China and U.S. Goods Exports to China, 1995-2004	37
Figure 12: Growth of U.S. Affiliate Sales of Services in China and U.S. Services Exports to China, 1995-2004	38

Abbreviations

ASEAN	Association of Southeast Asian Nations
BEA	U.S. Bureau of Economic Analysis
EU	European Union
HTS	U.S. Harmonized Tariff Schedule
USTR	U.S. Trade Representative
WTO	World Trade Organization

This is a work of the U.S. government and is not subject to copyright protection in the United States. It may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.



United States Government Accountability Office
Washington, D.C. 20548

December 9, 2005

The Honorable Charles E. Grassley
Chairman
The Honorable Max Baucus
Ranking Minority Member
Committee on Finance
United States Senate

The Honorable William M. Thomas
Chairman
The Honorable Charles B. Rangel
Ranking Minority Member
Committee on Ways and Means
House of Representatives

China has become an important nation within the global economy and a major U.S. trading partner. China is also a top destination for foreign direct investment, as multinational corporations increasingly access the Chinese market through their foreign affiliates. By joining the World Trade Organization (WTO) in 2001, China pledged to further liberalize its trade regime and become subject to global trade rules. While U.S.-China commercial relations have expanded in recent years, disagreements have also emerged over a wide variety of issues, including the size and growth of the U.S. trade deficit with China, China's enforcement of intellectual property protection,¹ and concerns over China's implementation of its WTO obligations. Despite these challenges, China's vast consumer and labor markets present considerable opportunities for U.S. exporters and investors.

In response to your request for a long-term body of work related to U.S.-China trade, we provide information in this report on the extent to which U.S. companies have accessed the Chinese market through exports to and investment in China. Specifically, we (1) analyzed U.S. goods exports to China and how they have changed over time, (2) analyzed U.S. services exports to China and how they have changed over time, (3) assessed how U.S. exports to China have fared against other major trading partners'

¹Intellectual property is nontangible property that is the creation of the mind. The government protects the intellectual property through means such as copyrights and patents.

goods exports to China, and (4) analyzed U.S. investment and affiliate sales in China.

In order to analyze how U.S. exports to China have changed over time, we collected and analyzed U.S. goods trade data from the Department of Agriculture's U.S. Census Bureau and U.S. services trade data from Department of Commerce's U.S. Bureau of Economic Analysis (BEA). To assess how U.S. exports to China have fared compared with that of China's other major trading partners, we reviewed official Chinese trade statistics. We analyzed the goods trade data at various levels, including GAO's 10 broad categories of goods, which are aggregations of the 99 chapter headings of the U.S. Harmonized Tariff Schedule (HTS). To compare U.S. companies' investments and sales in China to U.S. exports to China, we collected and analyzed U.S. direct investment abroad and multinational company operations data from BEA and from Chinese trade statistics. We recognize the limitations of the Chinese trade statistics and the differences from U.S. statistics, but we found them to be sufficiently reliable to present individual countries' shares of China's trade and their investment in China. Finally, we reviewed U.S. government and private sector studies on the U.S.-China trade and investment relationship and interviewed relevant U.S. government and private sector experts on U.S.-China trade. In order to compare real changes in trade flows and remove the effects of price inflation or deflation, we used deflators and reported statistics in 2004 constant dollars, except as noted. Appendix I contains a full description of our objectives, scope, and methodologies.

We performed our work from April 2005 to December 2005 in accordance with generally accepted government auditing standards.

Results in Brief

Although accounting for only 4 percent of total U.S. goods exports, China is a fast-growing market, with U.S. goods exports to China growing faster than overall U.S. goods exports over the past decade. In addition, China's ranking among other U.S. trading partners has grown in importance, jumping from the 9th-largest market for U.S. goods exports in 1995 to the 5th-largest in 2004, behind Canada, the European Union (EU), Mexico, and Japan. U.S. goods exports to China tripled in value from 1995 to 2004 from \$11 billion to \$33 billion,² with an annual real growth rate of 13 percent

²All U.S. goods exports statistics are in 2004 constant dollars. See appendix I.

versus a 2 percent real annual growth rate for overall goods exports. In the past decade, U.S. goods exports to China increased across virtually all major categories, and China was a major market for some U.S. exports, mainly raw materials. Much of the growth occurred during the second part of the last decade. Economic growth in China and liberalization of its market, including joining the WTO, are among the factors driving the impressive export growth. China's development in the manufacturing sector has created demand for industrial inputs and raw materials, such as electronic circuits for consumer electronics and cotton for the textile and apparel industry.

Although smaller compared with goods, China's market for U.S. services has increased in importance, rising both in dollar value, from \$3 billion to over \$7 billion, and as a share of total U.S. services exports, from 1 percent to over 2 percent, from 1995 to 2004.³ China also moved from the 12th- to the 7th-largest market for U.S. services exports during the same period. In addition, like goods, U.S. services exports to China grew faster than U.S. services exports to the rest of the world. Growth varied among the 5 main services categories and their subcategories, with *Royalties and Licensing* and *Passenger Fares* growing the fastest. Also like goods, overall increases in U.S. services exports were likely due to the sharp growth of the Chinese economy and the resulting increased demand for services. Slower U.S. export growth in some categories may be due to relatively slower trade liberalization in China for services. For example, many WTO services commitments have only recently come into effect or are not yet scheduled to be phased in until later and restrictions remain. However, trade in services also tends to be smaller than trade in goods, in part, because many services require local presence in China and thus are harder to provide internationally.

Although growing rapidly, U.S. goods exports to China have not kept pace with other countries' goods exports to China, particularly from Asia.⁴ The U.S. share of world goods exports to China declined from 12 percent to 9 percent over the past decade. At the same time, South Korea and Taiwan increased their relative shares, and in some cases, surpassed the United States as suppliers to China, according to Chinese trade statistics. The U.S.

³All U.S. service exports statistics are in 2004 constant dollars. See appendix I.

⁴While Chinese goods trade data are available, bilateral Chinese services data are not available to allow an analysis of how the United States compares with other services exporters to China. See appendix I.

share of world exports to China declined in export categories with large dollar values, such as *Machinery, Electronics, and High-Tech Apparatus*, which include products like telecommunications equipment, fiber optics, and computer parts. Despite the overall decline, the United States gained export share in some categories, particularly those related to agricultural goods under *Prepared Food, Beverages, Spirits, and Tobacco*. The U.S. share of world exports to China has declined over time partly because China is importing goods in industries like electronics, in which local Asian countries are increasingly exporting parts to China to be assembled into final products. Another reason for the declining United States market share is that China has dramatically increased imports of resource-based products, such as petroleum, which the United States exports very little of in China. Finally, macroeconomic factors, such as exchange rates, and industry-specific factors may also affect U.S. firms' ability to compete with other suppliers to China.

Through increased foreign investment in China, U.S. affiliate sales have exceeded U.S. exports to China since 2002 because U.S. companies have sold more of their goods and services directly to the Chinese market through their local affiliates. In 2004, the United States was the 5th-largest source of foreign direct investment for China. Overall U.S. investment in China has been growing, from \$2 billion to \$15 billion⁵ from 1995 to 2004, and is concentrated in the manufacturing sector. U.S. affiliate sales of goods and services have become an important avenue for accessing the Chinese market. For goods alone, U.S. affiliate sales in China in 2003⁶ were \$34 billion versus \$29 billion in U.S. exports to China. The relationship for services was the reverse, with U.S. affiliate sales at \$4 billion compared with exports of \$6 billion that same year. Growth in investment and affiliate sales, particularly for goods, is due at least in part to China's attraction as a growing economy, including its burgeoning domestic market, relatively high productivity and low labor costs, and developing infrastructure. The relatively smaller investment levels and affiliate sales in services match worldwide patterns but, as is the case for services exports, may also be because many of China's WTO commitments for liberalizing services trade have only recently or are yet to be phased in and restrictions remain.

⁵Data for U.S. investment in China are provided on an historical cost basis.

⁶At the time of publication, data on affiliate sales were available through 2003.

Background

Over the last few decades, various political and economic factors have contributed to the advancement of commercial relations between the United States and China. Trade expanded rapidly after the United States and China signed a bilateral trade agreement in 1979. Total U.S.-China trade increased from about \$8 billion in 1985 to \$20 billion in 1990 and to \$57 billion in 1995, according to the Census Bureau. The economic reforms and open investment policies that China initiated around the same time led to a surge in demand for foreign goods and services to modernize the economy, from infrastructure to industries. China's rapid economic growth, with its real gross domestic product growing at an average annual rate of about 9.5 percent from 1980 to 2000,⁷ generated demand for raw materials and basic commodities, such as steel, iron, and cotton. Economic growth also enhanced the purchasing power of Chinese citizens, especially those living in urban areas. This created a relatively large middle class with the ability to buy foreign consumer goods and services. In addition, China joined the WTO in December 2001, making it subject to the multilateral organization's trade liberalizing requirements.

While U.S. exports to China rose rapidly after 1980, U.S. imports from China grew at an even faster pace, creating a large bilateral trade deficit that continues to increase today. The deficit in goods ballooned from \$6 million in 1985 to \$34 billion in 1995 and to \$162 billion in 2004, according to the Census Bureau. This U.S. trade deficit with China in 2004 accounted for almost 25 percent of the overall U.S. trade deficit. The U.S.-China trade imbalance has gained much political and media attention in recent years and has become a source of trade friction between the two countries. Some policy makers, industry leaders, and labor groups believe that this trade imbalance is costing United States jobs in industries trying to compete with imports from China. Further, some policy makers believe that this trade imbalance may be due to China's unfair trade practices or its failure to meet all of its WTO obligations. Some policy makers also believe that China's currency is undervalued relative to the U.S. dollar, and thereby inhibits

⁷GAO calculations are based on data from China's National Bureau of Statistics.

greater imports from the United States.⁸ The causes of the U.S. trade deficit with China, or with the rest of the world, while complex, are rooted in part in macroeconomic factors at home and abroad, such as national savings and investment decisions, growth levels, monetary and fiscal policies, changes in domestic and foreign prices, and exchange rates. For example, when a country's budget deficit or domestic spending grows without increases in domestic savings, foreign capital inflows can rise, affecting exchange rates, leading to an increase in imports and deterioration in the trade balance. China, Japan, and Europe have been the largest foreign sources of these capital inflows to the United States in recent years. Some experts remain less concerned about trade deficits because the inflow of foreign capital allows a higher level of investment, benefiting the economy as a whole.

China's accession to the WTO in 2001, a complex process that took 15 years, resulted in commitments to further open and liberalize its economy and offer a more predictable environment for trade and foreign investment in accordance with WTO rules. In particular, China committed to gradually eliminate or lower tariffs and nontariff barriers on a broad range of goods and services.⁹ A subsequent survey of U.S. companies showed that they expected China's membership to the WTO to have a positive impact on their business operations.¹⁰ While U.S. firms are progressively gaining

⁸Many experts believe China has maintained an undervalued exchange rate relative to the dollar, which would tend to make U.S. exports to China relatively more expensive and China's exports to the United States relatively less expensive. In July 2005, China announced some changes in how it manages its exchange rate, and its currency has depreciated slightly against the dollar. For a discussion of U.S.-China exchange rate issues, see GAO, *International Trade: Treasury Assessments Have Not Found Currency Manipulation, but Concerns about Exchange Rates Continue*, [GAO-05-351](#) (Washington, D.C.: Apr. 19, 2005).

⁹For further information about China's obligations under the WTO, see GAO, *World Trade Organization: Analysis of China's Commitments to Other Members*, [GAO-03-04](#) (Washington, D.C.: Oct. 3, 2002).

¹⁰See GAO, *World Trade Organization: U.S. Companies' Views on China's Implementation of Its Commitment*, [GAO-04-508](#) (Washington, D.C.: Mar. 24, 2004); and *World Trade Organization: Selected U.S. Company Views About China's Membership*, [GAO-02-892](#) (Washington, D.C.: Sept. 23, 2002).

greater market access in China, many issues remain to be solved, from opaque rules and regulations to intellectual property violations.¹¹

Goods Exports to China Experienced Rapid Growth in the Past Decade, Driven by China's Economic Growth and Market Liberalization

Although still relatively small, China's market for U.S. goods exports has become increasingly important. Export growth to China was widespread across 10 major GAO product categories and accelerated in recent years. In particular, raw materials and intermediate inputs for manufacturing, such as cotton for textiles and apparel, experienced the highest growth in recent years. China's economic development and market liberalization have been major contributors to the growth in U.S. exports.

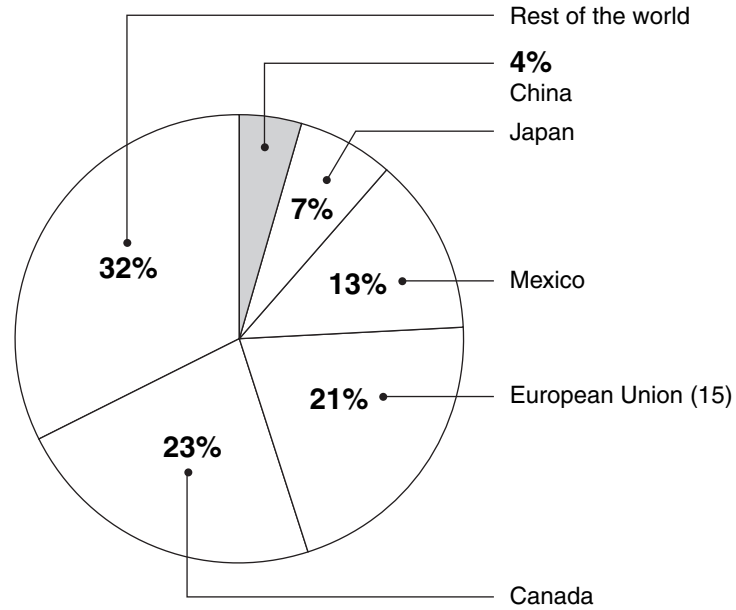
China Is an Increasingly Important and Fast-Growing Market for Exports of U.S. Goods

Although still small relative to some other U.S. trading partners, China's market for U.S. goods has increased in importance. China progressed from the 9th-largest market for U.S. goods exports in 1995 to the 5th-largest in 2004, after Canada, the EU,¹² Mexico, and Japan (see fig. 1). In addition, U.S. goods exports to China exceeded those to any individual EU country. However, exports to China are still significantly smaller than exports to the United States' largest trading partners, Canada and Mexico. In 2004, \$33 billion, or 4 percent of total U.S. goods exports, went to China, compared with \$164 billion and \$93 billion to Canada and Mexico, respectively.

¹¹See GAO, *U.S.-China Trade: Opportunities to Improve U.S. Government Efforts to Ensure China's Compliance with World Trade Organization*, [GAO-05-53](#) (Washington, D.C.: Oct. 6, 2004); and *Intellectual Property: U.S. Efforts Have Contributed to Strengthened Laws Overseas, but Challenges Remain*, [GAO-04-912](#) (Washington, D.C.: Sept. 8, 2004).

¹²Unless noted otherwise, the EU refers to the 15 countries that have been members of the EU over the past 10 years, rather than the current full membership of 25 countries. These 15 countries include Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Sweden, Spain, and the United Kingdom. (Ten additional members acceded to the EU in 2004, and adding them would change the numbers presented in figure 1 only slightly.)

Figure 1: U.S. Goods Export Markets in 2004



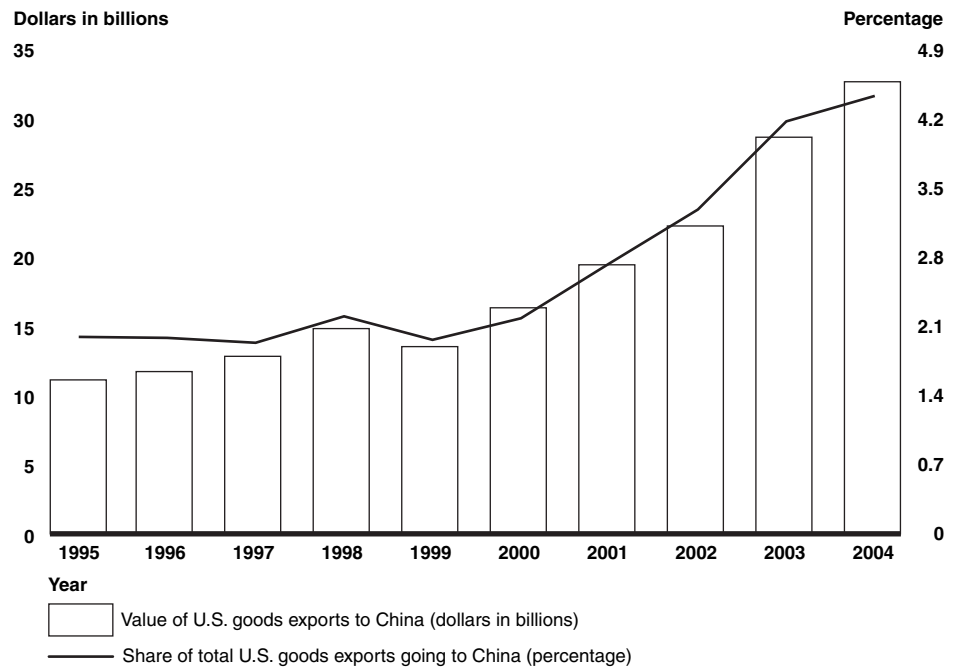
Source: GAO analysis of Department of Commerce, U.S. Census Bureau data.

On the other hand, China is a significant market, and in some cases even the largest market, for certain U.S. products—mainly raw materials for manufacturing, building, and agriculture. For example, more than 20 percent of U.S. exports of oil seeds, zinc, cotton products, and raw hides and skins and almost 13 percent of U.S. iron and steel exports were destined for China in 2004. Moreover, despite declines in recent years, China is still the largest market for U.S. fertilizer exports, according to an industry expert, and trade statistics show that fertilizer exports to China accounted for more than 35 percent of total U.S. fertilizer exports in some years. However, there are major exported products for which China remains a small U.S. market, including pharmaceutical products, with exports to China of less than 0.5 percent of total U.S. pharmaceutical exports, and vehicles, with less than 1 percent of U.S. vehicle exports in 2004.¹³ (See app. II, tables 8 and 9, for details.)

¹³The reasons why China is an insignificant market for some U.S. exports are complex and better understanding calls for further investigation. It may be a result of business decisions to sell through their foreign affiliates in China rather than through exports, and it may also reflect business concerns over intellectual property violations in China.

Over the past decade, U.S. goods exports to China have grown much faster than overall U.S. goods exports. U.S. exports to China tripled in value and grew at an annual rate of 13 percent versus 2 percent annually for overall U.S. exports, from 1995 to 2004, adjusted for inflation (see fig. 2).¹⁴ In addition, over the same period, U.S. exports to China grew faster than U.S. exports to any other major U.S. trading partner.¹⁵ Growth rates for U.S. exports over the decade were 3 percent for Canada, 7 percent for Mexico, and negative 3 percent for Japan. As a result of the faster growth, China's share of total U.S. exports more than doubled from 2 percent to over 4 percent from 1995 to 2004.

Figure 2: Value and Share of U.S. Goods Exports to China



Source: GAO analysis of Department of Commerce, U.S. Census Bureau data.

Note: We adjusted all data for inflation and expressed them in 2004 constant dollars.

¹⁴We have adjusted all U.S. goods exports statistics for inflation and expressed them as 2004 constant dollars.

¹⁵Small countries, such as Iraq and Afghanistan, which previously had very low levels of exports, have recently experienced larger increases in U.S. exports.

Export Growth Was Widespread among Goods Categories and Subcategories

While U.S. goods exports to China grew overall during the past decade, growth was also consistent at the more detailed product category and subcategory level.¹⁶ Over a 10-year period, all but 2 of GAO's 10 categories of goods, *Aircraft, Vehicles and Other Transportation* and *Miscellaneous and Special Provision Goods*, had double-digit annual growth rates from 1995 to 2004, as shown in table 1. The category with the highest U.S. export value, \$12.8 billion in 2004, was *Machinery, Electronics, and High-Tech Apparatus*, which grew at an annual rate of 15 percent over the period. *Aircraft, Vehicles and Other Transportation* had one of the lowest annual growth rates of 5 percent.

Much of the growth in U.S. goods exports to China occurred in recent years. As shown in table 1, the overall annual growth rate during the second 5 years of the decade, 2000 to 2004, was 19 percent, as compared with 6 percent from 1995 to 1999.¹⁷ In fact, 7 of the 10 goods categories had higher growth rate for the most recent 5-year period than for the previous 5-year period. For example, *Textiles and Apparel, Leather and Footwear*, the bulk of which includes raw cotton (including yarn and woven fabric),¹⁸ had the highest growth rate during the recent 5-year period, or 45 percent annually from 2000 to 2004, as compared with a negative 20 percent growth rate in the previous 5 years. The goods category with the highest U.S. exports to China by value, *Machinery, Electronics, and High-Tech Apparatus*, grew at a rate of 19 percent during the most recent 5-year period versus 9 percent during the previous 5 years.

¹⁶The broad product categories, 10 to be specific, are GAO aggregations of the 99 chapter headings of the HTS. These aggregations are shown in appendix I, table 7. The subcategories are the 99 chapters from the schedule (see app. II, table 14).

¹⁷The finding that exports have accelerated in recent years is robust. The results that latter years have higher growth rates than earlier years hold true using different break points.

¹⁸This category includes raw cotton and hides and skins, which together account for nearly \$2 billion of the \$2.6 billion in U.S. exports in the category in 2004.

Table 1: U.S. Exports to China by the Annual Growth Rate (1995-2004) and Export Value for 2004

Dollars in billions

Goods category	Annual growth rate (percent)			Export value (2004)
	Overall (1995-2004)	First 5 years (1995-1999)	Second 5 years (2000-2004)	
Machinery, electronics, and high-tech apparatus	15%	9%	19%	\$12.8
Chemicals, plastics, and minerals	10	6	20	5.8
Animal and plant products	14	(10)	20	3.4
Aircraft, vehicles and other transportation	5	20	6	2.6
Base metals and articles of base metals	23	2	23	2.6
Textiles, apparel, leather, and footwear	11	(20)	45	2.6
Wood and paper products	17	20	22	1.6
Miscellaneous manufacturing and special provision products	4	0	10	0.5
Prepared foods, beverages, spirits, and tobacco	18	26	20	0.4
Glassware, precious metals and stones, and jewelry	15	14	8	0.3
Total	13%	6%	19%	\$32.7

Source: GAO analysis of U.S. Census Bureau trade statistics.

Notes:

We calculated the annual growth rates by fitting a trend line through the inflation adjusted annual data without constraining the line to go through the first year data. We did not use the average of annual growth rates because the averages can be skewed by occasional large changes in trade.

We adjusted all data for inflation and expressed them in 2004 constant dollars.

U.S. export growth to China was also widespread at the more detailed subcategory level. We found that out of 99 subcategories, exports of 88 subcategories increased in value over the past decade. Comparing the average gain in export value between the first and second parts of the decade (1995 to 1999 and 2000 to 2004), we found that most of the value increase, 59 percent, was driven by the following 5 subcategories (see app. II, table 10, for details):

- *Electric machinery, sound equipment, and television equipment* increased an average of \$2 billion per year, 18 percent of the total increase.

-
- *Nuclear reactors, boilers, machinery* increased an average of \$1.8 billion per year, 15 percent of the total increase.
 - *Oil seeds, grain, seed, fruit and plant* increased an average of \$1.6 billion per year, 14 percent of the total increase.¹⁹
 - *Iron and steel* increased an average of \$800 million per year, 7 percent of the total increase.
 - *Optic photo etc, medical or surgical instruments etc.* increased an average of \$700 million per year, 6 percent of the total increase.

Far fewer subcategories, 9 out of 99, experienced declines in U.S. goods exports to China. Comparing the average loss in export value between the first and second parts of the decade (1995 to 1999 and 2000 to 2004) we found that 88 percent of the export decline was driven by the following 3 subcategories (see app. II, table 11, for details):

- *Fertilizer*²⁰ declined an average of \$560 million per year, 53 percent of the total decline.
- *Cereals*²¹ declined an average of \$185 million per year, 18 percent of the total decline.

¹⁹According to the Department of Agriculture officials, soybeans account for the majority of the increase in exports in this subcategory.

²⁰The Office of the United States Trade Representative noted various market access issues on fertilizer exports to China. These issues include value-added tax rebate and tariff rate quota administration. The value-added tax rebate was intended to encourage domestic fertilizer production, and the fertilizer exporters complained about the complex tariff rate quota administration. An industry expert told us that China's increasing domestic production capacity has driven down the demand for imported fertilizer. For example, according to the data from The Fertilizer Institute, China's capacity for processed phosphate, the main U.S. fertilizer export, increased nearly 33 percent from 2001 to 2004. One other factor driving the decline of fertilizer export was increasing freight cost, which makes importing bulk commodities such as fertilizer more expensive.

²¹Large grain surpluses accumulated during the mid- to late-1990s kept China's grain imports unusually low from 1997 to 2003. However, wheat and rice imports both rose in 2004.

-
- *Animal or vegetable fats, oils etc. and waxes* declined an average of \$176 million per year, 17 percent of the total decline.²²

Among the Factors Driving U.S. Goods Export Growth Are China's Rapid Economic Growth and Market Liberalization

Both rapid economic growth in China and the removal and reduction of Chinese trade barriers have fueled demand for many types of goods in China, particularly raw materials and intermediate inputs for China's booming manufacturing sector. First, U.S. exports have benefited from this increasing demand in China. For example, a Department of Agriculture report noted that U.S. cotton exports surged primarily because of the rapid growth of China's textile and apparel industry, especially in 2005 after the expiration of U.S. and other WTO members' import quotas under the WTO Agreement on Textiles and Clothing. Another contributing factor was cotton shortage following a poor Chinese harvest in 2003. In addition, U.S. exports of integrated circuits—a key component of consumer electronics, such as digital video disk players, cell phones, and global position system devices—have increased because China has become a major manufacturer of consumer electronics and China's domestic production of integrated circuits can only meet around 10 percent to 15 percent of China's demand, according to a Commerce trade expert. Exports of electronic circuits and micro assembling have grown at an annual rate of 47 percent since 1995, reaching over \$2 billion in 2004. Economic growth in China also has fueled demand for energy-related equipment. For example, U.S. exports of gas turbine parts to China increased dramatically in recent years, reaching \$266 million in 2004.

Second, market liberalization has been a factor in the growth of U.S. goods exports to China. Reduction or removal of trade barriers has created opportunities for foreign exporters to access China's market. The United States concluded bilateral negotiations with China on WTO accession in 1999. Then, as part of its 2001 WTO accession agreement, China committed to reducing or eliminating a variety of market access barriers to foreign products. In its agreement, China made specific commitments on the tariff rates for more than 7,000 products covering all imports as well as commitments on trade-distorting practices, such as state trading and quotas, affecting more than 900 products. By 2010, the end of the WTO commitment phase-in period, China's overall average tariff is scheduled to

²²According to Department of Agriculture officials, the decline in this subcategory is a reflection of increasing palm oil imports from Southeast Asia, as well as a dramatic increase in China's domestic oil seed crushing and refining capacity.

be less than 10 percent. China has also committed to removing certain nontariff barriers, such as quotas and licensing, by 2005.

While Overall Services Exports to China Grew during the Past 10 Years, Growth among Services Categories Varied

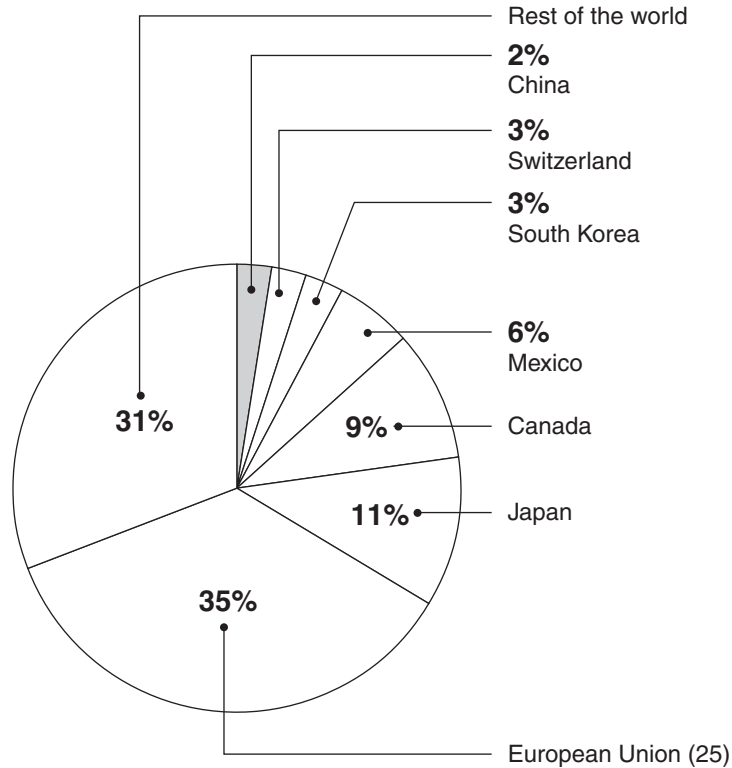
China is a small but growing market for U.S. services. From 1995 to 2004, China moved from the 12th- to the 7th-largest recipient of services exports, and U.S. services exports to China increased both in dollar value and as a share of U.S. world exports. However, U.S. services exports are relatively small, \$7 billion in 2004, compared with goods exports of \$33 billion in 2004. Like goods, U.S. services exports to China grew faster than U.S. services exports to the rest of the world. The annual growth rates for exports varied widely among the 5 main services categories and their subcategories. The services categories that grew the fastest over the decade were *Royalties and License Fees* and *Passenger Fares*. Among the faster-growing subcategories were *telecommunications* and *financial services*, while other subcategories, such as *business, professional, and technical services*, experienced much slower growth. Also like goods, overall increases in U.S. services exports are likely due to the sharp growth of the Chinese economy and the resulting increased demand for services. Slower export growth in some categories may be due to relatively slower trade liberalization in China for services. For example, many WTO services commitments have only recently come into effect or are not yet scheduled to be phased in.

China Is a Growing Destination for U.S. Services Exports, Which Grew Faster Than Overall U.S. Services Exports

Although still small, China is a growing market for U.S. services exports, which grew faster than U.S. services exports to the rest of the world from 1995 to 2004. In 2004, China received 2 percent of total U.S. services exports and was the 7th-largest market for U.S. services, behind the EU²³ at 35 percent, Japan at 11 percent, Canada at 9 percent, Mexico at 6 percent, and South Korea and Switzerland each at 3 percent (see fig. 3). In 1995, China was the 12th-largest. Since then, China has surpassed Australia, Hong Kong, Taiwan, Brazil, and Singapore, which were among the top 12 markets for services exports in 1995.

²³For 2004, BEA only provides data on U.S. exports of services to all 25 current EU member countries, and does not break out the 15 original members. The current 25 EU member countries include Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom.

Figure 3: Top Markets for U.S. Services Exports in 2004

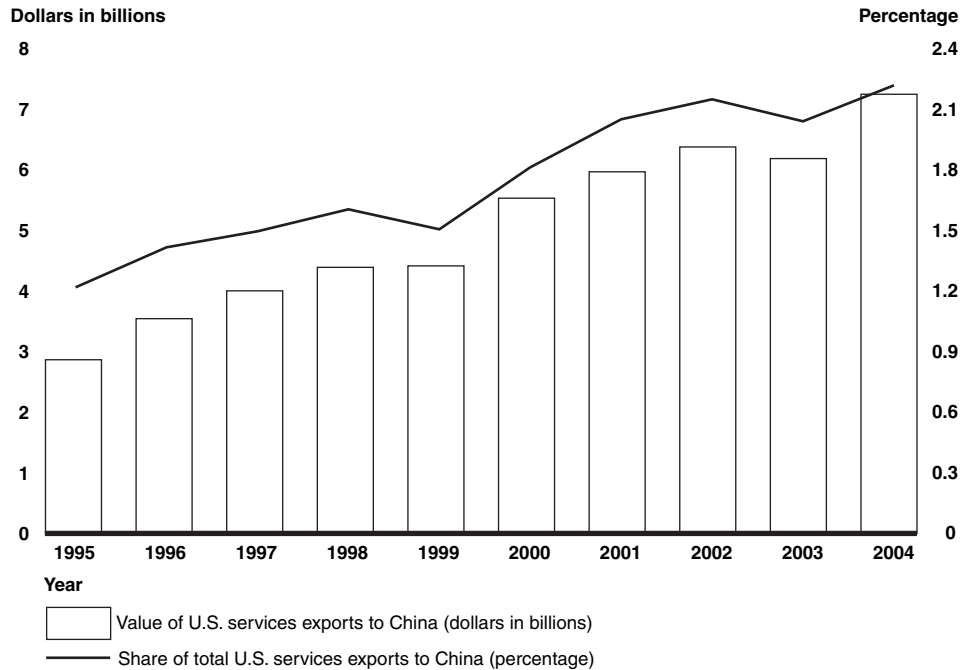


Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data.

Note: We adjusted all data for inflation and expressed them in 2004 constant dollars.

U.S. exports of services to China have grown significantly, with growth moderating somewhat in recent years. The annual growth rate for services exports to China was 10 percent from 1995 to 2004, which was slower than the growth rate for goods (about 13 percent) and faster than the overall growth rate for U.S. services exports to the world (3 percent). As shown in figure 4, from 1995 to 2004, U.S. services exports to China more than doubled in value from \$3 billion to \$7 billion, and China's share of total U.S. services exports to the world also grew from 1 percent to over 2 percent. U.S. services exports grew faster in the first part of the period—services exports grew about 11 percent from 1995 to 1999 versus 6 percent from 2000 to 2004.

Figure 4: Value and Share of U.S. Services Exports to China and as a Share of Total U.S. Services Exports, 1995-2004



Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data.

Note: We adjusted all data for inflation and expressed them in 2004 constant dollars.

U.S. Services Exports to China Grew under All Major Categories, with Some Variation

While services exports grew overall over the past decade, growth rates varied among major categories and subcategories.²⁴ From 1995 to 2004, U.S. services exports to China grew in each of the 5 main services categories: *Travel*, *Passenger Fares*, *Other Transportation*, *Royalties and License Fees*, and *Other Private Services*. (See app. III for a full description of these categories and their subcategories). As shown in table 2, *Royalties and License Fees* grew the fastest over time, with an annual growth rate of 22 percent from 1995 to 2004. While all services categories grew over time, growth rates varied from the first half of the 10-year period to the second half of the period. For example, services in the *Other Transportation* category had an annual growth rate of 11 percent for the whole period and

²⁴Services categories and subcategories are those used by BEA. See appendix III for full definitions of these categories and subcategories.

declined by 4 percent from 1995 to 1999, but grew quickly at a rate of 26 percent from 2000 to 2004.

Table 2: Five Main U.S. Services Exports to China by Annual Growth Rate (1995-2004) and Export Value for 2004

Dollars in millions

Services category	Annual growth rate (percent)			Export value (2004)
	Overall (1995-2004)	First 5 years (1995-1999)	Second 5 years (2000-2004)	
Royalties and license fees	22%	37%	33%	\$928
Passenger fares	17	64	(17)	221
Other transportation	11	(4)	26	1,804
Other private services	11	12	9	3,392
Travel	1	16	(9)	894
Total	10%	11%	6%	\$7,239

Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data.

Notes:

For information about services categories and their definitions, see appendix III.

We adjusted all data for inflation and expressed them in 2004 constant dollars.

The U.S. government also collects some data on sales of services to China at the subcategory level. As shown in table 3, all but 1 subcategory under the main category of *Other Private Services* grew overall from 1995 to 2004.²⁵ Growth ranged from 24 percent for *insurance services* to 8 percent for the *business, professional, and technical services* category, and there was a 1 percent decline for *Other Private Services*. U.S. export growth rates under some of these subcategories also varied between the two periods. For example, exports of *financial services* grew 12 percent in the first period, from 1995 to 1999, and 27 percent in the second period, from 2000 to 2004. One large subcategory for services sales was *education*, which comprised about half the value of *Other Private Services* exports, \$1.3 billion in 2004, and consists of tuition and living expenses of foreign students enrolled in U.S. colleges and universities.

²⁵At this level, however, only unaffiliated data are available. BEA does not publish country-specific affiliated services data at the subcategory level.

Table 3: Subcategory of U.S. Services Exports to China by the Annual Growth Rate (1995-2004) and Export Value for 2004

Dollars in millions

Subcategory of other private services	Annual growth rate (percent)			Export value (2004)
	Overall (1995-2004)	First 5 Years (1995-1999)	Second 5 Years (2000-2004)	
Insurance services	25%	14%	20%	\$23
Financial services	22	27	12	165
Telecommunications	14	10	9	90
Education	10	10	6	1,260
Business, professional, and technical services	8	10	9	1,216
Other ^a	(1)	(9)	5	127
Total	8%	9%	10%	\$2,882

Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data.

Notes:

For information about services categories and their definitions, see appendix III.

We adjusted all data for inflation and expressed them in 2004 constant dollars.

^aFor *other* services, growth rates are estimated due to unavailable data for some years.

The U.S. government collects further data on the subcategory of *business, professional, and technical services*, which encompasses a number of key areas, including *legal, advertising, and computer and information services*. As shown in table 4, from 1995 to 2004, growth rates in exports in these subcategories varied from a 2 percent annual decline for *construction, architectural, and engineering services*, to a 21 percent annual growth for *research and development and testing services*. Comparing the first and second half of the decade in table 4, exports in these services appear to be somewhat volatile, since some industries experienced declines and then growth or vice versa during the two periods. However, because exports for subcategories under *business, professional, and technical services* are relatively low (less than \$100 million in most cases) changes from one year to the next can drastically affect overall growth rates.

Table 4: Subcategory of U.S. Services Exports to China by the Annual Growth Rate (1995-2004) and Export Value for 2004

Dollars in millions

Subcategory of business, professional, and technical services	Annual growth rate (percent)			Export value (2004)
	Overall (1995-2004)	First 5 Years (1995-1999)	Second 5 Years (2000-2004)	
Research and development and testing	21%	25%	7%	\$14
Legal	15	24	9	60
Advertising ^a	12	12	36	6
Management, consulting, and public relations	9	(1)	36	53
Installation, maintenance, and repair of equipment	6	(5)	5	199
Computer and information	5	1	11	48
Construction, architectural, and engineering	(2)	6	(1)	328
Total	8%	10%	9%	\$1,216

Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data

Notes:

For information about the services categories and their definitions, see appendix III.

We adjusted all data for inflation and expressed them in 2004 constant dollars.

^aBEA did not publish a figure for *advertising* for 1995, so growth rates are calculated from 1996 to 2004.

U.S. Services Exports Aided by Chinese Economic Growth but Limited by Slower Trade Liberalization to Date

Like goods, the growth in U.S. services exports to China over the past decade was driven in part by China's sharp economic expansion. However, in contrast to goods, the overall value of services exports is smaller and individual categories and subcategories experienced more variable growth. The smaller value of U.S. services exports to China is consistent with world trade patterns with the United States. Trade in services tends to be smaller than trade in goods in part because many services require some type of direct contact or local presence and thus are harder to provide across international borders. In addition, China is following a common trend among developing countries, which usually have relatively small services sectors, according to the World Bank. However, the smaller overall value of services exports and variable growth rates among services categories may also be due to the fact that China's services sector is yet to be fully liberalized. For example, most market access commitments for services are to be phased in by 2007. Finally, China's export-oriented growth has depended on the industrial sector, rather than services.

While China's WTO commitments for services are to provide foreign services providers with increased access to a number of sectors, including business services, communications services, financial services, and tourism- and travel-related services, many of these commitments have only recently come into effect or are yet to be phased in. For example, under financial services, insurance was scheduled to be fully liberalized over a 5-year period, thereby relaxing many restrictions, such as selective licensing processes and geographic limitations. In another example, in the financial services area, U.S. banks will be able to provide local (Chinese) currency services without geographic and client limitations by 2006; and telecommunications is also scheduled to be liberalized by 2007, when foreign providers will be allowed to offer a broad array of telecommunications services with no geographic restrictions, although only through joint ventures with Chinese partners. International Trade Commission officials contend that joint venture requirements may, in part, explain the smaller value for U.S. services exports compared with goods exports to China. Office of the United States Trade Representative (USTR) officials noted that implementation problems have inhibited market access for services.²⁶

However, a portion of U.S.-China services trade does not depend upon market access. For example, some U.S. services exports are delivered to Chinese residents by virtue of the Chinese residents traveling to the United States to consume these services. Thus, although exports in the subcategory of *education* are among the largest in terms of dollar value, a good portion of those exports are tuition and living expenses of foreign students enrolled in U.S. colleges. Similarly, a portion of *telecommunications* exports is international calls from China to the United States.

Finally, a good portion of services trade depends not only upon exports, but also upon foreign direct investment and establishing commercial presence, or selling services through local U.S. affiliates.²⁷ This is also the case in China. A Commerce trade expert told us that cross-border trade in services is small relative to the Chinese domestic market, since many services must

²⁶For a thorough discussion of Chinese WTO compliance problems, see United States Trade Representative, *2004 Report to Congress on China's WTO Compliance* (December 2004).

²⁷A U.S. affiliate abroad is an incorporated or unincorporated enterprise in which an investor, who is resident in another economy, owns a stake that permits a lasting interest in the management of that enterprise (an equity stake of 10 percent).

be provided by firms located in China, and the real potential for growth in services trade is in affiliate sales. For example, while exports in *telecommunications* are growing, the real potential is in providing telecommunications services to China's domestic market, such as improving telephone service, which requires setting up local operations. In another example, according to an official from the Coalition of Service Industries, *business, professional, and technical services* are especially important to coalition members as well as to the Chinese government because the Chinese are anxious to form joint ventures to increase their expertise. The official said that it took a smaller investment to locate services in China compared with a manufacturing plant, especially for financial services, where coalition members preferred to do business through joint ventures and branches.²⁸

U.S. Goods Exports Have Not Kept Pace with Other Nations' Exports to China

Although U.S. goods exports to China have grown rapidly, other countries, particularly a few Asian countries, have experienced even higher export growth to China, resulting in a drop in total U.S. market share of total world exports to China.²⁹ Similarly, other large suppliers to China, such as the EU and Japan, have experienced declines in their shares, while certain Asian countries, such as South Korea and Taiwan have increased their shares of overall exports to China. The U.S. decline covers a wide range of products, including autos and parts, plastics and organic chemicals, and optical machinery. However, the United States did increase export share in other products, particularly agricultural goods, such as prepared meats and fish, and preserved fruits and vegetables.³⁰ The U.S. share of exports to China has declined partly due to the rise of existing smaller exporters and partly due to the growing number of new countries exporting to China. In particular, as local Asian production processes became more integrated, other East Asian and Southeast Asian countries became larger suppliers of China's growing manufacturing and assembly operations. Another reason

²⁸U.S. foreign direct investment and affiliate sales in China are discussed later in this report.

²⁹Bilateral Chinese services data are not available to allow an analysis of how the United States compares with other services exporters to China. Therefore, the discussion in this section is focused solely on goods and not services. See appendix I.

³⁰Our analysis of the U.S. share of world exports to China is based on official Chinese trade statistics, which we express in nominal dollars. We were not able to identify an appropriate trade deflator for Chinese trade statistics in order to remove the potential effect of inflation or deflation on the values.

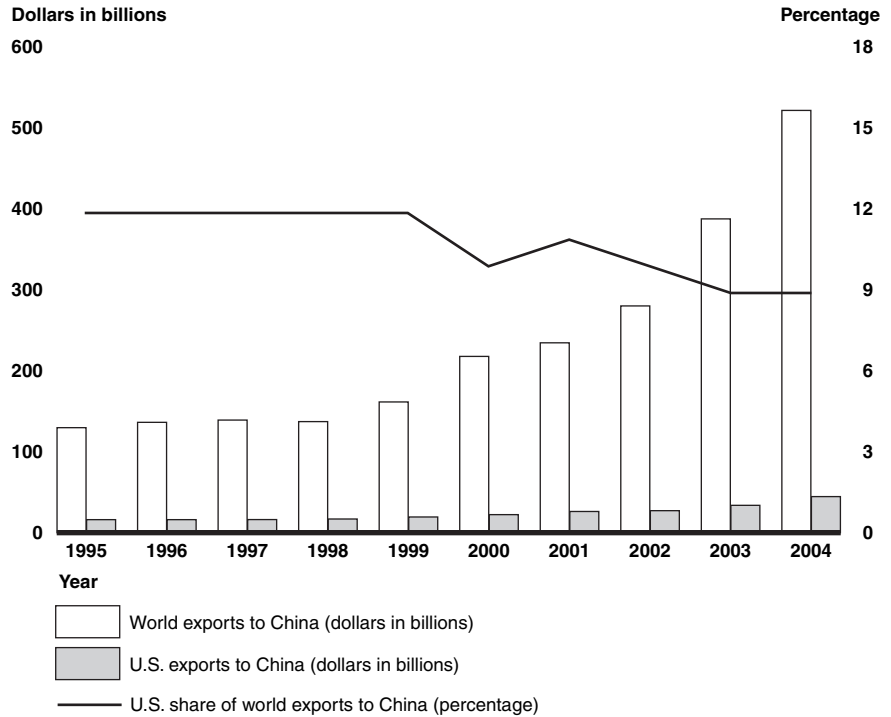
for the declining market share was the quickly increasing Chinese imports of natural resources, such as petroleum, for which the United States is not a major supplier to China. Finally, other macroeconomic and industry-specific factors may have played a role in the declining U.S. market share.

U.S. Share of Chinese Import Market Has Declined over the Last Decade

Although the value of U.S. goods exports to China has increased every year for the past 10 years, the U.S. share of total exports from all countries to China has declined. The U.S. share of world goods exports to China fell from about 12 percent in 1995 to about 9 percent in 2004,³¹ according to Chinese trade statistics. Figure 5 shows the values of world and U.S. goods exports to China as well as the U.S. percentage of world exports to China. As figure 5 shows, overall world exports to China have grown significantly, more than quadrupling from about \$130 billion in 1995 to about \$522 billion in 2004 (unadjusted for inflation), according to Chinese trade statistics.

³¹See appendix I for a discussion of the reliability of Chinese trade statistics. We use Chinese trade statistics in this section in order to compare how U.S. exports to China fare relative to other countries' exports to China. U.S. and Chinese trade statistics differ substantially in the value of trade they report between the two countries.

Figure 5: U.S. and World Goods Exports to China and U.S. Share of World Goods Exports to China, 1995-2004



Source: GAO analysis of official Chinese trade statistics.

Notes:

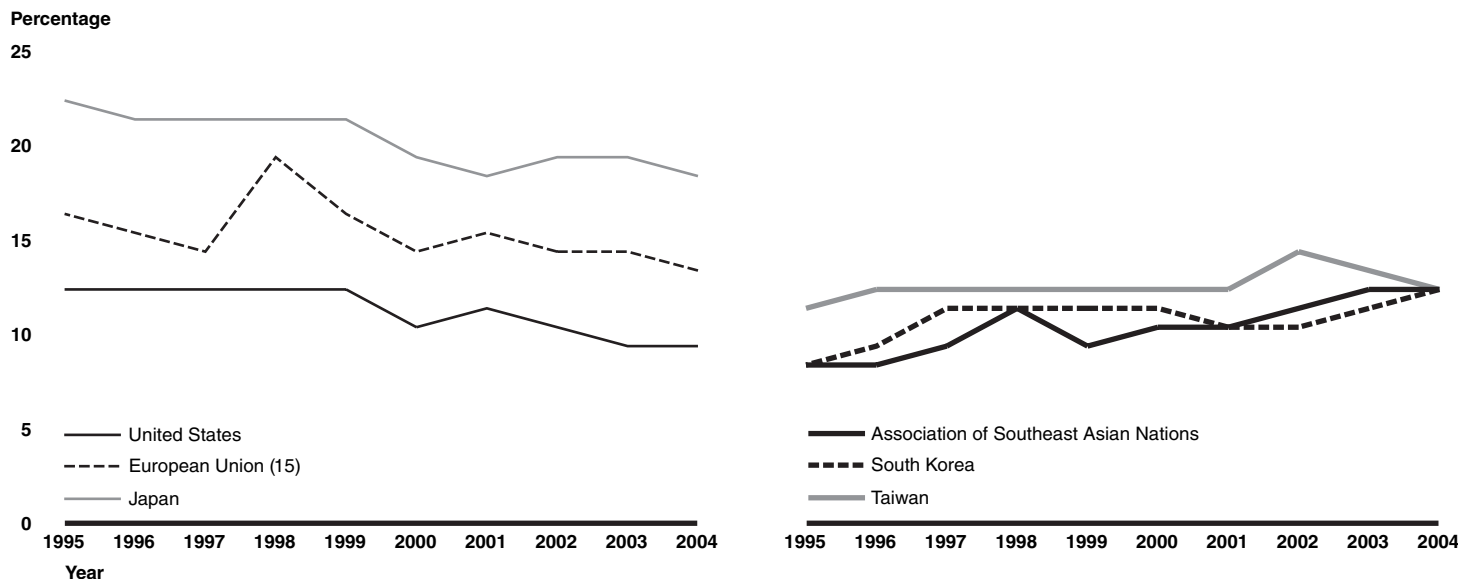
Values for U.S. exports to China differ according to whether they are reported by China or by the United States. The figure reports the Chinese statistics in order to compare them with overall exports to China. See appendix I for more discussion of these statistics.

We report Chinese trade statistics in nominal dollars. We were not able to identify an appropriate trade deflator for Chinese statistics in order to remove the potential effect of inflation or deflation on the values. See appendix I for more discussion of these statistics.

At the same time, other large suppliers to China also experienced declines in their share of world goods exports to China. Japan and the EU lost overall export share; although, like the United States, they had growing exports to China during the past decade. For example, Japan's share fell from 22 percent to 18 percent and the EU's share fell from 16 percent to 13 percent from 1995 to 2004. In contrast, other Asian countries, such as Indonesia, South Korea, Malaysia, Singapore, and Taiwan, increased their export share and, in some cases, surpassed the United States. Regionally, Indonesia, Malaysia, and Singapore are all members of the Association of

Southeast Asian Nations (ASEAN),³² which have increasingly integrated their production and trade with China.³³ The United States was the 3rd-largest exporter to China in 1995, but fell to the 6th-largest in 2004, as shown in figure 6. South Korea, Taiwan, and the ASEAN surpassed the United States and drew close to overtaking the EU by 2004. The remaining countries as a group increased their share of China’s market as well, from about 22 percent in 1995 to 24 percent in 2004. Russia was the 7th-largest exporter to China in 2004 (at about 2 percent), followed by Hong Kong and Australia.³⁴ Japan and the EU have, since at least 1995, been larger suppliers to the Chinese market than the United States.

Figure 6: Share of Goods Exports to China for the Top Six Suppliers, 1995-2004



Source: GAO analysis of official Chinese trade statistics.

³²The ASEAN has 10 member countries, including Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

³³In the discussion and figure that follow, we calculate trade statistics for ASEAN countries as a group.

³⁴Chinese trade statistics include “China” as one of the supplying countries. This represents the reimports of Chinese-produced products that have been temporarily exported outside of China, but were then reimported without substantial transformation in the receiving country. We exclude these reimports from our analysis of Chinese trade statistics.

Most U.S. Export Categories Have Lost Share of World Goods Exports to China

Despite overall growth in exports to China, the United States lost share of world goods exports to China in 7 out of the 10 goods categories between the first and second half of the 10-year period (average annual share 1995 to 1999 versus 2000 to 2004),³⁵ as highlighted in table 5. For example:

- *Aircraft, Autos, and Other Transportation*: U.S. share dropped 7 percentage points from 28 percent to 21 percent, even though U.S. exports grew annually on average by 5 percent between 1995 and 2004.
- *Chemicals, Plastics, and Minerals*: U.S. share fell 4 percentage points, although U.S. exports grew annually on average by 10 percent, between 1995 and 2004.
- *Machinery, Electronics, and High-Tech Apparatus*: U.S. share lost 3 percentage points, despite the fact that U.S. exports grew annually on average by 15 percent between 1995 and 2004, and this was the largest category by value of U.S. exports, \$13 billion in 2004.

Table 5: Changes in U.S. Share of World Exports to China, 1995-2004; and U.S. Goods Exports to China, 2004

Dollars in millions

Goods category	Average U.S. share of world exports to China (percent)			U.S. goods exports to China (2004)
	Percentage point change (B minus A)	First 5 years (1995-1999) (A)	Second 5 years (2000-2004) (B)	
Aircraft, autos, and other transportation	(7)%	28%	21%	\$2,630
Chemicals, plastics, and minerals	(4)	11	7	5,760
Machinery, electronics, and high-tech apparatus	(3)	13	10	12,800
Glassware, precious metals and stones, jewelry	(3)	10	7	328
Miscellaneous manufacturing	(1)	8	7	510
Base metals and articles of base metals	(1)	6	5	2,620
Wood and paper products	(1)	15	14	1,640
Textiles, apparel, leather, and footwear	0	7	7	2,550

³⁵Since annual export shares can vary a great deal from year to year, averaging the two 5-year periods and comparing them removes some of this annual fluctuation and focuses on broader changes. For verification, we also examined the annual and 3-year average export shares to confirm the results presented here.

(Continued From Previous Page)

Dollars in millions

Goods category	Average U.S. share of world exports to China (percent)			U.S. goods exports to China (2004)
	Percentage point change (B minus A)	First 5 years (1995-1999) (A)	Second 5 years (2000-2004) (B)	
Prepared food, beverages, spirits, and tobacco	3	13	16	406
Animal and plant products	1	24	25	3,410
Total	(3)%	12%	9%	\$32,654

Source: GAO analysis of Chinese and U.S. Census Bureau trade statistics.

Notes:

Broad product categories are GAO aggregations of the chapters from the U.S. Harmonized Tariff Schedule of the United States. For more information on these categories, see appendix I, table 7.

Shaded product categories indicate a decline in U.S. share of world exports to China.

The U.S. share of world exports are based on Chinese trade statistics.

U.S. exports to China in 2004 are from U.S. statistics that we adjusted for inflation and expressed in 2004 constant dollars.

At a more detailed subcategory level, changes in U.S. export share were mixed. Within the 10 goods categories, we found that a slight majority of individual subcategories (55 out of 99 subcategories) experienced a decline in the U.S. share of world exports to China.³⁶ Some subcategories for which U.S. market share declined had high export values and were major contributors to export increases (see app. II, table 12, for the top 20 subcategories in terms of market share decline). For example:

- *Oil seeds*, with \$2.4 billion in exports in 2004, lost 12 percentage points in share between the first and second half of the decade, although it contributed to 14 percent of the total export increase over the period.
- *Optic, photo, medical*, with \$2 billion in exports in 2004, lost 6 percentage points in share between the first and second half of the decade, although it contributed to 6 percent of the total export increase over the period.

³⁶Of the 99 subcategories, 42 grew in their export share from the first half of the decade (1995 to 1999) compared with the second half (2000 to 2004). The subcategories are the 99 chapters from the HTS schedule (see app. II, table 14).

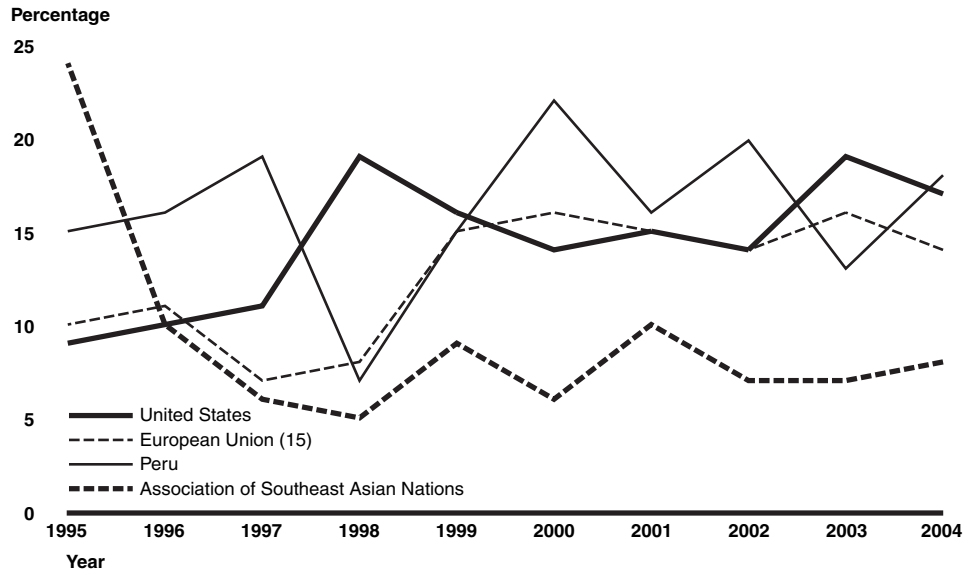
The two subcategories that contributed the most to export increases between the first and second half of the decade also lost market share, but to a lesser extent.

- *Electrical machinery*, with \$5 billion in exports in 2004, lost 2 percent market share, although it contributed to 18 percent of the total export increase over the period. This subcategory includes high-tech products, such as telecommunications equipment, fiber optics, and computer parts.
- *Machinery (other than electrical)*, with \$6 billion in exports in 2004, lost 2 percent market share, although it contributed to 15 percent of the total export increase over the period.

Many U.S. Agricultural Goods Have Increased Their Share of World Exports to China

Only categories related to agricultural goods have gained or maintained U.S. worldwide market share in China, with the exceptions previously noted. The largest overall increase was in the category of *Prepared Food, Beverages, Spirits, and Tobacco*, in which the United States increased its share of world exports to China by 3 percentage points, from 13 percent to 16 percent over the decade (see table 5). The U.S. export increase in this category moved the United States from the 4th-largest supplier to China in 1995 to the 2nd-largest supplier of that category in 2004, behind Peru (see fig. 7). According to the Department of Agriculture, exports to China from Peru are primarily fish meal.

Figure 7: Major Suppliers' Share of World Exports to China of Prepared Food, Beverages, Spirits, and Tobacco, 1995-2004



Source: GAO analysis of official Chinese trade statistics.

For the other 2 agriculture-related categories, the United States increased its share by about 1 percent in *Animal and Plant Products*, while its share remained relatively stable in *Textiles, Apparel, Leather, and Footwear* at about 7 percent over the decade, on average. (See app. II, table 13, for the 20 subcategories by increase in the U.S. share of world goods exports to China.)

Again, at the more detailed subcategory level within these broad agricultural categories, changes in export share were mixed.³⁷ Most subcategories under *Prepared Food, Beverages, Spirits, and Tobacco* have increased their world export share in China. For example:

- *Prepared meats and fish* increased by 20 percentage points, from 11 percent to 31 percent over the decade.

³⁷Appendix II, table 13, shows the top 20 subcategories by increase in U.S. share of world exports to China.

-
- *Preserved foods*, including a wide range of fruits, vegetables, nuts, and juices, grew by 14 percentage points, from 31 percent to 45 percent over the decade.

However, some subcategories under *animal and plant products* experienced mixed results. For example:

- *Lac, gums and resins* grew in share over the decade from 16 percent to 32 percent; *edible fruits and nuts* increased from 7 percent to 15 percent.
- *Edible vegetables and certain roots and tubers* declined from 19 percent to 8 percent; *animal or vegetable fats, oils etc. and waxes* declined from 13 percent to 3 percent.

Growing Asian Production, Oil Imports, and Macroeconomic Factors Were among the Reasons for Decreased U.S. Export Share in China

Over the past decade, the U.S. share of world exports to China has declined for a variety of reasons. The loss in the U.S. share of worldwide exports to China has occurred as the volume of exports from smaller exporters has grown and the number of countries exporting to China has increased. These trends are due to multiple factors. For example, greater integration of Asian production processes has helped certain other Asian countries become larger suppliers of China's growing manufacturing and assembly operations. Also, China's resource-based imports, including those from oil-producing countries, rose sharply as its rapid economic growth increased demand for raw materials. In addition, macroeconomic factors that influence the overall U.S. trade deficit, including exchange rates with China and other Asian countries, as well as industry-specific circumstances, are likely to have affected the overall U.S. export share.

Individual countries, particularly those from Asia, have increased their share of world exports to China at the expense of the United States and other large suppliers. South Korea, Taiwan, and ASEAN countries, including Indonesia, Malaysia, and Singapore, have all increased their export share overall and in many particular products (e.g., autos and parts, and electronics). There are several reasons why these countries may have increased their market share in China. Regional economies in Asia have increasingly integrated their production processes, producing parts for products in one location and shipping them to another for assembly. China has become a key component of this process due to its relatively low labor costs and large-scale production potential. For example, China is a major producer of electronic products, such as computers and video players,

which may be sold domestically or exported worldwide. As an indication of this, China's largest import and export subcategory is electrical machinery, which includes finished products, such as consumer electronics, as well as components used in their production, such as electronic circuits.

In addition, this greater integration of production processes can affect trade trends. For example, U.S. components and parts exports first sent to other countries and incorporated into those countries' exports to China are not captured in U.S.-China bilateral trade statistics. Trade statistics only show direct imports and exports between countries. For products that are produced by a process that involves a series of locations, trade statistics generally do not capture the value of inputs coming from locations other than the last point of export. Therefore, for some U.S.-made components, such as semiconductors, that are modified and added to in Malaysia, Singapore, and the Philippines before being sent to China for use in cell phones and computers, trade statistics do not generally count them as U.S. exports to China, but as U.S. exports to Singapore or the Philippines.

Furthermore, as the number of countries that export to China expands,³⁸ 1 export category that is particularly relevant is *chemicals, plastics, and minerals*, which had the 2nd-highest U.S. export value in 2004 and includes resource-based products, particularly petroleum products, which United States exports very little to China. All major suppliers lost overall export share in this category as a wider range of countries supplied exports in this category between 2002 and 2004. Petroleum products are one of the fastest-growing Chinese imports in recent years and accounts for a substantial share of overall Chinese imports. In fact, imports of crude oil from petroleum and bituminous minerals³⁹ was the 2nd-largest Chinese import by value in 2004, worth about \$34 billion and accounting for over 6 percent of total Chinese imports, according to Chinese statistics. Many oil-producing countries' exports to China grew faster than the average annual

³⁸Between 1995 and 1997, the number of countries that exported to China increased from 203 to 224. Between 1995 and 1997, the top 10 exporters accounted for 74 percent of world exports to China. This percentage fell to 70 percent between 2002 and 2004. Similarly, the top 20 suppliers dropped from 89 percent of world exports to China between 1995 and 1997 to 85 percent between 2002 and 2004.

³⁹Crude oil from petroleum and bituminous minerals is a product description at the four-digit level of detail in the HTS.

growth rate of 27 percent for all countries from 2000 to 2004. Table 6 lists examples of oil-producing countries with high growth rates.⁴⁰

Table 6: Examples of Oil-Producing Countries with Higher-Than-Average Export Growth Rates to China, 2000-2004

Dollars in millions

Country	Annual growth rate (2000-2004)	Export value (2004)
Chad	1,100%	\$223
Congo	59	1,569
Saudi Arabia	40	7,518
Angola	35	4,718
United Arab Emirates	33	1,305

Source: GAO analysis of official Chinese trade statistics.

Note: We reported Chinese trade statistics in nominal dollars.

Finally, there are also a variety of other broad macroeconomic factors, such as exchange rates as well as industry-specific circumstances that may have affected the U.S share of world exports to China. For example, many economists believe the Chinese renminbi/yuan is undervalued relative to the U.S. dollar, and certain Asian currencies that experienced devaluations during the Asian financial crisis may therefore have a competitive advantage in China. A higher-valued dollar would be expected to have a dampening effect on U.S. exports to China by making U.S. exports more expensive in the Chinese market relative to other countries' exports. Also, industry-specific circumstances may provide certain countries with export advantages over those of the United States. For example, some industries' companies from other countries may have been operating in the Chinese economy for longer than U.S. companies and may be gaining in export share due to their greater experience. Also, according to one Commerce specialist, some countries have provided "tied-aid" to China in which they provide financial support for certain types of investments such as environment projects, if their companies, rather than U.S. companies, are able to supply the materials and components for the project. Also, in the

⁴⁰We report growth rates based on Chinese trade statistics in nominal dollars since there is no appropriate deflator readily available. However, because the time span is only 5 years, the real growth rate is not likely to be significantly different.

agricultural sector, Chinese concerns about animal and plant diseases may restrict, at least temporarily, access of U.S. agricultural products and reduce U.S. export share.

U.S. Investment in China Has Increased, and Affiliate Sales Surpassed U.S. Exports

Through increased foreign direct investment in China, U.S. affiliate sales have exceeded U.S. exports to China, since U.S. companies have increasingly sold their goods and services directly to the Chinese market through their local affiliates. Although small, U.S. investment in China has been growing and investment levels have been similar to that of China's other trading partners. U.S. companies generally concentrated their investments in China in the manufacturing sector, in industries such as *transportation equipment, chemicals, and computers and electronic products*. U.S. investment in China funds the creation of U.S. affiliates, who then sell in China and to other countries, including the United States, and U.S. affiliate sales of goods and services have become an important avenue for accessing the Chinese market. In fact, the value of U.S. affiliate sales in China has exceeded the value of U.S. exports to China since 2002.⁴¹ Factors such as the growing Chinese market, lower labor costs, and China's WTO accession have allowed U.S. companies to increase their investment and sales in China, although some challenges remain.

U.S. Foreign Direct Investment in China Has Grown, Mostly in Manufacturing

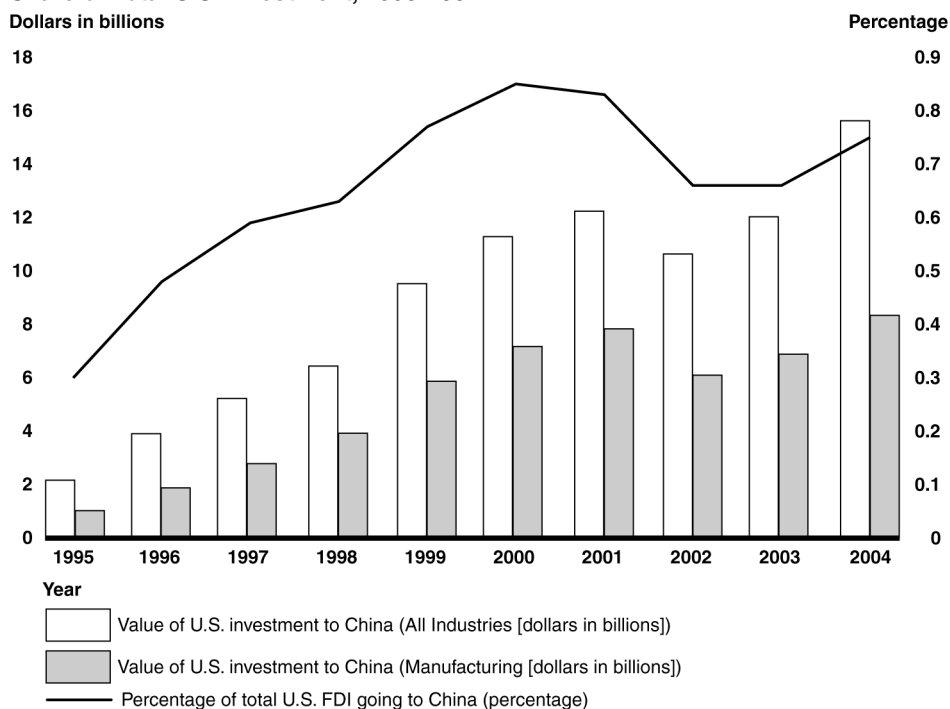
U.S. foreign direct investment in China, although relatively small as a share of total U.S. foreign investment, has grown and is concentrated mainly in manufacturing (see fig. 8). In 2004, China ranked 12th as a recipient of U.S. investment, and the cumulative stock of U.S. investment in China was \$15 billion.⁴² This was a relatively small amount compared with U.S. investment going to other major U.S. trading partners. For example, in 2004, the cumulative stock of U.S. investment in the EU, Canada, and Japan was \$952 billion, \$217 billion, and \$80 billion, respectively.

⁴¹Sales by U.S. affiliates are the total value of sales by U.S. majority-owned affiliates located in China to the Chinese market. Data on sales by all U.S. affiliates (majority and minority-owned) are not available for just the Chinese market, but include any sales by these affiliates to China or another country.

⁴²The U.S. foreign direct position in China is measured on an historical cost basis by BEA. The historical cost basis represents the book value of U.S. direct investor's equity in, and net outstanding loans to, their foreign affiliates.

However, U.S. investment in China has grown. For example, the cumulative stock of U.S. investment in China grew from \$2 billion in 1995 to \$15 billion in 2004. In addition, according to Chinese statistics, U.S.-realized annual investment flows⁴³ into China grew at about 6 percent annually from 1995 to 2003. This growth rate matched that of the EU (also 6 percent) and slightly exceeded that of Japan (4 percent) during the same period.

Figure 8: U.S. Foreign Direct Investment in China, Value of Cumulative Stock, and Share of Total U.S. Investment, 1995-2004



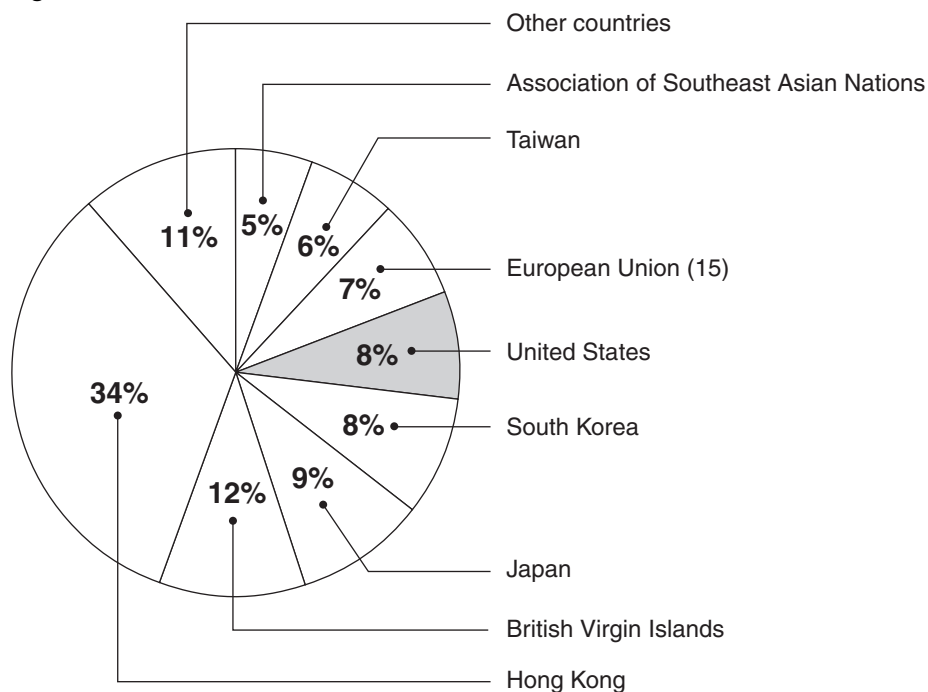
Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data.

U.S. investment levels in China were similar to those of its other trading partners. According to Chinese statistics, in 2003, 8 percent of China's realized annual investment flows came from the United States, compared with 7 percent from the EU, 8 percent from Korea, 9 percent from Japan, 6

⁴³The *Chinese Statistical Yearbook* reports the total amount of realized foreign direct investment, which represents the annual flow of investment into China, rather than the cumulative stock.

percent from Taiwan, and 5 percent from the ASEAN. While Chinese statistics show Hong Kong as providing 34 percent of investment in China, this figure may be inflated by mainland Chinese investment going through Hong Kong. In 2003, the United States was the 5th-largest investor with \$4 billion of realized annual investment flows in China, behind Hong Kong, the British Virgin Islands,⁴⁴ Japan, and Korea (see fig. 9).

Figure 9: Realized Annual Investment Flows in China, from the World, 2003



Source: GAO analysis of official statistics from the *China Statistical Yearbook*.

Notes:

Realized investment represents the actual annual flow of investment. For example, in a 3-year contract to invest \$100 million, the realized annual investment might be \$25 million the 1st year, \$50 million the 2nd year, and \$25 million the 3rd year.

Total foreign direct investment in China in 2003 was \$53.5 billion.

⁴⁴Some foreign firms, including U.S. companies, are registered in the British Virgin Islands for taxes.

BEA classifies data on U.S. investment abroad by industry, using a classification system that is based on sales information, which companies report in surveys. BEA collects data on foreign affiliates' production of goods, sales of goods, and services. The major industries for which it collects data include, among others, *mining, utilities, and manufacturing and wholesale trade*. In 2004, U.S. investment in China was concentrated in *manufacturing*, with over half of the cumulative stock of U.S. investment in China, or \$8.2 billion. Other broad industry groupings in which U.S. companies invested their cumulative stock in China in 2004 included *wholesale trade* at \$1.8 billion, and *mining* at \$1.7 billion (see app. IV, table 15). BEA also classifies data on U.S. investment by subcategories in the manufacturing sector. Examples of U.S. investment in manufacturing subcategories included \$1.8 billion in the *transportation equipment* industry, \$1.6 billion in the *chemicals* industry, and \$1.3 billion in the *computers and electronic products* industry (see app. IV, table 16).

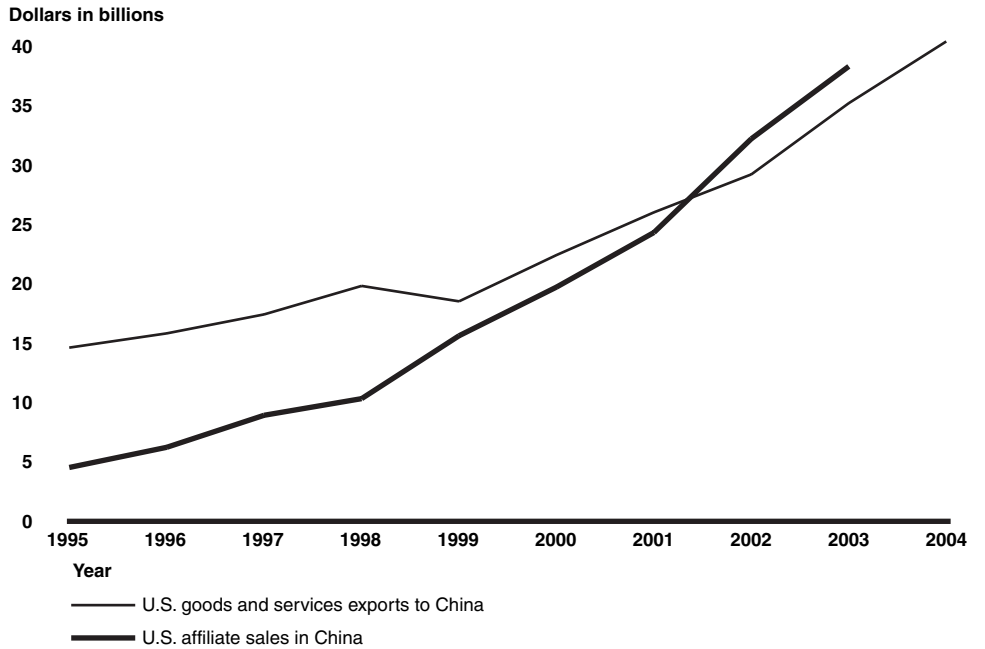
U.S. Affiliate Sales in China Surpassed U.S. Exports to China

With their \$15 billion investment in Chinese manufacturing and other sectors, U.S. companies have established local affiliate companies that increasingly sold their goods and services to the Chinese market. In 2003, U.S. majority-owned affiliate companies sold about 75 percent of their goods and services, or about \$38 billion,⁴⁵ in China to the Chinese market. The remaining 25 percent of goods and services were sold to other countries. These sales included goods and services that were exported back to the United States, about 7 percent of the total. This indicates that most U.S. companies' investment is meant to access the Chinese market, rather than using China to provide goods and services back to the U.S. market.

By 2002, U.S. companies sold more goods and services in China through their local affiliates than they exported from the United States. By 2003, U.S. affiliates in China sold about \$38 billion in goods and services to China, while U.S. exports to China that same year were \$35 billion. The annual growth rate of affiliate sales was 33 percent between 1995 and 2003, compared with 11 percent for U.S. exports. Figure 10 shows affiliate sales from 1995 to 2003 and exports from 1995 to 2004.

⁴⁵The affiliate sales data were available through 2003. We adjusted the data for inflation and expressed them in 2004 constant dollars.

Figure 10: Growth of Total (Goods and Services) U.S. Affiliate Sales in China and U.S. Exports to China, 1995-2004



Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data.

Notes:

Data on U.S. affiliate sales are through 2003.

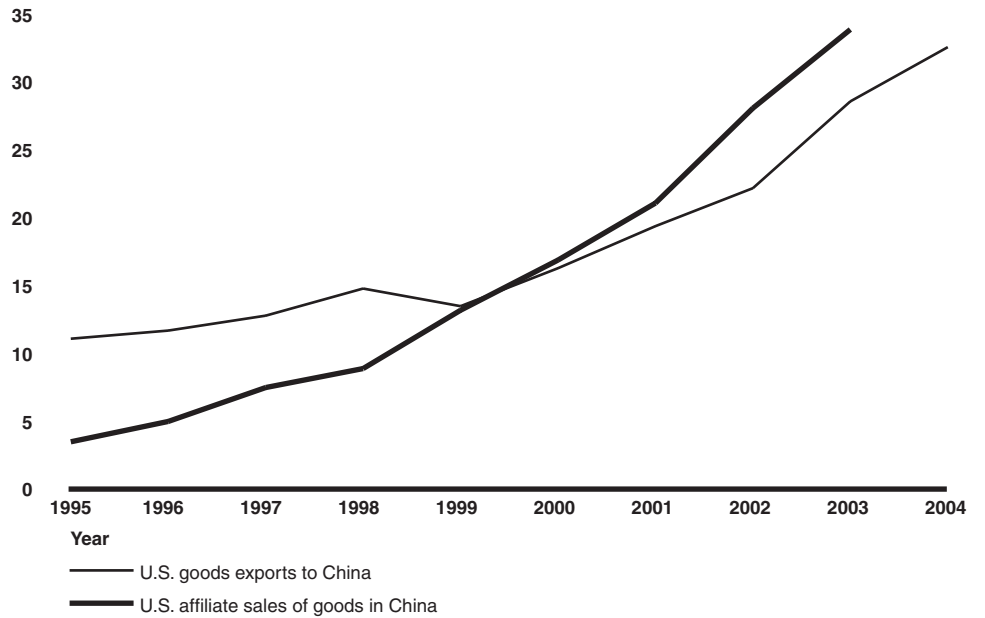
We adjusted all affiliate sales data for inflation and expressed them in 2004 constant dollars.

For goods alone, U.S. affiliate sales in China have also surpassed U.S. exports since 2001 (see fig. 11). In 2003, U.S. affiliates sold about \$34 billion in goods to the Chinese market, while U.S. companies sold about \$29 billion through exports that same year.⁴⁶ The annual growth rate of affiliate sales of goods was 33 percent between 1995 and 2003, compared with 13 percent for U.S. exports of goods.

⁴⁶BEA also collects data from U.S. industries on their affiliates' total goods sales and total services sales. However, BEA does not collect goods data or services data by industry.

Figure 11: Growth of U.S. Affiliate Sales of Goods in China and U.S. Goods Exports to China, 1995-2004

Dollars in billions



Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data.

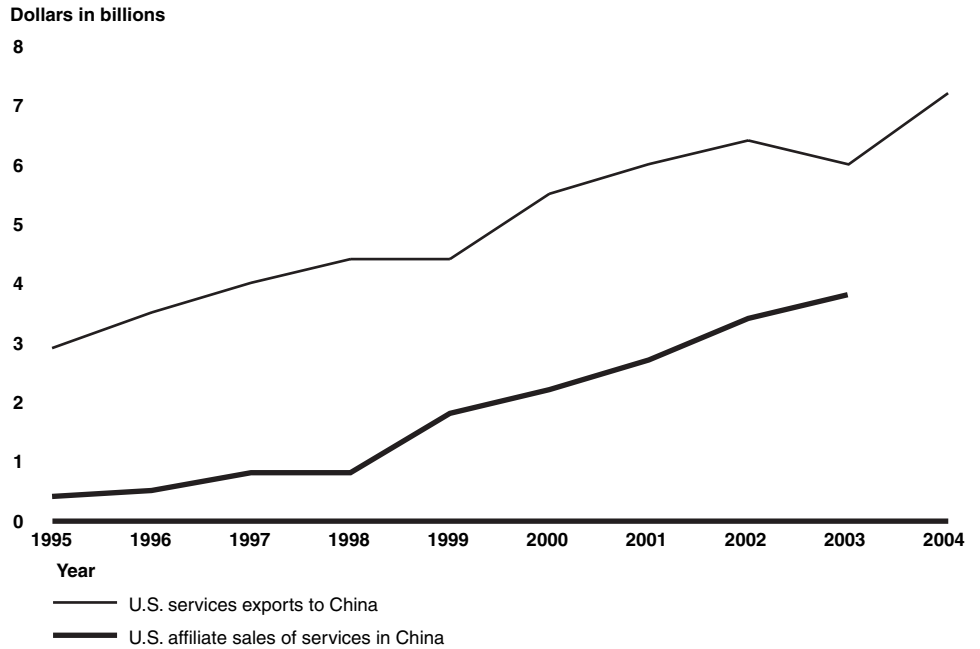
Notes:

Data on U.S. affiliate sales are through 2003.

We adjusted all data for inflation and expressed them in 2004 constant dollars.

Unlike goods sales, U.S. companies export more services to China through cross-border trade than they sell through affiliates. U.S. affiliates' services sales in China were at levels about two-thirds that of U.S. services exports in 2003, that is, \$4 billion in affiliate sales versus \$6 billion in exports (see fig. 12). U.S. affiliates' services sales in China were growing faster—that is, the annual growth rate of affiliate sales of services was 36 percent between 1995 and 2003, compared with 10 percent for U.S. exports of services. However, services are not a major component of sales by U.S. affiliates in China and accounted for about 10 percent of all sales by U.S. affiliates located in China.

Figure 12: Growth of U.S. Affiliate Sales of Services in China and U.S. Services Exports to China, 1995-2004



Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data.

Notes: Data on U.S. affiliate sales are through 2003.

We adjusted all data for inflation and expressed them in 2004 constant dollars.

The majority of local sales through U.S. affiliates, 67 percent in 2003, were in the broad industrial grouping of *manufacturing*, with over half of these sales in the *computers and electronic products* industry (see app. IV, table 18).⁴⁷ The other notable industry was *wholesale trade*, with at about 20 percent of all local sales by affiliates. Other smaller industries included *professional, scientific, and technical services* and *utilities*, with both accounting for about 1 percent of total sales (see app. IV, table 17).

⁴⁷BEA provides data on affiliates' local sales in China by the industry of the affiliate. It also provides data on total sales of both goods and services, but does not report more detail on specific types of goods or services.

U.S. Companies Are Increasingly Investing in China and Selling through Affiliates, but Challenges Remain

China's growing domestic market, improving productivity, low labor costs, and improving infrastructure has made it an increasingly attractive investment venue for U.S. companies.⁴⁸ The U.S.-China Business Council reported in 2004⁴⁹ that China's implementation of its WTO commitments has increased foreign investors' ability to expand their operations. The trend of U.S. affiliate sales surpassing U.S. exports to China is consistent with the pattern of U.S. trade and investment worldwide. U.S. multinational companies typically sell their goods and services directly through their foreign affiliates. However, some experts believe that U.S. investment and affiliate sales in China are particularly important. According to a 2004 Center for Strategic and International Studies report,⁵⁰ China is an attractive venue for foreign investment due to its large domestic consumption market, improved productivity, better infrastructure, and higher technology standards and quality control. Morgan Stanley reported in 2002⁵¹ that sales of foreign affiliates, rather than exports, are rapidly becoming the primary means by which U.S. products are delivered to the Chinese; therefore, U.S. export figures do not fully capture the true level of U.S. commercial sales in China. The report said that China's massive consumer and labor markets set it apart from the rest of the world, and many U.S. firms have no choice but to "be on the ground there." A Coalition of Service Industries official predicted that U.S. affiliate sales of services would continue to rise and eventually overtake service exports, especially in financial services in which coalition members to do business through joint ventures and branches. The Center for Strategic and International Studies reported in 2004 that increasing total foreign direct investment in China indicates that investment is targeting the domestic market for the long term, rather than focusing on China as an export platform. According to the International Trade Commission, however, for some countries, such

⁴⁸As we previously reported, WTO rules generally do not cover members' investment policies, although China committed to eliminating some investment requirements, such as complying fully with the WTO's Agreement on Trade-Related Investment Measures and eliminating policies requiring trade and foreign exchange balancing, local content, and export performance. See [GAO-03-04](#).

⁴⁹The U.S.-China Business Council, *Trade with China: Opportunities and Challenges* (submission to the Senate Committee on Finance, June 23, 2005).

⁵⁰Center for Strategic and International Studies, Bates Gill and Sue Anne Tay, *Partners and Competitors: Coming to Terms with the U.S.-China Economic Relationship* (April 2004).

⁵¹Morgan Stanley Equity Research Global, *America's Trade Deficit with China: Why It's Here to Stay* (Mar. 22, 2002).

as Asian countries, investing in China as an export platform is still an important part of their foreign direct investment.

However, there are some factors that limit or discourage U.S. companies from investment in China. For example, the Chinese government is still undergoing market-oriented reforms, such as phasing in many of its WTO commitments for services; these reforms affect how U.S. companies access the market for services in China—which may explain why sales of services through affiliates lagged behind exports of services. According to USTR’s December 2004 report, China’s opaque regulatory process and burdensome licensing and operating requirements continue to frustrate efforts of U.S. services providers in a number of industries. For example, the report cited excessive capital requirements for U.S. companies in insurance, banking, and telecommunications sectors, among others, that might prevent U.S. services companies from operating in China.

Observations

This analysis reflects a range of issues affecting U.S.-China trade and investment, including broad factors, such as China’s economic development and exchange rate regime, and more narrowly focused sector-specific aspects such as China’s growing importance as a market for U.S. goods and services, the rise in integrated production among China’s regional trading partners, China’s increasing demand for oil, and China’s growing role as an attractive venue for foreign direct investment. Beyond this broad overview, further study may be warranted in particular areas, as follows:

- The strong, overall growth in U.S. exports over the past decade shows that some U.S. companies are successfully selling their goods and services to China. This growth is despite the current trade frictions between the two countries, which include allegations that China has not been meeting all of its WTO commitments and that China is limiting market access for U.S. companies. An in-depth analysis of the relationship between U.S. export growth in China and China’s WTO commitments might provide useful insights about the impact of China’s reforms.
- U.S. services exports to China, although growing, are still relatively small and undeveloped, in part because most WTO commitments for services either have just recently come into effect or will do so in the near future, and in part because of various Chinese restrictions. Therefore, it may be best to observe the pattern of U.S. services exports

when WTO commitments have been phased in and given more time to be implemented.

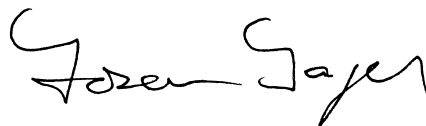
- Integrated production, as China's neighbors, including Japan and South Korea, use China as an assembly and export platform for their products, has implications for the nature of the U.S. trade deficit with China. Examining integrated production, particularly for China's largest import and export category *machinery, electronics, and high-tech apparatus*, in which the United States lost export market share in China to other countries, may shed light on reasons for the U.S. trade imbalance with China.
- The rise in U.S. affiliate sales relative to U.S. exports also has implications for U.S. companies' ability to access the Chinese market. For example, declines in U.S. vehicle exports to China appear to be offset by U.S. companies' shifting production to China and selling vehicles directly to the Chinese market through their affiliates. Exploring the extent and reasons why affiliate sales have replaced exports as a means of accessing the Chinese market may be useful.
- The significance of exchange rates to the U.S.-China trade relationship is likely to remain an issue of continuing policy interest. While China's exchange rate has changed only slightly since the Chinese government announced a policy modification in July, further changes could, over time, provide additional opportunities to study the relationship between exchange rates and trade patterns.

Agency Comments

We provided USTR, the Departments of Agriculture and Commerce, and the International Trade Commission with a draft of this report for their review and comment. All four agencies chose to provide technical comments from their staff. Their comments focused on descriptions of data sources, methodologies for computing data, and explanations of trends in the data. We modified the report in response to their suggestions.

We will send copies of this report to the appropriate congressional committees, the U.S. Trade Representative, the Departments of Agriculture and Commerce, and the International Trade Commission. We also will make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff has any questions concerning this report, please contact me at (202) 512-2717 or at yagerl@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. A GAO contact and staff acknowledgments are listed in appendix V.

A handwritten signature in black ink that reads "Loren Yager". The signature is written in a cursive style with a large initial "L" and "Y".

Loren Yager
Director, International Affairs and Trade

Objectives, Scope, and Methodologies

As part of a long-term body of work that the Chairman and the Ranking Minority Member of the Senate Committee on Finance as well as the Chairman and the Ranking Minority Member of the House Committee on Ways and Means requested, we (1) analyzed U.S. goods exports to China and how they have changed over time, (2) analyzed U.S. services exports to China and how they have changed over time, (3) assessed how U.S. exports to China have fared against other major trading partners' exports to China, and (4) analyzed U.S. investment and affiliate sales in China.

In order to examine U.S. goods exports to China, we collected annual U.S. export statistics from 1995 to 2004 at various levels of detail from the Department of Commerce, U.S. Census Bureau. We used U.S. Bureau of Labor Statistics export price deflators to deflate the U.S. trade data so that all of the values reported are in 2004 constant dollars. We did not deflate the foreign direct investment data since we report U.S. investment abroad on an historical cost basis, which reflects the prices of earlier periods in which the investment was made and represents the accumulated stock of these investments. Although Commerce's U.S. Bureau of Economic Analysis (BEA) calculates investments at current prices for aggregate investment (which could then be deflated), it does not do so on a bilateral basis. Therefore, we do not have an appropriate way to adjust these values for any potential effects of inflation.

We used the U.S. harmonized tariff schedule (HTS) chapter level deflators when available; otherwise, we used the corresponding section deflators. For the few cases where section deflators were missing as well, we used the general export price deflator. To facilitate a broad analysis of U.S. exports to China, we grouped imports and exports into higher-level categories of goods on the basis of the HTS product codes and our discussions with tariff experts. We took the 22 section headings of the HTS and grouped them into 10 broader categories. Table 7 shows these groupings in detail. We studied the composition of exports by grouping products into 10 categories. We compared the annual growth rate of U.S. exports to China with U.S. exports to the world from 1995 to 2004 and also from 2001 to 2004 at the overall level and the products level. We identified products with the highest growth and decline in terms of both value and percentage. We (1) analyzed the importance of China as an export market for the United States by looking at the share of exports going to China at various HTS levels and (2) identified products for which exports to China accounted for a significant share. We interviewed a range of government and industry experts to obtain contextual information on selected export products we identified in our data analysis. Throughout this report, we

relied on secondary sources and did not independently review Chinese law and regulations to determine their effect on sales and investment.

Table 7: Concordance between 10 GAO Categories and the U.S. Harmonized Tariff Schedule Section Headings

GAO category	HTS section heading
1. Animal and plant products	1. Live animals, animal products 2. Vegetable products 3. Animal or vegetable fats and oils, edible fats, waxes
2. Prepared foods, beverages, spirits, and tobacco	4. Prepared foodstuffs, beverages, spirits, and vinegar; tobacco
3. Chemicals, plastics, and minerals	5. Mineral products 6. Products of chemical or allied industries 7. Plastics and articles thereof, rubber
4. Wood and paper products	9. Wood and articles of wood 10. Pulp of wood, paper, and paperboard
5. Textiles, apparel, leather, and footwear	8. Leather, travel goods, handbags 11. Textiles and textile articles (apparel) 12. Footwear, headgear, umbrellas, etc.
6. Glassware, precious metals and stones, and jewelry	13. Articles of stone, plaster, ceramics, glass, and glassware 14. Pearls, precious or semiprecious stones, precious metals, jewelry, coin
7. Base metals and articles of base metals	15. Base metals and articles of base metals (except tools and implements)
8. Machinery, electronics, and high-tech apparatus	15. Base metals and articles of base metals (tools and implements) 16. Machinery and mechanical appliances, electrical equipment, sound recorders, televisions 18. Optical, photographic, cinematographic, measuring, and other apparatus (except clocks and watches, musical instruments)
9. Autos and other vehicles and parts	17. Vehicles, aircraft, vessels, and associated transport equipment
10. Miscellaneous manufacturing and special provision products	18. Optical, photographic, cinematographic, measuring, and other apparatus (clocks and watches, musical instruments) 19. Arms and ammunition 20. Miscellaneous manufactured articles 21. Works of art, collectors' pieces, antiques 22. Special classification provisions

Sources: GAO and the international harmonized system nomenclature (World Customs Organization).

To analyze U.S. services exports to China, we collected annual U.S. export statistics from 1995 to 2004 from BEA. We used BEA price indices for major service categories from the National Income and Product Accounts to convert the trade data so that all values reported are, unless noted otherwise, in 2004 constant dollars. We identified the importance of China as a U.S. services export destination by looking at China's overall share of U.S. services exports. We calculated the growth rates for services categories and subcategories using a log function, so that we could examine the categories with the highest growth. In some cases, when BEA

did not publish values for some categories in some years, we estimated the missing values and based the growth rate on those estimations. We also interviewed several government and industry experts to obtain contextual information about services trade with China.

To assess how U.S. exports to China fared against other major trading partners' exports to China, we collected official Chinese trade statistics from Global Trade Information Services, a licensed contractor with the Chinese government. We reviewed these data, including comparing them with comparable United States, European Union (EU), and Japanese trade statistics. These data differ from the U.S. statistics, particularly on the Chinese export side, given that a portion of China's trade passes through Hong Kong before going to its ultimate destination. However, after reviewing the academic literature on this discrepancy and general reviews of China's statistics, we found that the Chinese import statistics (which we use in this report) should generally record the country of origin of its imports accurately, despite whether products first transit through Hong Kong. On the basis of our review of these statistics and the literature, we found that these data were sufficiently reliable for comparing the relative U.S. share of world exports to China over time to other major trading partners, such as the EU and Japan. We analyzed the U.S. share of world exports to China from 1995 to 2004 at a broad GAO category level (see table 7) as well as at a more detailed subcategory level. We compared the trends over two, 5-year periods (as discussed in this report). In addition, we also compared the trends over 3-year periods to confirm that the results still generally held. We calculated the average share across these time periods by taking the average of the share in each of the years (e.g., the average of the share for 1995, 1996, 1997, 1998, and 1999 in order to get the average share in 1995 to 1999). However, we also calculated the weighted average share across these time periods (using the value of trade as weights) in order to confirm that our results still generally held. When we report the value of Chinese trade flows (as opposed to the share of China's trade) using Chinese trade statistics, it is in nominal dollars. We were not able to identify an appropriate trade deflator for Chinese statistics in order to remove the potential effect of inflation or deflation on the values. Finally, we also interviewed industry experts from the Departments of Agriculture and Commerce, and the International Trade Commission, and reviewed government and academic reports to obtain contextual information about the trends in U.S. share of world exports to China.

To study growth in affiliate sales and foreign direct investment, we collected annual U.S. affiliate sales statistics from 1995 to 2003 and

investment statistics from 1995 to 2004 from BEA. We identified China's importance as a foreign direct investment destination by looking at China's overall share of U.S. foreign direct investment, and examined the United States's importance as a foreign direct investor in China by looking at the overall share of U.S. foreign direct investment in China compared with other countries. We calculated the growth rates for investment categories and subcategories using a log function, so that we could examine which categories had the highest growth and decline both in terms of value and percentage. BEA reports data on foreign direct investment on an historical cost basis. We evaluated the growth in affiliate sales of goods and services and compared these values to the growth in cross-border trade in goods and services. We calculated the growth rates for affiliate sales categories and subcategories using a log function. In some cases, when BEA did not publish values for some categories in some years, we estimated the missing values and based the growth rate on those estimations. In one case, for foreign direct investment in the finance and insurance category, we had to use an average annual growth rate instead of a log function because BEA reported the value of sales as a negative number. We used Chinese Consumer Price Index data to deflate the affiliate sales to 2004 constant dollars. We also interviewed several government and industry experts to obtain contextual information about U.S. investment in and affiliate sales to China.

For each of the data sets that we used, we examined the data and found them sufficiently reliable for the purposes of our report. In addition, although Chinese data on U.S. exports have limitations and differ from U.S. statistics, we found them to be sufficiently reliable to present individual countries' relative shares of China's trade.

We performed our work from April 2005 to December 2005 in accordance with generally accepted government auditing standards.

U.S. Goods Exports and U.S. Share of World Goods Exports to China

U.S. exports of goods to China have grown rapidly over the past decade, while the U.S. share of world exports to China has fallen during the same period. These trends are evident at a broad category level and at a more detailed subcategory level. This appendix provides detailed information on these changes as well as selected information on particular products. Specifically, the tables that follow provide additional information on subcategories of products. Table 8 lists subcategories whose exports to China accounted for more than 10 percent of total U.S. exports in that category in 2004; table 9 lists subcategories whose exports to China accounted for less than 1 percent of total U.S. exports in 2004; table 10 list subcategories with the largest increases in export value over the decade; table 11 lists subcategories with the largest declines in export value; table 12 lists subcategories with the largest declines the U.S. share of world exports to China; and table 13 lists subcategories with the largest increases in the U.S. share of world exports to China. Finally, table 14 provides complete data on U.S. exports to China and the U.S. share of world exports to China for the 10 broad categories of goods and their 99 subcategories.

China is a major market for some U.S. goods exports. Table 8 lists the products for which exports to China accounted for more than 10 percent of U.S. exports in that category in 2004. In particular, there were four products for which more than one-quarter of total U.S. exports were destined for China in 2004.

Table 8: Goods Subcategories for Which U.S. Goods Exports to China Accounted for More Than 10 Percent of Total U.S. Goods Exports in 2004

Dollars in millions

Goods subcategory	HTS chapter	Exports to China (2004)	Total exports (2004)	China's share of total U.S. exports
Vegetable plaiting materials & products nesoi	14	\$10	\$35	28.90%
Oil seeds etc.; misc grain, seed, fruit, plant etc	12	2,370	8,500	27.88
Zinc and articles thereof	79	37	142	26.27
Silk, including yarns and woven fabric	50	6	25	25.08
Cotton, including yarn and woven fabric thereof	52	1,420	6,280	22.61
Raw hides and skins (no fur skins) and leather	41	579	2,730	21.21

**Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China**

(Continued From Previous Page)

Dollars in millions

Goods subcategory	HTS chapter	Exports to China (2004)	Total exports (2004)	China's share of total U.S. exports
Fur skins and artificial fur; manufactures thereof	43	41	209	19.47
Copper and articles thereof	74	616	3,270	18.84
Wood pulp etc; recovered (waste & scrap) paper and paper board	47	730	4,500	16.22
Iron and steel	72	1,080	8,520	12.68
Manmade staple fibers, yarns & woven fabrics	55	209	1,680	12.44
Fertilizers	31	311	\$2,610	11.92

Source: GAO analysis of Department of Commerce, U.S. Census Bureau data.

Notes:

HTS is the U.S. Harmonized Tariff Schedule.

We adjusted all data for inflation and expressed them in 2004 constant dollars.

China is an insignificant market for some other U.S. goods exports. Table 9 lists products for which less than 1 percent of U.S. exports went to China in 2004. Some of these products are among major U.S. exports, such as vehicles and pharmaceutical products, which had an overall export of \$67 billion and almost \$19 billion in 2004, respectively.

Table 9: Goods Subcategories for Which U.S. Goods Exports to China Accounted for Less Than 1 percent of Total U.S. Goods Exports in 2004

Dollars in millions

Goods subcategory	HTS chapter	Exports to China (2004)	Total exports (2004)	China's share of total U.S. exports
Clocks and watches and parts thereof	91	\$2	\$271	0.91%
Headgear and parts thereof	65	1	102	0.90
Vehicles, except railway or tramway, and parts etc	87	602	67,000	0.90
Nat etc pearls, precious etc. stones, pr met etc; coin	71	79	9,970	0.79
Explosives; pyrotechnics; matches; pyro alloys etc	36	4	484	0.79
Textile art nesoi; needlecraft sets; worn text art	63	7	905	0.76
Prep cereal, flour, starch or milk; bakers wares	19	12	1,730	0.71
Milling products; malt; starch; inulin; wheat gluten	11	4	667	0.67
Mfr of straw, esparto etc.; basket ware & wickerwork	46	0	21	0.60

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

(Continued From Previous Page)

Dollars in millions

Goods subcategory	HTS chapter	Exports to China (2004)	Total exports (2004)	China's share of total U.S. exports
Live animals	1	3	506	0.55
Apparel articles and accessories, not knit etc.	62	8	1,590	0.52
Edible vegetables & certain roots & tubers	7	10	1,910	0.50
Pharmaceutical products	30	94	18,900	0.50
Carpets and other textile floor coverings	57	4	767	0.48
Works of art, collectors' pieces and antiques	97	6	1,320	0.46
Live trees, plants, bulbs etc.; cut flowers etc.	6	1	282	0.46
Beverages, spirits and vinegar	22	9	2,180	0.42
Apparel articles and accessories, knit or crochet	61	8	2,430	0.34
Coffee, tea, mate & spices	9	1	269	0.32
Knitted or crocheted fabrics	60	5	1,630	0.29
Arms and ammunition; parts and accessories thereof	93	5	2,240	0.24

Source: GAO analysis of Department of Commerce, U.S. Census Bureau trade statistics.

Notes:

HTS is the U.S. Harmonized Tariff Schedule.

We adjusted all data for inflation and expressed them in 2004 constant dollars.

U.S. goods exports to China for the majority, 88 out of 99 goods subcategories, increased in value over the past decade. High-value subcategories, such as *electric machinery*, and those experiencing the highest growth rates, such as *oilseeds*, were the main contributors to the overall export value increase. As shown in table 10, the top 5 subcategories accounted for close to 60 percent of the total export increase for the period.

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

Table 10: Goods Subcategories with the Highest Value Increase in U.S. Exports to China (Average 1995-1999 Versus Average 2000-2004)

Dollars in millions

Goods subcategory	HTS chapter	Average exports			
		1995-1999 (A)	2000-2004 (B)	Change in 5-year periods (C) ^a	Share of change in 5-year periods (D) ^b
Electric machinery etc; sound equip; television equipment; pts	85	\$1,249	\$3,370	\$2,121	17.53%
Nuclear reactors, boilers, machinery etc.; parts	84	2,290	4,080	1,790	14.80
Oil seeds etc.; misc. grain, seed, fruit, plant etc	12	385	2,030	1,645	13.60
Iron and steel	72	149	950	802	6.63
Optic, photo etc, medic or surgical instruments etc	90	569	1,308	739	6.11
Plastics and articles thereof	39	441	1,169	727	6.01
Organic chemicals	29	303	920	617	5.10
Copper and articles thereof	74	111	500	389	3.21
Raw hides and skins (no fur skins) and leather	41	147	451	304	2.51
Wood pulp etc; recovered (waste & scrap) paper and paper board	47	203	494	291	2.41
Wood and articles of wood; wood charcoal	44	41	229	188	1.55
Miscellaneous chemical products	38	119	297	178	1.47
Aluminum and articles thereof	76	181	357	176	1.46
Cotton, including yarn and woven fabric thereof	52	330	497	167	1.38
Vehicles, except railway or tramway, and parts etc	87	202	366	164	1.36
All other products		4,019	5,819	1,799	15

Source: GAO analysis of Department of Commerce, U.S. Census Bureau trade statistics.

Notes:

HTS is the U.S. Harmonized Tariff Schedule.

We adjusted all data for inflation and expressed them in 2004 constant dollars.

^aValues in column (C) are derived by subtracting columns (A) from (B).

^bPercentages in column (D) are derived by dividing each value in column (C) by the summation of all items in column (C).

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

Far fewer, 9 of 99 of the goods subcategories, experienced declines in export value in the past decade.¹ Fertilizer experienced the highest decline, with the annual average dropping \$560 million for the second 5 years from the previous 5 years, accounting for more than half of the total export decline.

Table 11: Products with the Highest Value Decrease in Exports to China (Average 1995-1999 Versus Average 2000-2004)

Dollars in millions

Goods subcategory	HTS chapter	Average exports			
		1995-1999 (A)	2000-2004 (B)	Change in 5-year periods (C) ^a	Share of change in 5-year periods (D) ^b
Fertilizers	31	\$1,107	\$547	\$(560)	53.25%
Cereals	10	311	126	(185)	17.59
Animal or vegetable fats, oils etc. & waxes	15	217	42	(176)	16.73
Mineral fuel, oil etc.; bitumin substitute; mineral wax	27	197	142	(55)	5.24
Toys, games & sport equipment; parts & accessories	95	76	29	(46)	4.40
Food industry residues & waste; prep animal feed	23	109	86	(23)	2.22
Carpets and other textile floor coverings	57	7	4	(3)	0.26
Wool & animal hair, including yarn & woven fabric	51	7	5	(2)	0.23
Textile art; needlecraft sets; worn text art	63	6	5	(1)	0.09

Source: GAO analysis of Department of Commerce, U.S. Census Bureau trade statistics.

Notes:

HTS is the U.S. Harmonized Tariff Schedule.

We adjusted all data for inflation and expressed them in 2004 constant dollars.

^aValues in column (C) are derived by subtracting columns (A) from (B).

^bPercentages in column (D) are derived by dividing each value in column (C) by the summation of all items in column (C).

U.S. share of world goods exports to China declined overall from 1995 to 2004. Table 12 shows the top 20 products that experienced declines in share between 1995 to 1999 and 2000 to 2004, as well as information on the

¹The United States did not export goods to China in the remaining 2 (of 99) subcategories.

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

overall value of U.S. exports to China in 2004. Carpets and other textile floor coverings experienced the largest decline of any subcategory, falling from 42 percent of the world exports to China between 1995 and 1999, to only 13 percent between 2000 and 2004, on average. U.S. exports to China of carpets and other textile floor coverings in 2004 were \$4 million. However, the table shows that a range of products experienced declines, including tobacco, toys, some agricultural products, and fertilizers.

Table 12: Top 20 Declines in U.S. Share of World Exports to China, 1995-2004

Dollars in millions

Subcategory	HTS chapter	U.S. share of world exports to China			Export value (2004)
		Percentage point change (A) minus (B) ^a	Average (1995-1999) (A)	Average (2000-2004) (B)	
Carpets and other textile floor coverings	57	(29)%	42%	13%	\$4
Tobacco	24	(18)	22	4	27
Misc. grain, seed, fruit	12	(12)	52	40	2,370
Toys and sports equipment	95	(12)	20	8	52
Vegetables	7	(11)	19	8	10
Fats and oils	15	(10)	13	3	35
Explosives	36	(10)	42	32	4
Fertilizers	31	(10)	41	31	311
Dairy, eggs, honey, etc.	4	(9)	19	10	38
Live animals	1	(8)	26	18	3
Milling; malt; starch	11	(8)	13	5	4
Cotton and yarn, fabric	52	(7)	18	11	1,420
Art and antiques	97	(6)	15	9	6
Railway;trf sign eq	86	(6)	9	3	47
Cereals	10	(6)	17	11	496
Optic,nt 8544;med instruments	90	(6)	23	17	1,980
Other base metals, etc.	81	(5)	15	10	94
Fur skin, artificial fur	43	(6)	8	2	41
Glass and glassware	70	(5)	11	6	126
Other vegetable	14	(5)	16	11	10

Source: GAO analysis of Department of Commerce, U.S. Census Bureau trade statistics and official Chinese trade statistics.

Notes:

HTS is the U.S. Harmonized Tariff Schedule.

We adjusted all data for inflation and expressed them in 2004 constant dollars.

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

^aThe percentage point change is derived by subtracting the value in column (B) from the value in column (A).

Although, as previously discussed, 55 of the 99 subcategories of U.S. exports to China experienced a decline in the share of world exports to China, 42 subcategories experience a rise from the first half of the decade (1995 to 1999) to the second half (2000 to 2004).² Table 13 shows the top 20 of these 42 categories that experienced increases in share. Miscellaneous edible preparations—which are types of prepared foodstuffs, including certain products, such as mayonnaise, mixed seasonings, and certain sauces and syrups—experienced the largest increase over the decade, growing from a 14 percent share to a 40 percent share of world exports, on average. Once again, the subcategories that experienced increases covered a wide range of products, including gums and resins, printed books and newspapers, and aircraft. However, many of these, as shown in table 13, were agricultural products.

Table 13: Top 20 Increases in U.S. Share of World Goods Exports to China, 1995-2004

Dollars in millions

Subcategory	HTS chapter	U.S. share of world exports to china			
		Percentage point change (B) minus (A) ^a	Average (1995-1999) (A)	Average (2000-2004) (B)	Export value (2004)
Miscellaneous edible preparations	21	26%	14%	40%	\$178
Edible preparations of meat, fish, crustaceans etc	16	20	11	31	12
Lac; gums, resins & other vegetable sap & extract	13	16	16	32	14
Prep vegetables, fruit, nuts or other plant parts	20	14	31	45	55
Products of animal origin, nesoi	5	11	26	37	44
Leather art; saddlery etc; handbags etc; gut art	42	9	2	11	8
Wadding, felt etc; sp yarn; twine, ropes etc.	56	9	3	12	71
Edible fruit & nuts; citrus fruit or melon peel	8	8	7	15	71
Printed books, newspapers etc; manuscripts etc	49	6	7	13	49
Soap etc; waxes, polish etc; candles; dental preps	34	4	13	17	124
Aircraft, spacecraft, and parts thereof	88	3	51	54	1,950
Essential oils etc; perfumery, cosmetic etc preps	33	4	23	27	82
Mfr of straw, esparto etc.; basket ware & wickerwork	46	4	2	6	0

²The United States did not export goods to China in the remaining 2 (of 99) subcategories.

**Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China**

(Continued From Previous Page)

Dollars in millions

Subcategory	HTS chapter	U.S. share of world exports to china			Export value (2004)
		Percentage point change (B) minus (A) ^a	Average (1995-1999) (A)	Average (2000-2004) (B)	
Footwear	64	3	15	18	31
Cocoa and cocoa preparations	18	3	12	15	8
Art of stone, plaster, cement, asbestos, mica etc.	68	3	9	12	77
Ceramic products	69	3	10	13	46
Sugars and sugar confectionary	17	3	2	5	40
Coffee, tea, mate & spices	9	3	6	9	1
Hides and skins	41	3	13	16	579

Source: GAO analysis of Department of Commerce, U.S. Census Bureau trade statistics and official Chinese trade statistics.

Notes:

HTS is the U.S. Harmonized Tariff Schedule.

We adjusted all data for inflation and expressed them in 2004 constant dollars.

^aThe percentage point change is derived by subtracting the value in column (B) from the value in column (A).

Finally, table 14 provides information across all 10 broad categories and the 99 subcategories that comprise them on the average annual growth of U.S. exports to China from 1995 to 1999, 2000 to 2004, and over the whole decade of 1995 to 2004. The table also shows U.S. exports to China in 2004 and the average U.S. share of world exports to China in 1995 to 1999, 2000 to 2004, and over the whole time period. Finally, the table shows the difference between U.S. share of exports in 1995 to 1999 and 2000 to 2004.

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

[This page is intentionally left blank.]

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

Table 14: U.S. Goods Exports and U.S. Share of World Goods Exports to China—All Categories and Subcategories, 1995-2004

Dollars in millions

Category or subcategory	HTS chapter	Average annual growth (1995-2004)
Group 1: Animal and plant products		14%
Live Animals	1	(4)
Meat and Edible Meat Offal	2	7
Fish, Crustaceans, and Aquatic Invertebrates	3	12
Dairy Products; Birds, Eggs; Honey; Edible Animal Products NESOI	4	28
Products of Animal Origin NESOI	5	13
Live Trees, Plants, Bulbs, Etc.; Cut Flowers, Etc.	6	15
Edible Vegetables and Certain Roots and Tubers	7	30
Edible Fruit and Nuts; Citrus Fruit or Melon Peel	8	55
Coffee, Tea, Mate and Spices	9	18
Cereals	10	(15)
Milling Products; Malt; Starch; Inulin; Wheat Gluten	11	18
Oil Seeds, Etc.; Misc Grain, Seed, Fruit, Plant, Etc.	12	40
Lac; Gums, Resins, and Other Vegetable Sap and Extract	13	60
Vegetable Plaiting Materials and Products NESOI	14	2
Animal or Vegetable Fats, Oils. Etc. and Waxes	15	(2)
Group 2: Prepared food, beverages, spirits, and tobacco		18%
Edible Preparations of Meat, Fish, Crustaceans, Etc.	16	21
Sugars and Sugar Confectionary	17	34
Cocoa and Cocoa Preparations	18	11
Prepared Cereal, Flour, Starch or Milk; Bakers Wares	19	26
Prepared Vegetables, Fruit, Nuts, or Other Plant Parts	20	44
Miscellaneous Edible Preparations	21	41
Beverages, Spirits, and Vinegar	22	10
Food Industry Residues and Waste; Prepared Animal Feed	23	4
Tobacco and Manufactured Tobacco Substitutes	24	7
Group 3: Chemicals, plastics, and minerals		10%
Salt; Sulfur; Earth and Stone; Lime and Cement Plaster	25	24
Ores, Slag, and Ash	26	3

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

U.S. exports to China				U.S. share of world exports to China			
Average annual growth (1995-1999)	Average annual growth (2000-2004)	Share of U.S. exports to the world	Export value (2004)	Average (1995-1999) (A)	Average (2000-2004) (B)	Percentage point change (B) minus (A) ^a	
(10)%	20%	8%	\$3,409	24%	25%	1%	
(11)	(18)	1	3	26	18	(8)	
11	3	1	64	65	67	2	
4	15	8	249	10	8	(2)	
40	20	3	38	19	10	(9)	
41	0	8	44	26	37	11	
78	(9)	0	1	5	4	(1)	
101	0	1	10	19	8	(11)	
36	19	1	71	7	15	8	
65	(16)	0	1	6	9	3	
(49)	73	4	496	17	11	(6)	
22	(7)	1	4	13	5	(8)	
48	18	28	2,370	52	40	(12)	
173	3	4	14	16	32	16	
19	(11)	29	10	16	11	(5)	
(20)	34	2	35	13	3	(10)	
26%	20%	2%	\$406	13%	16%	3%	
(6)	0	1	12	11	31	20	
34	16	6	40	2	5	3	
10	10	1	8	12	15	3	
23	6	1	12	13	12	(1)	
49	22	3	55	31	45	14	
27	52	5	178	14	40	26	
14	27	0	9	7	3	(4)	
31	(5)	2	65	14	15	1	
33	79	1	27	22	4	(18)	
6%	20%	4%	\$5,760	11%	7%	(4)%	
30	4	5	90	11	7	(4)	
(31)	40	8	144	1	1	0	

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

(Continued From Previous Page)

Category or subcategory	HTS chapter	Average annual growth (1995-2004)
Mineral Fuel, Oil, Etc.; Bitumin Substances; Mineral Wax	27	5
Inorganic Chemicals; Precious and Rare-Earth Metals and Radioactive Compounds	28	25
Organic Chemicals	29	22
Pharmaceutical Products	30	13
Fertilizers	31	(13)
Tanning and Dye Ext, Etc.; Dye, Paint, Putty, Etc.; Inks	32	20
Essential Oils, Etc.; Perfumery, Cosmetic, Etc. Preparations	33	25
Soap, Etc.; Waxes, Polish, Etc; Candles; Dental Preparations	34	32
Albuminoidal Substances; Modified Starch; Glue; Enzymes	35	43
Explosives; Pyrotechnics; Matches; Pyro Alloys, Etc.	36	8
Photographic or Cinematographic Goods	37	46
Miscellaneous Chemical Products	38	19
Plastics and Plastic Articles	39	20
Rubber and Rubber Articles	40	37
Group 4: Wood and paper products		17%
Wood and Wood Articles; Wood Charcoal	44	37
Cork and Cork Articles	45	1
Articles of Straw, Esparto, Etc.; basket ware and wicker ware	46	14
Wood Pulp, Etc.; Recovered (Waste and Scrap) Paper and Paperboard	47	18
Paper and Paperboard and Articles (Including Paper Pulp Articles)	48	12
Printed Books, Newspapers, Etc.; Manuscripts, Etc.	49	11
Group 5: Textiles, apparel, leather, and footwear		11%
Raw Hides and Skins (No Fur skins) and Leather	41	23
Leather Articles; Saddlery, Etc.; Handbags. Etc.; Gut Articles	42	13
Fur skins and Artificial Fur and Articles	43	28
Silk, Including Yarns and Woven Fabric	50	52
Wool and Animal Hair, Including Yarn and Woven Fabric	51	(7)
Cotton, Including Yarn and Woven Fabric	52	4
Vegetable Textile Fibers NESOI; Vegetable Fibers and Paper Yarns and Woven Fabric	53	29

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

U.S. exports to China				U.S. share of world exports to China			
Average annual growth (1995-1999)	Average annual growth (2000-2004)	Share of U.S. exports to the world	Export value (2004)	Average (1995-1999) (A)	Average (2000-2004) (B)	Percentage point change (B) minus (A) ^a	
45	26	1	222	2	1	(1)	
10	37	5	343	12	10	(2)	
9	33	5	1,530	11	9	(2)	
7	22	0	94	9	9	0	
(1)	(15)	12	311	41	31	(10)	
15	11	3	130	8	8	0	
12	26	2	82	23	27	4	
24	38	4	124	13	17	4	
46	29	6	88	13	14	1	
20	(7)	1	4	42	32	(10)	
56	31	6	160	20	21	1	
14	18	4	452	21	22	1	
13	23	5	1,770	9	8	(1)	
11	36	3	217	4	6	2	
20%	22%	6%	\$1,641	15%	14%	(1)%	
23	39	7	374	6	6	0	
17	(14)	1	0	3	1	(2)	
111	29	1	0	2	6	4	
8	32	16	730	26	24	(2)	
28	9	4	487	18	13	(5)	
43	8	1	49	7	13	6	
(20)%	45%	10%	\$2,553	7%	7%	0%	
13	18	21	579	13	16	3	
13	(2)	2	8	2	11	9	
(2)	66	19	41	8	2	(6)	
(13)	59	25	6	1	1	0	
(46)	36	7	7	1	0	(1)	
(55)	153	23	1,420	18	11	(7)	
(15)	66	9	2	1	0	(1)	

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

(Continued From Previous Page)

Category or subcategory	HTS chapter	Average annual growth (1995-2004)
Manmade Filaments, Including Yarns and Woven Fabrics	54	25
Manmade Staple Fibers, Including Yarns and Woven Fabrics	55	5
Wadding, Felt, Etc.; Special Yarn; Twine, Ropes, Etc.	56	41
Carpets and Other Textile Floor Coverings	57	(8)
Special Woven Fabrics; Tufted Fabric; Lace; Tapestries, Etc.	58	44
Impregnated, Etc. Textile Fabrics; Textile Articles For Industry	59	35
Knitted or Crocheted Fabrics	60	12
Apparel Articles and Accessories, Knit or Crochet	61	4
Apparel Articles and Accessories, Not Knit, Etc.	62	21
Textile Art NESOI; Needlecraft Sets; Worn Textile Articles	63	(1)
Footwear, Gaiters, Etc. and Parts	64	17
Headgear and Parts	65	23
Umbrellas, Walking-Sticks, Riding-Crops, Etc, Parts	66	23
Prepared Feathers, Down, Etc.; Artificial Flowers; H Hair Articles	67	30
Group 6: Glassware, precious metals and stones, jewelry		15%
Articles of Stone, Plaster, Cement, Asbestos, Mica, Etc.	68	18
Ceramic Products	69	13
Glass and Glassware	70	13
Natural and Other Pearls, Precious and Other Stones, Precious Metals, Etc.; Coins	71	19
Group 7: Base metals and articles of base metals		23%
Iron and Steel	72	37
Articles of Iron or Steel	73	3
Copper and Copper Articles	74	27
Nickel and Nickel Articles	75	29
Aluminum and Aluminum Articles	76	13
Lead and Lead Articles	78	48
Zinc and Zinc Articles	79	62
Tin and Tin Articles	80	11
Base Metals NESOI; Ceramic Metals; Articles Thereof	81	21
Miscellaneous Articles of Base Metals	83	9

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

U.S. exports to China				U.S. share of world exports to China		
Average annual growth (1995-1999)	Average annual growth (2000-2004)	Share of U.S. exports to the world	Export value (2004)	Average (1995-1999) (A)	Average (2000-2004) (B)	Percentage point change (B) minus (A) ^a
19	20	3	52	2	2	0
(20)	19	12	209	4	6	2
20	65	5	71	3	12	9
13	(11)	0	4	42	13	(29)
20	52	4	31	2	2	0
32	41	4	60	2	4	2
46	(17)	0	5	1	1	0
(19)	56	0	8	1	0	(1)
8	1	1	8	1	1	0
(6)	15	1	7	10	11	1
57	(9)	7	31	15	18	3
28	45	1	1	1	2	1
101	23	2	0	0	0	0
24	7	10	3	5	3	(2)
14%	8%	2%	\$329	10%	7%	(3)
(1)	19	5	77	9	12	3
(3)	1	5	46	10	13	3
13	17	3	126	11	6	(5)
32	(2)	1	79	10	7	(3)
2%	23%	8%	\$2,615	6%	5%	(1)%
9	30	13	1,080	2	3	1
(11)	22	3	225	11	9	(2)
(2)	21	19	616	10	8	(2)
32	28	7	50	6	4	(2)
7	9	8	463	13	9	(4)
42	3	3	3	3	4	1
33	105	26	37	6	5	(1)
(10)	0	5	4	7	3	(4)
3	49	7	94	15	10	(5)
5	18	1	43	6	7	1

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

(Continued From Previous Page)

Category or subcategory	HTS chapter	Average annual growth (1995-2004)
Group 8: Machinery, electronics, and high-tech apparatus		15%
Tools, Cutlery Etc. of Base Metal; Parts	82	15
Nuclear Reactors, Boilers, Machinery, Etc.; Parts	84	11
Electric Machinery, Etc.; Sound and TV Equipment; Parts	85	20
Optic, Photo, Etc. Medical or Surgical Instruments, Etc.	90	17
Group 9: Aircraft, autos, and other transportation		5%
Railway or Tramway Stock, Etc.; Traffic Signal Equipment	86	15
Vehicles, Except Railway or Tramway, and Parts, Etc.	87	13
Aircraft and Spacecraft; Parts	88	3
Ships, Boats, and Floating Structures	89	16
Group 10: Miscellaneous manufacturing		4%
Clocks and Watches; Parts	91	15
Musical Instruments; Parts and Accessories	92	28
Arms and Ammunition; Parts and Accessories	93	(13)
Furniture; Bedding, Etc.; Lamps NESOI, Etc.; Prefabricated Bedding	94	3
Toys, Games and Sport Equipment; Parts and Accessories	95	(13)
Miscellaneous Manufactured Articles	96	16
Works of Art, Collectors' Pieces, and Antiques	97	13
Special Classification Provisions, NESOI	98	9

Appendix II
U.S. Goods Exports and U.S. Share of World
Goods Exports to China

U.S. exports to China				U.S. share of world exports to China			
Average annual growth (1995-1999)	Average annual growth (2000-2004)	Share of U.S. exports to the world	Export value (2004)	Average (1995-1999) (A)	Average (2000-2004) (B)	Percentage point change (B) minus (A) ^a	
9%	19%	5%	\$12,761	13%	10%	(3)%	
3	5	2	61	13	13	0	
5	15	5	5,770	14	12	(2)	
13	22	5	4,950	10	8	(2)	
12	24	4	1,980	23	17	(6)	
20%	6%	2%	\$2,627	28%	21%	(7)%	
0	58	3	47	9	3	(6)	
0	35	1	602	9	5	(4)	
21	1	5	1,950	51	54	3	
(32)	94	2	28	2	4	2	
0%	10%	1%	\$510	8%	7%	(1)%	
15	0	1	2	1	0	(1)	
3	40	1	6	1	2	1	
(52)	5	0	5	10	6	(4)	
(7)	(1)	1	77	15	12	(3)	
(22)	17	2	52	20	8	(12)	
3	18	1	14	2	3	1	
22	2	0	6	15	9	(6)	
11	12	1	346	9	10	1	

Source: GAO analysis of Department of Commerce, U.S. Census Bureau, and official Chinese data.

Notes:

HTS is the U.S. Harmonized Tariff Schedule.

We adjusted these data for inflation and expressed them in 2004 constant dollars.

HTS chapter 77 is reserved for future use. Chapter 99 consists of temporary legislation, temporary modifications, proclaimed pursuant to trade agreements legislation, and additional import restrictions proclaimed pursuant to section 22 of the Agricultural Adjustment Act, as amended.

^aThe percentage point change is derived by subtracting the value in column (B) from the value in column (A).

Services Trade Categories and Their Definitions

Category	Definition
Travel	Goods and services purchased by U.S. persons traveling abroad and by foreign travelers in the United States.
Passenger Fares	Fares received by U.S. air carriers from foreign residents for travel between the United States and foreign countries and between two foreign points.
Other Transportation	U.S. international transactions arising from the transportation of goods by ocean, air, land, pipeline, and inland waterway carriers to and from the United States and between two foreign points.
Royalties and License Fees	Transactions with nonresidents that involve patented and unpatented techniques, processes, and formulas, as well as trademarks, copyrights, franchises, broadcast rights, and other intangible rights, including rights to distribute, use, and reproduce general-use computer software.
Other Private Services	
Education	Expenditures for tuition and living expenses by foreign students enrolled in U.S. colleges and universities and by U.S. students for study abroad.
Financial services	Funds management, credit card services, fees and commissions on transactions in securities, implicit fees paid and received on bond trading, fees on credit-related activities, and other financial services.
Insurance services	Investment income of insurance companies on funds that are treated as belonging to policyholders, and auxiliary services such as agents' commissions, actuarial services, insurance brokering, and agency services.
Telecommunication	Receipts and payments between U.S. and foreign communications companies for the transmission of messages between the United States and other countries.
Other services	Expenditures (except employee compensation) by foreign governments in the United States for services such as maintaining their embassies and consulates, as well as expenditures by international organizations headquartered in the United States and of foreign residents employed temporarily in the United States.
Business, Professional, and Technical Services	
Computer and information	Computer and data processing services and database and other information services.
Management and consulting	Management services, except management of health care facilities, and consulting services, except consulting engineering services related to actual or proposed construction projects and computer consulting, and public relations services, except those that are an integral part of an advertising campaign.
Research and development	Commercial and noncommercial research, product development services, and testing services.
Operational leasing	Rentals for computer and data processing equipment, and transportation equipment (such as ships, aircraft, railway cars, etc.) without crew or operators.
Other business, professional, and technical services	Examples include accounting, auditing, and bookkeeping, advertising, construction, and legal services.

Source: Department of Commerce, Bureau of Economic Analysis.

U.S. Foreign Direct Investment and U.S. Affiliate Sales in China

U.S. Foreign Direct Investment in China

From 1995 to 2004, U.S. foreign direct investment in all industries in China grew at about a 21 percent average annual rate. BEA classifies U.S. foreign investment into broad industry groups, such as *wholesale trade*, *manufacturing*, *mining*, *finance*, and *utilities*. Growth among industries varied, as shown in tables 15 and 16.

Table 15: Industry Group U.S. Foreign Direct Investment to China by Annual Growth Rate (1995-2004) and Value Foreign Direct Investment for 2004

Dollars in millions

Industry group receiving investment	Annual growth rate (percent)			Foreign direct investment (2004)
	Overall (1995-2004)	First 5 years (1995-1999)	Second 5 years (2000-2004)	
Information	39%	NA ^a	36%	\$368
Other industries	34	74%	3	1,375 ^b
Wholesale trade	32	27	49	1,825
Depository institutions	26	(8)	69	534
Manufacturing	23	53	2	8,222
Professional, scientific, and technical services	17	52	20	688
Mining	10	NA ^a	1	1,740
Finance (except depository institutions) and insurance ^c	5	62	(53)	(2)
Utilities	(2)	NA ^a	(0.2)	565 ^b
Total	21%	42%	7%	\$15,430

Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data.

Note: We did not adjust these data for inflation.

^aForeign direct investment data for *information*, *mining*, and *utilities* are not available from 1995 to 1998. Therefore, we could not calculate the growth rate for the first 5 years. For *information* and *mining*, the overall growth rates were calculated from 1999 to 2004. For *utilities*, the overall growth rate was calculated from 1999 to 2003.

^bThis figure is from 2003. BEA did not publish this figure for 2004.

^cThe growth rates for *finance and insurance* were calculated in a different way from the other categories because of negative values in some years for insurance sales. See appendix I for more information.

**Appendix IV
U.S. Foreign Direct Investment and U.S.
Affiliate Sales in China**

Table 16: Manufacturing Industry Group U.S. Foreign Direct Investment to China by the Annual Growth Rate (1995-2004) and Value Foreign Direct Investment 2004

Dollars in million

Manufacturing industry group	Annual growth rate (percent)			Foreign direct investment (2004)
	Overall (1995-2004)	First 5 years (1995-1999)	Second 5 years (2000-2004)	
Transportation equipment	67%	241%	31%	\$1,832
Chemicals	28	44	11	1,643
Food	22	35	21	593
Primary and fabricated metals	11	72	(2)	149
Machinery	9	49	20	455
Electrical equipment, appliances and components	(8)	(13)	2	493
Computers and electronic products	(16)	NA ^a	(25)	1,341
Total	23%	53%	2%	\$8,222

Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data.

Note: We did not adjust these data for inflation.

^aForeign direct investment data for *computer and electronic products* are not available from 1995 to 1998. Therefore, we cannot calculate the growth rate for the first 5 years. The overall growth rate was calculated from 1999 to 2004.

U.S. Affiliate Sales in China

In 2003, U.S. affiliates in China sold about \$38 billion in goods and services to the Chinese market. BEA collects data on U.S. affiliate sales under generally the same industry groups as foreign direct investment, as shown in tables 17 and 18. These industry groups may include operations that produce goods and services. For example, although U.S. affiliates in the manufacturing industry generally produce goods, they may also produce some services.

Appendix IV
U.S. Foreign Direct Investment and U.S.
Affiliate Sales in China

Table 17: Affiliate industry Group Sales in China by Annual Growth Rate (1995-2003) and Sales Value in 2003

Dollars in millions

Affiliate industry group	Annual growth rate (percent)			Sales value (2003)
	Overall (1995-2003)	First 5 years (1995-1999)	Last 4 years (2000-2003)	
Information	50%	NA ^a	50%	\$475
Other industries ^b	45	48%	27	1,616
Manufacturing	36	44	26	25,154
Wholesale Trade	33	33	30	7,736
Professional, scientific, and technical services	16	23	14	497
Utilities	16	NA ^a	16	246
Finance (except depository institutions and insurance) ^c	15	15	14	265
Mining ^d	NA	NA	(5)	453
Total	33%	39%	26%	\$37,757

Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data.

Note: We adjusted these data for inflation and expressed them in 2004 constant dollars.

^aAffiliate sales data for information and utilities are not available from 1995 to 1998. Therefore, we could not calculate the growth rate for the first 5 years for these categories. The overall growth rates for these categories were calculated from 1999 to 2003.

^bAffiliate sales data for other industries were only available for 1996, 2000, and 2001. We estimated figures for 1997, 1998, and 1999. We calculated the growth rate for the first period from 1996 to 1999, and for the last period from 2000 to 2001. The overall growth rate for this category was calculated from 1996 to 2001.

^cAffiliate sales data for finance and insurance are not available for 2002 and 2003. Therefore, we calculated the growth rate for the last period from 2000 to 2001. The overall growth rate for this category was calculated from 1995 to 2001.

^dAffiliate sales data for mining are not available from 1995 to 1999. Therefore, we could only calculate the growth rate for 2000 to 2003.

Appendix IV
U.S. Foreign Direct Investment and U.S.
Affiliate Sales in China

Table 18: Manufacturing Affiliate Industry Group Sales in China by Annual Growth Rate (1995-2003) and Sales Value in 2003

Dollars in millions

Manufacturing affiliate industry group	Annual growth rate (percent)			Sales value (2003)
	Overall (1995-2003)	First 5 years (1995-1999)	Last 4 years (2000-2003)	
Transportation equipment	47%	90%	32%	\$1,098
Computers and electronic products	39	NA ^a	35	13,223
Chemicals	24	38	14	3,894
Food	25	52	13	721
Primary and fabricated metals	23	45	12	753
Machinery	14	25	9	1,163
Electrical equipment, appliances, and components	(9)	(6)	28	873
Total	36%	44%	26%	\$25,154

Source: GAO analysis of Department of Commerce, Bureau of Economic Analysis data.

Note: We adjusted these data for inflation and expressed them in 2004 constant dollars.

^aBEA does not have figures for *computers and electronic products* from 1995 to 1998.

GAO Contact and Staff Acknowledgments

GAO Contact

Loren Yager (202) 512-4128

**Staff
Acknowledgments**

In addition to the individual named above, Adam Cowles, Assistant Director; Ming Chen; Leah DeWolf; Grace Lui; Jamie McDonald; Yesook Merrill; Nina Pfeiffer; Paul Revesz; Tim Wedding; and Seyda Wentworth also provided assistance.

GAO's Mission

The Government Accountability Office, the audit, evaluation and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's Web site (www.gao.gov). Each weekday, GAO posts newly released reports, testimony, and correspondence on its Web site. To have GAO e-mail you a list of newly posted products every afternoon, go to www.gao.gov and select "Subscribe to Updates."

Order by Mail or Phone

The first copy of each printed report is free. Additional copies are \$2 each. A check or money order should be made out to the Superintendent of Documents. GAO also accepts VISA and Mastercard. Orders for 100 or more copies mailed to a single address are discounted 25 percent. Orders should be sent to:

U.S. Government Accountability Office
441 G Street NW, Room LM
Washington, D.C. 20548

To order by Phone: Voice: (202) 512-6000
TDD: (202) 512-2537
Fax: (202) 512-6061

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm

E-mail: fraudnet@gao.gov

Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Gloria Jarmon, Managing Director, JarmonG@gao.gov (202) 512-4400
U.S. Government Accountability Office, 441 G Street NW, Room 7125
Washington, D.C. 20548

Public Affairs

Paul Anderson, Managing Director, AndersonP1@gao.gov (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, D.C. 20548