
Electronic Products

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Change in 2003 from 2002:

U.S. trade deficit : Increased by \$9.2 billion (10 percent) to \$98.0 billion

U.S. exports: Increased by \$411 million (0.3 percent) to \$140.8 billion

U.S. imports: Increased by \$9.6 billion (4 percent) to \$238.8 billion

The trade deficit in electronics grew for the second consecutive year, as imports of telephone and telegraph apparatus, and television receivers and video monitors, increased; and exports of telephone and telegraph apparatus and of computers, peripherals, and parts declined. Further, the trade surplus in medical goods declined despite continued growth in U.S. exports, as imports grew even more, owing to strong demand for such goods in the United States, the largest healthcare market in the world. Semiconductors and integrated circuits was the only electronics commodity group with a significant increase in its trade surplus (see tables EL-1 and EL-2 and the following sector analyses).

The major markets for U.S. exports of electronics in 2003 were Canada, Mexico, and Japan, which together accounted for 32 percent of sector exports. Exports to all three of these major markets declined, in the case of Mexico by 13 percent. Exports to Malaysia and China increased significantly, by over 21 percent in both cases, but combined they account for only 9 percent of total exports, less than either Canada or Mexico (see table EL-1). Total U.S. exports have declined in part because, as more and more U.S. producers move production offshore, foreign markets are being served by the new foreign factories.

The major sources of U.S. imports of electronics in 2003 were China, Mexico, and Japan, which together accounted for 46 percent of sector imports. Although imports from Mexico and Japan, the second- and third-largest sources, declined 3 percent, or \$2.0 billion, imports from China more than made up for that decline, growing 30 percent to \$47.2 billion. The trade deficit with Japan decreased by almost 6 percent, to \$1.1 billion, while the deficits with China and Mexico increased 31 percent to \$41.2 billion, and by 13 percent to \$18.1 billion, respectively.

China passed Mexico to become the United States' largest trading partner in 2003. Since its entry into the WTO, China has drawn production from the United States and Mexico,¹ and from other Asian

¹ Anna Willard, "China to Double Electronic Manufacturing Share," June 4, 2003, found at <http://in.tech.yahoo.com/030603/137/24uuz.html>, retrieved May 6, 2004; China-Window.com., "China Investment Environment," Mar. 24, 2004, found at http://www.china-window.com/china/market/investment_in_china/china-investment-enviro nm.shtml, retrieved May 6, 2004.

Table EL-1

Electronic products: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 1999-2003¹

Item	1999	2000	2001	2002	2003	Change, 2003 from 2002	
						Absolute	Percent
<i>Million dollars</i>							
U.S. exports of domestic merchandise:							
China	2,942	3,926	4,892	4,855	5,934	1,079	22.2
Mexico	19,562	24,644	20,798	18,965	16,414	-2,552	-13.5
Japan	14,906	17,795	15,393	11,810	11,348	-462	-3.9
Malaysia	5,798	6,846	5,145	5,997	7,290	1,293	21.6
Canada	22,049	25,007	20,108	17,025	16,637	-388	-2.3
Korea	9,189	10,562	6,479	6,380	7,085	705	11.1
Taiwan	5,246	7,205	5,661	5,961	5,555	-405	-6.8
Germany	8,093	8,653	8,787	7,639	7,633	-7	-0.1
Singapore	6,702	7,316	5,193	4,600	4,992	392	8.5
United Kingdom	10,047	11,978	9,748	7,432	7,065	-367	-4.9
All other	57,613	65,056	58,406	49,764	50,887	1,122	2.3
Total	162,146	188,989	160,610	140,428	140,838	411	0.3
EU-15	40,836	46,431	41,819	34,805	34,703	-102	-0.3
OPEC	2,209	2,207	2,462	1,981	1,888	-94	-4.7
Latin America	31,218	37,182	31,759	27,705	24,648	-3,056	-11.0
CBERA	2,359	2,404	2,505	2,883	3,098	215	7.5
Asia	57,257	69,210	56,809	51,835	55,638	3,804	7.3
Sub-Saharan Africa	768	703	700	637	778	141	22.1
Central and Eastern Europe	841	866	872	823	942	119	14.4
U.S. imports of merchandise for consumption:							
China	20,917	27,588	27,231	36,270	47,150	10,881	30.0
Mexico	28,793	37,207	37,221	35,029	34,560	-470	-1.3
Japan	44,018	49,888	35,676	30,745	29,177	-1,569	-5.1
Malaysia	16,953	20,550	17,751	19,501	20,695	1,195	6.1
Canada	14,609	21,200	13,868	10,605	9,768	-836	-7.9
Korea	16,100	21,400	15,409	15,411	15,955	544	3.5
Taiwan	18,399	22,429	17,391	16,594	15,654	-940	-5.7
Germany	6,572	7,399	7,242	7,295	7,983	688	9.4
Singapore	14,916	15,362	11,462	10,669	10,066	-603	-5.6
United Kingdom	5,970	7,097	5,805	4,597	4,795	198	4.3
All other	41,221	47,734	40,515	42,530	43,030	501	1.2
Total	228,469	277,854	229,571	229,245	238,833	9,588	4.2
EU-15	24,822	28,630	26,545	27,220	28,986	1,765	6.5
OPEC	2,094	2,386	2,300	2,093	1,761	-332	-15.8
Latin America	31,867	40,277	40,186	38,299	38,105	-194	-0.5
CBERA	2,496	2,091	1,510	1,732	2,164	432	25.0
Asia	150,028	178,245	141,280	145,645	153,491	7,846	5.4
Sub-Saharan Africa	56	58	53	50	66	17	33.4
Central and Eastern Europe	1,449	1,816	1,327	1,207	1,425	218	18.1

See footnote(s) at end of table.

Table EL-1--Continued

Electronic products: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 1999-2003¹

Item	1999	2000	2001	2002	2003	Change, 2003 from 2002	
						Absolute	Percent
<i>Million dollars</i>							
U.S. merchandise trade balance:							
China	-17,975	-23,662	-22,340	-31,414	-41,216	-9,802	-31.2
Mexico	-9,231	-12,563	-16,423	-16,064	-18,146	-2,082	-13.0
Japan	-29,113	-32,093	-20,283	-18,935	-17,829	1,107	5.8
Malaysia	-11,155	-13,704	-12,606	-13,504	-13,406	98	0.7
Canada	7,441	3,807	6,241	6,420	6,869	449	7.0
Korea	-6,911	-10,838	-8,930	-9,031	-8,869	162	1.8
Taiwan	-13,153	-15,225	-11,729	-10,633	-10,099	534	5.0
Germany	1,520	1,254	1,544	345	-350	-695	(²)
Singapore	-8,214	-8,046	-6,269	-6,069	-5,075	995	16.4
United Kingdom	4,076	4,881	3,942	2,835	2,270	-565	-19.9
All other	16,392	17,323	17,891	7,235	7,856	622	8.6
Total	-66,324	-88,865	-68,962	-88,817	-97,994	-9,177	-10.3
EU-15	16,014	17,801	15,274	7,585	5,718	-1,867	-24.6
OPEC	115	-179	161	-111	127	238	(²)
Latin America	-649	-3,095	-8,427	-10,594	-13,457	-2,862	-27.0
CBERA	-137	313	995	1,151	934	-217	-18.9
Asia	-92,771	-109,035	-84,471	-93,811	-97,852	-4,042	-4.3
Sub-Saharan Africa	711	645	648	587	711	124	21.1
Central and Eastern Europe	-608	-950	-455	-383	-483	-99	-25.9

¹Import values are based on customs value; export values are based on f.a.s. value, U.S. port of export.

²Not meaningful for purposes of comparison.

Note.—Calculations based on unrounded data. The countries shown are those with the largest total U.S. trade (U.S. imports plus exports) in these products in 2003.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table EL-2
Leading changes in U.S. exports and imports of electronic products, 1999-2003

Industry/commodity group	1999	2000	2001	2002	2003	Change, 2003 from 2002	
						Absolute	Percent
<i>Million dollars</i>							
U.S. EXPORTS:							
Increases:							
Semiconductors and integrated circuits (ET033)	36,615	44,828	33,455	31,738	35,712	3,975	12.5
Decreases:							
Telephone and telegraph apparatus (ET017)	17,717	20,147	16,506	12,952	10,946	-2,007	-15.5
Computers, peripherals, and parts (ET035)	39,300	45,392	38,125	29,534	28,038	-1,496	-5.1
Cathode-ray tubes (ET031)	2,174	2,435	2,056	1,762	1,202	-560	-31.8
All other	66,339	76,186	70,468	64,442	64,941	499	0.8
TOTAL	162,146	188,989	160,610	140,428	140,838	411	0.3
U.S. IMPORTS:							
Increases:							
Telephone and telegraph apparatus (ET017)	20,147	32,130	27,174	27,948	30,982	3,034	10.9
Medical goods (ET040)	7,932	9,178	10,869	13,232	16,143	2,911	22.0
Television receivers and video monitors (ET022)	6,652	7,713	8,615	10,586	12,654	2,067	19.5
Computers, peripherals, and parts (ET035)	81,662	90,384	74,547	75,817	76,940	1,123	1.5
Decreases:							
Semiconductors and integrated circuits (ET033)	37,158	47,448	30,016	25,651	24,190	-1,461	-5.7
All other	74,918	91,002	78,350	76,011	77,924	1,913	2.5
TOTAL	228,469	277,854	229,571	229,245	238,833	9,588	4.2

Note.-Calculations based on unrounded data.

Source: Compiled from official statistics of the U.S. Department of Commerce.

countries, primarily because of low labor rates² and Chinese Government policies promoting foreign investment in China.³ China is endeavoring to become a producer of high-technology products and a more sophisticated marketer.⁴

² Daniel H. Rosen, "How China is Eating Mexico's Lunch: the Maquiladora System's Comparative Advantage is Being Challenged Head On," *The International Economy*, Spring 2003, found at http://www.findarticles.com/cf_dls/m2633/2_17/100545301/pl/article.jhtml, retrieved May 6, 2004; Chinafacturing Solutions, LLC, "Labor Costs in China: Comparative Costs by Region," found at http://www.chinafacturing.com/china_labor_costs.html, retrieved May 6, 2004.

³ "China to Promote Exports of Electronic, Machinery Products," *People's Daily*, Mar. 27, 2003, found at http://english.peopledaily.com.cn/200303/27/eng20030327_114049.shtml, retrieved Apr. 9, 2004.

⁴ Ibid.

Computers, Peripherals, and Parts

Change in 2003 from 2002:

U.S. trade deficit: Increased by \$2.6 billion (6 percent) to \$48.9 billion

U.S. exports: Decreased by \$1.5 billion (5 percent) to \$28.0 billion

U.S. imports: Increased by \$1.1 billion (2 percent) to \$76.9 billion

The computer hardware industry⁵ experienced an increase in U.S. imports, most notably from China, and a decrease in U.S. exports during 2003. Factors leading to the shifts in trade include the continued movement in recent years of U.S. computer hardware production to countries such as China and increased consumer purchases of personal computers (PCs).⁶

U.S. exports

U.S. exports of computer hardware decreased by approximately \$1.5 billion in 2003. U.S. exports of computer hardware to most of its major trading partners declined with the exception of a few countries. Exports to China, Singapore, and Thailand increased by approximately \$591 million in 2003, consisting primarily of computer parts and subassemblies.

The decline in U.S. exports can be attributed to two major factors: depressed worldwide business information technology (IT) expenditures and the decrease in U.S. production. A cautious spending approach by the international business market in IT purchases⁷ kept demand low for U.S. exports of computer hardware. U.S. and foreign corporate IT spending remained limited as businesses evaluated their IT needs in 2003, deciding against making large purchases, if possible.⁸ The shift of capital, production, and technology offshore, especially to China, by U.S. manufacturers,⁹ resulted in lower U.S. exports to serve foreign markets. China provides several benefits to manufacturers, such as low-cost labor coupled with an increasingly skilled labor force, greater levels of performance, and improvements in manufacturing productivity.¹⁰

U.S. imports

U.S. imports of computer hardware increased by approximately \$1.1 billion in 2003, primarily attributable to a significant increase in low-cost imports from China which increased 48 percent to \$22.1 billion. Imports from most other U.S. major trading partners decreased substantially owing to a general pattern of production shifting to China. An exception was Malaysia from which imports

⁵ The computer hardware industry can be divided into three main segments: personal computers (including notebooks), servers (including mainframes and supercomputers), and workstations. The PC segment is the largest sector of the computer hardware industry in terms of units and dollars. Standard & Poor's, "Industry Surveys, Computers: Hardware," Dec. 11, 2003, p. 1 and p. 7.

⁶ Worldwide personal computer unit shipments increased 11 percent. Semiconductor Industry Association, "Global Semiconductor Sales Up 18.3% in 2003," found at http://www.semichips.org/pre_release.cfm?ID=299, retrieved Mar. 25, 2004.

⁷ Standard & Poor's, "Industry Surveys, Computers: Hardware," p. 20.

⁸ "Global IT Spending Remains Flat Amidst Tentative Signs of U.S. Economic Recovery, According to IDC," Jul. 16, 2003, found at http://www.idc.com/getdoc.jsp?containerId=pr2003_07_15_150906, retrieved May 6, 2004; Dinesh C. Sharma, "IT Spending Remains Low, Study Says," found at <http://www.news.com.com/2100-1010-5107545.html>, retrieved May 6, 2004; and Dinesh C. Sharma, "Study: IT Spending to Improve in 2004," found at <http://news.com.com/2100-1012-5154580.html>, retrieved May 6, 2004.

⁹ Taizo Nishimuro, JEF/CSIS Conference, "Chinese Economic Development: Implications for the Global Economy," Oct. 15, 2003, found at http://www.csis.org/china/031015_nishimuro.pdf, retrieved Mar. 25, 2004.

¹⁰ CNET news.com, "Behind the Asian outsourcing phenomenon," found at <http://news.com.com/2030-1069-5162352.html>, retrieved Mar. 25, 2004.

increased 10 percent to \$10.0 billion. Most of the increase in imports from Malaysia consisted of portable automatic data processing machines, reflecting a growing demand for notebook computers in the consumer PC market.

A significant shift in production to China from the United States and other computer hardware-producing Asian countries has occurred since China acceded to the World Trade Organization. The Chinese Government has facilitated this shift by creating infrastructure such as industrial parks in special economic zones for the manufacturing industry.¹¹ Fourteen of the world's top 20 monitor display manufacturers and 6 notebook computer makers from Taiwan have built factories in China.¹² Major U.S. computer hardware original equipment manufacturers (OEMs) such as Dell and Hewlett-Packard and the largest contract manufacturers in the world also have shifted some operations to China, attempting to serve not only the U.S. market, but also the growing Asian markets.

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¹¹ U.S. Department of Commerce, U.S. and Foreign Commercial Service, *China Country Commercial Guide FY 2004*, found at <http://www.stat-usa.gov/>, retrieved Mar. 31, 2004.

¹² Global Sources, "China's computer industry output booming," Jan. 15, 2004, found at <http://www.globalsources.com/>, retrieved Feb. 26, 2004.

Medical Goods

Change in 2003 from 2002:

U.S. trade surplus: Decreased by \$1.1 billion (63 percent) to \$683 million

U.S. exports: Increased by \$1.8 billion (12 percent) to \$16.8 billion

U.S. imports: Increased by \$2.9 billion (22 percent) to \$16.1 billion

The United States is the world's largest producer of medical goods, producing a broad range of such goods from commodity hospital supplies to advanced electromedical equipment. Its traditional rivals have been Japan, Germany, and other larger European countries; however, in recent years, other countries such as Mexico, the Dominican Republic, Costa Rica, Malaysia, Ireland, and Switzerland have become more important as producers of medical goods, often in partnership with U.S.-headquartered firms. Owing to its longstanding strength as a global producer of medical products, the United States has maintained a trade surplus in such goods for the past decade. However, the U.S. trade surplus in such goods has declined in recent years, including 2003 when the surplus dropped below \$1 billion for the first time in 4 years. Despite healthy growth in U.S. exports, strong domestic demand for medical goods in the United States, the largest and most dynamic health care market in the world, led to an even greater increase in imports.

A large portion of the major shifts in U.S. trade in medical goods is owing to the continued globalization of the U.S. medical goods industry, resulting in increasing intrafirm trade between U.S. medical equipment producers and their overseas manufacturing facilities and partners.¹³ Such trade consists of intrafirm imports and exports of completed medical equipment and devices, including heart pacemakers, medical imaging equipment, and orthopedic goods, to fill different product niches in the United States and other global markets. The intrafirm trade also consists of (1) parts and subassemblies of low-end commodity hospital supplies, such as intravenous and blood administration sets, exported to and assembled in Latin America and Asia to reduce labor costs for products to be consumed primarily in the United States; and (2) more sophisticated components for such devices as pacemakers, defibrillators, and magnetic resonance imaging equipment exported to foreign manufacturing subsidiaries and partners¹⁴ in the European Union, Switzerland, and Japan for purposes of proximity to those important overseas markets for medical goods.¹⁵

U.S. exports

U.S. exports of medical goods increased 12 percent in 2003, to almost \$16.8 billion. The most significant growth occurred in exports to both Ireland and China, which increased by more than 40 percent. U.S. exports to Ireland consisted largely of components and subassemblies of implantable pacemakers and defibrillators, as that country has rapidly become one of the leading global manufacturers

¹³ U.S. industry representatives, communication with USITC staff, Feb. 24, 2004; U.S. industry representatives, telephone interviews by USITC staff, Mar. 2004; and U.S. industry representatives, interviews by USITC staff, Wisconsin, Illinois, and Michigan, Sept. 2002.

¹⁴ Components and subassemblies, as well as completed medical products, are also traded among, otherwise competing, global producers of advanced medical technology. For instance, U.S., European, and Japanese competitors often engage in such intra-industry trade to help one another fill out different medical imaging product lines and niches.

¹⁵ U.S. industry representative, communication with USITC staff, Feb. 24, 2004; U.S. industry representatives, telephone interviews by USITC staff, Mar. 2004; and U.S. industry representatives, interviews by USITC staff, Milwaukee, Wisconsin, and Chicago, Illinois, Sept. 2002.

of such devices.¹⁶ Two manufacturers of implantable pacemakers and defibrillators in the United States--Medtronic, the global leader, and Guidant--have continued to expand production capacity in Ireland for sales to the European and U.S. markets.¹⁷ U.S. exports to China grew partly owing to that country's rapid economic growth and government efforts to improve its healthcare infrastructure, causing demand to increase for a variety of medical goods such as patient monitoring systems, x-ray and other medical imaging equipment, and general medical and surgical instruments and apparatus. U.S. exports to China of parts and subassemblies of commodity hospital goods, such as intravenous and blood administration systems, also increased as U.S.-based firms transferred some of their labor-intensive production-sharing operations from Mexico and the Dominican Republic to China to take advantage of lower production and wage costs.¹⁸

U.S. imports

European and Chinese firms took advantage of the almost 8-percent growth in U.S. healthcare expenditures in 2003 to increase their exports of medical goods to the United States.¹⁹ With an almost 60-percent increase in exports to the United States in 2003, Ireland for the first time became the leading individual country supplier of U.S. imports of medical equipment, surpassing both traditional U.S. global rival Germany and Mexico. In 2003, major U.S. manufacturers continued to establish research and manufacturing facilities in Ireland,²⁰ allowing that country to broaden its base as a leading European supplier of pacemakers and defibrillators and expand into other high-technology products. For example, Boston Scientific, one of two leading innovators of drug-eluting stents,²¹ has established significant manufacturing and research capabilities in cardiovascular technology in Ireland over the past 2 years.²² In addition, Johnson & Johnson's De Puy division in Ireland manufactures and exports orthopedic implants to both the U.S. and European markets.²³ Meanwhile, Medtronic has been increasing its manufacturing of pacemaker, defibrillator, and other advanced cardiovascular products in Switzerland.²⁴ That country increased its exports to the United States by 70 percent from 2002 to 2003, largely owing to such U.S. investment. Finally, China and Mexico continued to supply the United States with imports of low-end commodity products, as U.S., Japanese, and European firms took advantage of relatively low-wage rates in those two countries to reduce their costs in supplying these high-volume, but low-margin, products to the United States. However, investment in the manufacture of more advanced medical products, such as cardiology devices, has recently been made by Medtronic and several other U.S.- and European-based

¹⁶ Enterprise Ireland, "Medical Devices and Diagnostics," *Sector Profiles*, 2003, pp. 1-3, found at <http://www.enterprise-ireland.com>, retrieved Mar. 1, 2004.

¹⁷ SEC 10-K filings by Medtronic Inc. and Guidant Corp., 2003.

¹⁸ U.S. industry representatives, telephone interviews by USITC staff, Mar. 1, 2004.

¹⁹ Although the rate of growth of U.S. healthcare expenditures declined more than 1 percent in 2003, the almost 8-percent increase in exports of medical goods in 2003 still well exceeds that in other major markets such as the European Union and Japan. U.S. Centers for Medicare and Medicaid Services (CMS), "Expected to Mark First Slowdown in Health Care Cost Growth in Six Years," p. 1, *CMS News*, found at <http://www.cms.hhs.gov>, retrieved Mar. 1, 2004.

²⁰ U.S. medical device firms benefitted from a series of programs by the Irish Government to implement national programs designed to increase labor force skills and to promote foreign investment in high technology industries. U.S. Central Intelligence Agency (CIA), "Ireland," *CIA The World Factbook 2003*, found at <http://www.cia.gov>, retrieved Mar. 1, 2004.

²¹ Stents are cylindrical metal, mesh-type, devices used to maintain the opening of arteries after angioplasty (balloon) catheterization procedures. The newest drug eluting stents have been shown in recent clinical trials to maintain the opening for longer periods than bare metal stents.

²² U.S. industry representative, communication with USITC staff, Feb. 24, 2004.

²³ Other major U.S.-based companies with manufacturing operations in Ireland include Abbott, Tyco, Baxter International, Johnson & Johnson, and De Puy. IDA Ireland, "Industry Profile-Medical Devices," 2004, p. 1, found at <http://www.Idaireland.com>, retrieved Feb. 25, 2004.

²⁴ Medtronic, *Europe and Emerging Markets*, p. 3, 2003, pp. 1-10, found at <http://www.medtronic.com>, retrieved Mar. 1, 2004.

medical goods firms in Shanghai, as Chinese workers become more skilled in the manufacture of medical goods.²⁵

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²⁵ SEC 10-K filings by Medtronic Inc., 2003; U.S. industry representatives, telephone interviews by USITC staff, Feb. 25 and Mar. 1, 2004; and U.S. industry representative, communication with USITC staff, Feb. 24, 2004.

Semiconductors and Integrated Circuits

Change in 2003 from 2002:

U.S. trade surplus: Increased by \$5.4 billion (89 percent) to \$11.5 billion

U.S. exports: Increased by \$4.0 billion (13 percent) to \$35.7 billion

U.S. imports: Decreased by \$1.5 billion (6 percent) to \$24.2 billion

After enjoying a modest recovery in 2002, the global semiconductor industry experienced major growth in 2003. Global sales in 2003 rose 18.3 percent, with growth in the second half of the year among the strongest on record.²⁶ U.S. exports reflected this marked growth and increased for the first time since 2000. In addition, for the third year in a row, U.S. imports declined, albeit less than the declines in 2002 and 2001. The increase in exports and decrease in imports led to an overall increase in the U.S. trade surplus of \$5.4 billion for 2003. This year was the third year in a row that the United States experienced a surplus in semiconductor trade after more than two decades of deficits.

U.S. exports

One of the main reasons for an increase in U.S. semiconductor exports was the relatively strong worldwide recovery of the industries that consume semiconductors, particularly the computer and telecommunications equipment industries, the two largest end markets of semiconductors. For example, personal computer (PC) shipments experienced an 11-percent unit volume increase worldwide, and the global wireless telecommunications equipment market grew 16 percent.²⁷

As the trend of electronic equipment production moving to Asia continues, the region remains, by far, the most important foreign market for U.S. semiconductors.²⁸ In 2003, U.S. exports to Asia increased by \$4.1 billion with most other regions experiencing minimal increases and one region, the EU, experiencing a decrease. As a result, Asia accounted for 75 percent of total exports in 2003, up from 71 percent in 2002. China, Malaysia, Korea, and the Philippines, in particular, experienced dramatic rises in U.S. exports in 2003 of 64, 36, 20, and 23 percent, respectively.

Besides direct demand from industries producing electronic equipment, other factors contributed to increasing U.S. exports to Asia. In an effort to keep down production costs, U.S. semiconductor manufacturers traditionally have engaged in production sharing arrangements wherein unfinished semiconductors are exported to East Asia to complete the more labor intensive production;²⁹ 2003 was no exception with production sharing partners Malaysia and the Philippines accounting for the greatest absolute increase in U.S. exports. After completion of the production process, most of the finished chips are shipped to a third country, often elsewhere in Asia, or back to the United States for final consumption.³⁰

U.S. imports

U.S. imports in 2003 decreased, primarily because the industries that consume semiconductors continue to move overseas, mainly to Asia. The value of U.S. imports of semiconductors fell 6 percent in 2003, the third year in a row in which U.S. imports have decreased. Of the 3 years of decreases, 2003

²⁶ "Global Semiconductor Sales Up 18.3% in 2003," Semiconductor Industry Association press release, Feb. 1, 2004, found at <http://www.semichips.org>, retrieved Mar. 8, 2004.

²⁷ Ibid.

²⁸ Bill McClean, Brian Matas, and Trevor Yancey, *The McClean Report: A Complete Analysis and Forecast of the Integrated Circuit Industry*, Richard D. Skinner, 2004 Edition (Arizona: IC Insights, Inc., 2004), pp. 2-11.

²⁹ Thomas Walter Smith, Standard & Poor's, *Industry Surveys: Semiconductors*, Jan. 15, 2004, pp. 13-14.

³⁰ *SIA 2003 Annual Report*, found at <http://www.semichips.org>, retrieved Mar. 10, 2004.

experienced the smallest percent and absolute decrease from the previous year. This limited decline was owing in large measure to a gradual increase in demand for semiconductor end use products caused by the general recovery of the U.S. economy in the second half of 2003 (see U.S. Merchandise Trade Performance). The decrease in U.S. imports was across the board, with declines occurring from each of the top 10 leading sources, with the exception of China.

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Telephone and Telegraph Apparatus

Change in 2003 from 2002:

U.S. trade deficit: Increased by \$5.0 billion (34 percent) to \$20.0 billion

U.S. exports: Decreased by \$2.0 billion (16 percent) to \$10.9 billion

U.S. imports: Increased by \$3.0 billion (11 percent) to \$31.0 billion

The U.S. trade deficit in telephone and telegraph apparatus increased significantly for the second year in a row. U.S. imports rose as certain segments of the U.S. telecommunications equipment market began to recover after declining and stagnant growth in 2001 and 2002,³¹ respectively. Declining network infrastructure investments and increased cellular phone competition in important Asian markets contributed to falling U.S. export revenues.

U.S. exports

U.S. exports of telephone and telegraph apparatus declined 16 percent to less than \$11 billion. The most significant reductions occurred in exports to China, Japan, Malaysia, Canada, and Mexico. China's market, one of the fastest growing markets for telecommunications equipment over the past 5 years, continued its second year of declining growth as that country's total investment in fixed telecommunications assets in 2002 and 2003³² was less than one-half the investment in 2001.³³ This decline in investment was owing in part to the completion of a number of major wireline and wireless network infrastructure projects.³⁴ Further, despite continued relatively high volume growth in the Chinese market for cellular telephones,³⁵ intense price competition,³⁶ movement of cell phone assembly by U.S.-based firms to China, and the emergence of several domestic suppliers in lower and mid-priced handsets in the past 2 years have slowed U.S. exports of all but the most sophisticated cellular telephones and parts. U.S. exports of telecommunications network equipment to Malaysia, meanwhile, dropped more than 40 percent, partly owing to increasing competition from Korean-based producers in that market, as well as the completion of some major telecommunications infrastructure projects there.³⁷ Finally, Japan and Canada, large mature markets for U.S.-made telecommunications equipment, continued to face large overcapacity in their fiber optic and other wireline network equipment markets. This contributed to a

³¹ Telecommunications Industry Association (TIA), *2003 Telecommunications Market Review and Forecast* (Washington, DC: TIA, 2003), p. 3.

³² However, industry experts indicate that total telecommunications equipment expenditures have recently begun to rebound in China, which likely will benefit U.S. exporters during the next several years. "U.S. Companies Sign \$2.3 billion in China Technology Deals," *IT Matters*, Jan. 15, 2004, pp. 1-3, found at <http://www.itmatters.com.ph>, retrieved Mar. 8, 2004; and U.S. industry representatives, telephone interviews by USITC staff, Mar. 2 and 8, 2004.

³³ "Telecom Equipment Industry Plows Ahead Despite Difficulties," TDCTrade.com, Mar. 17, 2004, pp. 1-4, found at <http://www.tdctrade.com>, retrieved Mar. 8, 2004.

³⁴ U.S. industry representatives, telephone interviews by USITC staff, Mar. 2 and 8, 2004.

³⁵ "U.S. Companies Sign \$2.3 billion in China Technology Deals," *IT Matters*, Jan. 15, 2004, pp. 1-3, found at <http://www.itmatters.com.ph>, retrieved Mar. 8, 2004.

³⁶ Although China accounts for a considerable portion of global wireless subscriber growth, adding about 5 million subscribers a month, handset prices are falling as wireless operators try to increase market share. Standard & Poor's, "Communications Equipment," *Standard & Poor's Industry Surveys*, Jan. 20, 2004, p. 3; and U.S. industry representative, telephone interview by USITC staff, Mar. 8, 2004.

³⁷ Maxis Communications Board, "GPRS Malaysia Asian Mobile Network Plans, Malaysia," *[Maxis]Industry Projects*, pp. 1-3, [undated], found at <http://www.mobilecommms-technology.com>, retrieved Feb. 25, 2004; Motorola Inc., SEC 10-K filing, Mar. 27, 2003, pp. 1-15, 2003; and U.S. industry representatives, telephone interviews by USITC staff, Mar. 2 and 8, 2004.

combined reduction of \$268 million in U.S. exports to both of those countries, representing a decline of 10 percent from the previous year.³⁸

U.S. imports

After continued sluggish U.S. demand for most types of telecommunications equipment in 2002,³⁹ growing purchases of wireless and specialized digital wireline products contributed to an increase of almost 11 percent in U.S. imports in 2003. Sales of cellular handsets and other wireless products continue to surge in the United States, compensating for declines in fiber optic and other wireline network equipment demand over the past several years.⁴⁰ Among the five leading worldwide producers of cell phones are two Korean-based firms, Samsung and LG Electronics,⁴¹ which helped Korea maintain its position as the largest supplier of U.S. imports of telecommunications equipment in 2003. Increased investment in cell phone assembly and use of contract manufacturers in China and Malaysia by other leading global cellular suppliers, including U.S.-based Motorola⁴² and European-headquartered Nokia and Siemens, over the past several years also contributed to significantly higher U.S. imports. Meanwhile, producers of digital communications gear in Germany, the United Kingdom, and Mexico took advantage of increased equipment demand⁴³ by U.S. telephone service providers, which were increasing their digital subscriber line offerings to customers demanding faster Internet connections.⁴⁴

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³⁸ U.S. industry representatives, telephone interviews by USITC staff, Mar. 2 and 8, 2004.

³⁹ Telecommunications Industry Association (TIA), *2003 Telecommunications Market Review and Forecast* (Washington, DC: TIA, 2003), pp. 3-14.

⁴⁰ Standard & Poor's, "Communications Equipment," *Standard & Poor's Industry Surveys*, Jan. 20, 2004, p. 3; and Telecommunications Industry Association (TIA), *2003 Telecommunications Market Review and Forecast* (Washington, DC: TIA, 2003), pp. 12-13.

⁴¹ Standard & Poor's, "Communications Equipment," *Standard & Poor's Industry Surveys*, Jan. 20, 2004, p. 6.

⁴² Motorola Inc., SEC 10-K filing, Mar. 27, 2003, pp. 1-15, 2003.

⁴³ Telecommunications Industry Association (TIA), "Table 111-1.5," *2003 Telecommunications Market Review and Forecast* (Washington, DC: TIA, 2003), p. 88.

⁴⁴ U.S. industry representatives, telephone interviews by USITC staff, Mar. 2, 8, and Apr. 8, 2004.

Television Receivers and Video Monitors

Change in 2003 from 2002:

U.S. trade deficit : Increased by \$2.5 billion (27 percent) to \$11.8 billion

U.S. exports: Decreased by \$449 million (36 percent) to \$809 million

U.S. imports: Increased by \$2.1 billion (20 percent) to \$12.7 billion

The trade deficit for television receivers and video monitors continued to grow in 2003, exceeding \$11 billion for the first time. U.S. demand for more expensive flat-panel receivers and monitors not made in the United States plus export-oriented low-end receivers from China led to the increase.⁴⁵

U.S. imports

U.S. imports of television receivers and video monitors increased 20 percent, to \$12.7 billion. The greatest increases in the value of U.S. imports were from China, Japan, and Korea, which grew by \$641 million, \$551 million, and \$463 million, respectively. Mexico, the largest source of U.S. imports, showed a gain of \$367 million.

China is a major source of low-cost television receivers for the U.S. market, with imports from China up 465 percent since 2001, when China acceded to the WTO. A number of factors are responsible for this dramatic increase. First, the Chinese Ministry of Commerce is actively promoting the export of electronic and machine products.⁴⁶ Second, Japanese television producers like Toshiba have moved production of picture-tube based television receivers to China in order to concentrate on producing higher value flat-panel⁴⁷ receivers at home.⁴⁸ Third, producers in China are beginning to manufacture LCD and plasma flat-panel televisions, including LCD panels.⁴⁹

The increases from Japan and Korea are owing to increased demand for larger and higher quality television receivers and monitors to take advantage of the growth in high definition programming available by broadcast, satellite, and cable signals,⁵⁰ and for television receivers and monitors incorporating flat panels, which are not made in the United States. As screen size and picture quality increase, so does price. Also, a flat-panel receiver or monitor costs more for a given screen size than a conventional picture-tube based receiver or monitor.

⁴⁵ China was the subject of an antidumping investigation, in which the Commission determined that the U.S. industry was materially injured by reason of imports of certain color television receivers from China. See USITC, Inv. No. 731-TA-1034 and 1035 (Final), *Certain Color Television Receivers from China*, publication 3659, May 2004.

⁴⁶ "China to Promote Exports of Electronic, Machinery Products," *People's Daily*, Mar. 27, 2004, found at http://english.peopledaily.com.cn/200303/27/eng20030327_114049.shtml, retrieved March 31, 2004.

⁴⁷ Flat-panel technology includes Liquid Crystal Display (LCD), Liquid Crystal on Silicon (LCOS), and plasma.

⁴⁸ "Japan's Toshiba to Shift Television Output to China," *People's Daily*, Mar. 19, 2001, found at http://fpeng.peopledaily.com.cn/200103/19/eng20010319_65362.html, retrieved Mar. 31, 2004.

⁴⁹ "Image Quality Upgrades Top Makers' Agendas," *Asian Sources: Electronics*, Jan. 2004, pp. 217 - 222.

⁵⁰ RCA, "New RCA HDTV Receiver Delivers Directv® Satellite, Digital and Analog Terrestrial Broadcasts," press release, Jan. 7, 2004, found at http://www.rca.com/content/viewdetail/1_2811_EI700571-CI258.00.html?, Apr. 1, 2004. RocSearch, "Research Report - HDTV Market," Jan. 2002, found at <http://www.rocsearch.com/ReportGallery/dispReport.asp>, retrieved Apr. 1, 2004; and Yankee Group, "Nearly 40 Percent of U.S. Homes will be Viewing HDTV Programs in Five Years, Says New Yankee Group Report," May 13, 2003, found at http://www.yankeegroup.com/public/news_releases/news_release_detail.jsp?ID=PressReleases/news_05122003_mes.htm, retrieved Apr. 1, 2004.

Advances in flat-panel technology have allowed the production of larger panels, up to 61 inches in diagonal measurement,⁵¹ taking flat panels out of the novelty market and making them suitable for use in a living room or family room. Because of their lighter weight and smaller footprint, flat-panel television receivers have increased the market for larger screen size receivers and monitors to include consumers who do not have room for a large picture-tube based receiver or a projection television. It is now possible to hang a flat-panel receiver or monitor on a wall like a painting. Demand for flat-panel television receivers in combination with DVD players for portable and mobile use is increasing. DVD players require less power and weigh less than videocassette players, the former source for playing back prerecorded video, making them more suitable for portable/mobile use. As production volumes of the new technology increase, economies of scale will permit the lowering of unit prices, increasing the market further. Some industry analysts are predicting that flat panel receivers and monitors will become the predominant television display in the future, usurping the picture tube, which has been the dominant technology since the inception of television.⁵²

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⁵¹ The largest screen size currently available in commercial quantities.

⁵² Greg Tarr, "Flat-Panel TV Suppliers Flood CE Market," *TWICE*, Jan. 8, 2004, found at <http://www.twice.com/>, Mar. 29, 2004. *Global Sources*, "China Makers Moving into 16:9 TV Production," May 23, 2003, found at http://www.electronics.globalsources.com/am/article_id/9000000041049/page/showarticle?action=GetArticle, Mar. 29, 2004.

Table EL-3

Electronic products : U.S. trade for industry/commodity groups and subgroups, 1999-2003¹

USITC code ²	Industry/commodity group	1999	2000	2001	2002	2003	Change, 2003 from 2002	
							Absolute	Percent
<i>Million dollars</i>								
ET016	Office machines:							
	Exports	967	1,033	1,061	816	725	-91	-11.2
	Imports	1,784	1,892	1,817	1,491	1,544	53	3.6
	Trade balance	-817	-859	-757	-675	-819	-144	-21.4
ET017	Telephone and telegraph apparatus:							
	Exports	17,717	20,147	16,506	12,952	10,946	-2,007	-15.5
	Imports	20,147	32,130	27,174	27,948	30,982	3,034	10.9
	Trade balance	-2,430	-11,982	-10,668	-14,996	-20,037	-5,041	-33.6
ET018	Consumer electronics (except televisions):							
	Exports	2,678	2,969	2,791	2,631	2,392	-239	-9.1
	Imports	18,282	21,974	19,525	21,455	21,471	16	0.1
	Trade balance	-15,604	-19,005	-16,734	-18,825	-19,079	-254	-1.4
ET019	Blank media:							
	Exports	1,692	1,420	1,017	970	1,082	111	11.5
	Imports	2,225	2,415	2,423	2,746	3,127	381	13.9
	Trade balance	-533	-995	-1,406	-1,776	-2,045	-269	-15.2
ET020	Prerecorded media:							
	Exports	3,707	3,636	3,195	3,069	3,010	-59	-1.9
	Imports	1,252	1,389	1,259	1,308	1,436	128	9.8
	Trade balance	2,455	2,247	1,935	1,761	1,574	-187	-10.6
ET021	Navigational instruments and remote control apparatus:							
	Exports	2,530	2,626	3,102	2,921	2,866	-55	-1.9
	Imports	1,361	1,702	1,796	1,858	2,286	427	23.0
	Trade balance	1,169	924	1,306	1,063	580	-483	-45.4
ET022	Television receivers and video monitors:							
	Exports	1,104	1,164	1,237	1,257	809	-449	-35.7
	Imports	6,652	7,713	8,615	10,586	12,654	2,067	19.5
	Trade balance	-5,548	-6,549	-7,378	-9,329	-11,845	-2,516	-27.0
ET023	Radio and television broadcasting equipment:							
	Exports	2,323	2,602	2,321	1,364	1,241	-123	-9.0
	Imports	4,948	7,178	6,066	4,977	4,120	-857	-17.2
	Trade balance	-2,624	-4,576	-3,745	-3,613	-2,879	734	20.3
ET024	Electric sound and visual signaling apparatus:							
	Exports	858	851	949	1,042	937	-105	-10.1
	Imports	2,053	2,334	1,968	1,797	1,845	48	2.6
	Trade balance	-1,195	-1,483	-1,020	-755	-908	-153	-20.3
ET025	Electrical capacitors and resistors:							
	Exports	2,393	3,410	2,002	1,706	1,623	-84	-4.9
	Imports	2,435	4,177	2,333	2,093	1,964	-129	-6.2
	Trade balance	-42	-767	-331	-386	-341	45	11.8
ET026	Printed circuits:							
	Exports	2,386	2,865	2,089	1,853	1,742	-111	-6.0
	Imports	2,236	2,988	2,141	1,896	1,785	-111	-5.8
	Trade balance	150	-123	-53	-44	-44	(³)	0.3
ET027	Circuit apparatus exceeding 1000V:							
	Exports	590	701	612	549	487	-62	-11.2
	Imports	287	386	357	338	272	-66	-19.5
	Trade balance	302	315	255	211	215	4	2.1

See footnote(s) at end of table.

Table EL-3--Continued

Electronic products : U.S. trade for industry/commodity groups and subgroups, 1999-2003¹

USITC code ²	Industry/commodity group	1999	2000	2001	2002	2003	Change, 2003 from 2002	
							Absolute	Percent
<i>Million dollars</i>								
ET028	Circuit apparatus not exceeding 1000V:							
	Exports	4,991	6,101	5,098	4,478	4,431	-46	-1.0
	Imports	5,606	6,872	5,280	4,933	5,127	195	3.9
	Trade balance	-615	-771	-182	-455	-696	-241	-53.0
ET029	Circuit apparatus assemblies:							
	Exports	1,078	1,340	1,179	1,108	1,150	42	3.8
	Imports	2,141	2,593	2,528	2,577	2,920	344	13.3
	Trade balance	-1,063	-1,253	-1,350	-1,469	-1,771	-301	-20.5
ET030	Parts of circuit apparatus:							
	Exports	1,809	1,914	1,503	1,592	1,807	215	13.5
	Imports	999	1,202	1,108	1,087	1,206	120	11.0
	Trade balance	809	712	396	506	601	95	18.8
ET031	Cathode-ray tubes:							
	Exports	2,174	2,435	2,056	1,762	1,202	-560	-31.8
	Imports	732	634	612	607	577	-30	-5.0
	Trade balance	1,442	1,801	1,444	1,155	625	-530	-45.9
ET032	Electron tubes other than CRTs:							
	Exports	215	209	178	180	165	-16	-8.7
	Imports	190	213	271	247	203	-44	-17.7
	Trade balance	25	-4	-93	-66	-38	28	42.2
ET033	Semiconductors and integrated circuits:							
	Exports	36,615	44,828	33,455	31,738	35,712	3,975	12.5
	Imports	37,158	47,448	30,016	25,651	24,190	-1,461	-5.7
	Trade balance	-542	-2,619	3,439	6,087	11,522	5,435	89.3
ET034	Miscellaneous electrical equipment:							
	Exports	1,590	2,153	1,805	1,564	1,426	-137	-8.8
	Imports	2,358	2,937	2,277	2,428	2,649	221	9.1
	Trade balance	-769	-784	-473	-865	-1,223	-358	-41.4
ET035	Computers, peripherals, and parts:							
	Exports	39,300	45,392	38,125	29,534	28,038	-1,496	-5.1
	Imports	81,662	90,384	74,547	75,817	76,940	1,123	1.5
	Trade balance	-42,362	-44,991	-36,422	-46,283	-48,902	-2,619	-5.7
ET036	Photographic film and paper:							
	Exports	2,154	2,755	1,953	2,127	2,233	106	5.0
	Imports	2,009	2,205	1,856	1,865	1,820	-45	-2.4
	Trade balance	146	550	96	262	413	151	57.5
ET037	Optical fibers, optical fiber bundles and cables:							
	Exports	1,081	1,888	1,689	474	437	-37	-7.8
	Imports	729	1,399	1,244	252	210	-42	-16.7
	Trade balance	352	488	446	222	227	5	2.2
ET038	Optical goods, including ophthalmic goods:							
	Exports	2,682	3,995	3,727	3,548	3,309	-240	-6.8
	Imports	4,225	5,881	4,957	4,142	4,495	353	8.5
	Trade balance	-1,543	-1,887	-1,230	-594	-1,186	-592	-99.7
ET039	Photographic cameras and equipment:							
	Exports	1,825	1,800	1,694	1,187	954	-233	-19.6
	Imports	5,843	5,299	3,560	3,029	2,715	-314	-10.4
	Trade balance	-4,018	-3,499	-1,866	-1,842	-1,761	81	4.4

See footnote(s) at end of table.

Table EL-3--Continued

Electronic products : U.S. trade for industry/commodity groups and subgroups, 1999-2003¹

USITC code ²	Industry/commodity group	1999	2000	2001	2002	2003	Change, 2003 from 2002	
							Absolute	Percent
		<i>Million dollars</i>						
ET040	Medical goods:							
	Exports	12,455	13,411	14,987	15,059	16,827	1,768	11.7
	Imports	7,932	9,178	10,869	13,232	16,143	2,911	22.0
	Trade balance	4,522	4,232	4,119	1,826	683	-1,143	-62.6
ET041	Watches and clocks:							
	Exports	335	348	279	235	242	8	3.3
	Imports	3,136	3,354	2,957	3,098	3,291	193	6.2
	Trade balance	-2,801	-3,006	-2,678	-2,864	-3,049	-185	-6.5
ET042	Drawing, drafting, and calculating instruments:							
	Exports	415	366	395	368	364	-4	-1.0
	Imports	431	234	207	192	223	32	16.5
	Trade balance	-15	132	188	176	141	-35	-20.0
ET043	Measuring, testing, and controlling instruments:							
	Exports	14,480	16,629	15,605	14,346	14,683	337	2.4
	Imports	9,656	11,743	11,806	11,595	12,638	1,042	9.0
	Trade balance	4,824	4,886	3,799	2,751	2,046	-705	-25.6

¹Import values are based on customs value; export values are based on f.a.s. value, U.S. port of export.

²This coding system is used by the U.S. International Trade Commission to identify major groupings and subgroupings of HTS import and export items for trade monitoring purposes

³Less than \$500,000.

Note.—Calculations based on unrounded data.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table EL-4

Electronic products sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 1999-2003

USITC code	Industry/commodity group	1999	2000	2001	2002	2003	Percent change, 2003 from 2002
ET016	Office machines:						
	Number of establishments	137	137	137	137	137	0.0
	Employees (thousands)	13.0	11.0	10.0	8.0	7.0	-12.5
	Capacity utilization (percent)	65	70	51	56	61	8.9
	U.S. shipments (million dollars)	2,993	2,711	3,072	2,460	2,200	-10.6
	U.S. exports (million dollars)	967	1,033	1,061	816	725	-11.2
	U.S. imports (million dollars)	1,784	1,892	1,817	1,491	1,544	3.6
	Apparent U.S. consumption (million dollars)	3,810	3,570	3,829	3,135	3,019	-3.7
	Trade balance (million dollars)	-817	-859	-757	-675	-819	-21.4
	Ratio of imports to consumption (percent)	46.8	53.0	47.5	47.6	51.1	7.4
	Ratio of exports to shipments (percent)	32.3	38.1	34.5	33.2	33.0	-0.6
ET017	Telephone and telegraph apparatus:						
	Number of establishments	1,056	1,030	1,000	980	965	-1.5
	Employees (thousands)	238.0	248.0	231.0	189.0	180.0	-4.8
	Capacity utilization (percent)	77	75	73	57	60	5.3
	U.S. shipments (million dollars)	79,544	93,614	80,151	62,718	64,700	3.2
	U.S. exports (million dollars)	17,717	20,147	16,506	12,952	10,946	-15.5
	U.S. imports (million dollars)	20,147	32,130	27,174	27,948	30,982	10.9
	Apparent U.S. consumption (million dollars)	81,974	105,596	90,819	77,714	84,737	9.0
	Trade balance (million dollars)	-2,430	-11,982	-10,668	-14,996	-20,037	-33.6
	Ratio of imports to consumption (percent)	24.6	30.4	29.9	36.0	36.6	1.7
	Ratio of exports to shipments (percent)	22.3	21.5	20.6	20.7	16.9	-18.4
ET018	Consumer electronics (except televisions):						
	Number of establishments	210	215	225	215	205	-4.7
	Employees (thousands)	20.0	21.0	21.0	20.0	18.0	-10.0
	Capacity utilization (percent)	58	58	58	54	50	-7.4
	U.S. shipments (million dollars)	4,235	4,260	4,200	4,000	3,600	-10.0
	U.S. exports (million dollars)	2,678	2,969	2,791	2,631	2,392	-9.1
	U.S. imports (million dollars)	18,282	21,974	19,525	21,455	21,471	(¹)
	Apparent U.S. consumption (million dollars)	19,839	23,265	20,934	22,825	22,679	-0.6
	Trade balance (million dollars)	-15,604	-19,005	-16,734	-18,825	-19,079	-1.4
	Ratio of imports to consumption (percent)	92.2	94.5	93.3	94.0	94.7	0.7
	Ratio of exports to shipments (percent)	63.2	69.7	66.5	65.8	66.4	0.9

See footnote(s) at end of table.

Table EL-4—Continued

Electronic products sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 1999-2003

USITC code	Industry/commodity group	1999	2000	2001	2002	2003	Percent change, 2003 from 2002
ET019	Blank media:						
	Number of establishments	240	230	220	212	210	-0.9
	Employees (thousands)	17.0	15.0	13.0	11.0	9.0	-18.2
	Capacity utilization (percent)	73	69	80	75	70	-6.7
	U.S. shipments (million dollars)	3,764	3,402	3,074	2,800	2,600	-7.1
	U.S. exports (million dollars)	1,692	1,420	1,017	970	1,082	11.5
	U.S. imports (million dollars)	2,225	2,415	2,423	2,746	3,127	13.9
	Apparent U.S. consumption (million dollars)	4,297	4,397	4,480	4,576	4,645	1.5
	Trade balance (million dollars)	-533	-995	-1,406	-1,776	-2,045	-15.2
	Ratio of imports to consumption (percent)	51.8	54.9	54.1	60.0	67.3	12.2
	Ratio of exports to shipments (percent)	45.0	41.8	33.1	34.6	41.6	20.2
ET020	Prerecorded media:						
	Number of establishments	670	680	690	700	708	1.1
	Employees (thousands)	29.0	29.0	29.0	28.0	27.0	-3.6
	Capacity utilization (percent)	78	75	66	70	74	5.7
	U.S. shipments (million dollars)	4,900	5,298	5,728	6,200	6,700	8.1
	U.S. exports (million dollars)	3,707	3,636	3,195	3,069	3,010	-1.9
	U.S. imports (million dollars)	1,252	1,389	1,259	1,308	1,436	9.8
	Apparent U.S. consumption (million dollars)	2,445	3,051	3,793	4,439	5,126	15.5
	Trade balance (million dollars)	2,455	2,247	1,935	1,761	1,574	-10.6
	Ratio of imports to consumption (percent)	51.2	45.5	33.2	29.5	28.0	-5.1
	Ratio of exports to shipments (percent)	75.7	68.6	55.8	49.5	44.9	-9.3
ET021	Navigational instruments and remote control apparatus:						
	Number of establishments	105	107	107	107	107	0.0
	Employees (thousands)	115.0	116.0	120.0	119.0	118.0	-0.8
	Capacity utilization (percent)	75	80	80	80	80	0.0
	U.S. shipments (million dollars)	15,500	18,500	21,275	22,125	22,000	-0.6
	U.S. exports (million dollars)	2,530	2,626	3,102	2,921	2,866	-1.9
	U.S. imports (million dollars)	1,361	1,702	1,796	1,858	2,286	23.0
	Apparent U.S. consumption (million dollars)	14,331	17,576	19,969	21,062	21,420	1.7
	Trade balance (million dollars)	1,169	924	1,306	1,063	580	-45.4
	Ratio of imports to consumption (percent)	9.5	9.7	9.0	8.8	10.7	21.6
	Ratio of exports to shipments (percent)	16.3	14.2	14.6	13.2	13.0	-1.5

See footnote(s) at end of table.

Table EL-4—Continued

Electronic products sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 1999-2003

USITC code	Industry/commodity group	1999	2000	2001	2002	2003	Percent change, 2003 from 2002
ET022	Television receivers and video monitors:						
	Number of establishments	14	12	10	9	8	-11.1
	Employees (thousands)	8.0	8.0	7.0	6.0	5.0	-16.7
	Capacity utilization (percent)	58	58	58	54	50	-7.4
	U.S. shipments (million dollars)	3,950	3,400	3,037	3,285	2,500	-23.9
	U.S. exports (million dollars)	1,104	1,164	1,237	1,257	809	-35.7
	U.S. imports (million dollars)	6,652	7,713	8,615	10,586	12,654	19.5
	Apparent U.S. consumption (million dollars)	9,498	9,949	10,415	12,614	14,345	13.7
	Trade balance (million dollars)	-5,548	-6,549	-7,378	-9,329	-11,845	-27.0
	Ratio of imports to consumption (percent)	70.0	77.5	82.7	83.9	88.2	5.1
	Ratio of exports to shipments (percent)	28.0	34.2	40.7	38.3	32.3	-15.7
ET023	Radio and television broadcasting equipment:						
	Number of establishments	155	160	165	170	175	2.9
	Employees (thousands)	15.0	15.0	15.0	14.0	13.0	-7.1
	Capacity utilization (percent)	71	73	65	56	48	-14.3
	U.S. shipments (million dollars)	4,000	3,900	3,500	3,300	3,000	-9.1
	U.S. exports (million dollars)	2,323	2,602	2,321	1,364	1,241	-9.0
	U.S. imports (million dollars)	4,948	7,178	6,066	4,977	4,120	-17.2
	Apparent U.S. consumption (million dollars)	6,624	8,476	7,245	6,913	5,879	-15.0
	Trade balance (million dollars)	-2,624	-4,576	-3,745	-3,613	-2,879	20.3
	Ratio of imports to consumption (percent)	74.7	84.7	83.7	72.0	70.1	-2.6
	Ratio of exports to shipments (percent)	58.1	66.7	66.3	41.3	41.4	(¹)
ET024	Electric sound and visual signaling apparatus:						
	Number of establishments	499	499	499	499	499	0.0
	Employees (thousands)	24.0	23.0	28.0	26.0	27.0	3.8
	Capacity utilization (percent)	78	71	66	66	66	0.0
	U.S. shipments (million dollars)	4,539	4,905	5,571	5,290	5,400	2.1
	U.S. exports (million dollars)	858	851	949	1,042	937	-10.1
	U.S. imports (million dollars)	2,053	2,334	1,968	1,797	1,845	2.6
	Apparent U.S. consumption (million dollars)	5,734	6,388	6,591	6,045	6,308	4.3
	Trade balance (million dollars)	-1,195	-1,483	-1,020	-755	-908	-20.3
	Ratio of imports to consumption (percent)	35.8	36.5	29.9	29.7	29.2	-1.7
	Ratio of exports to shipments (percent)	18.9	17.3	17.0	19.7	17.4	-11.7

See footnote(s) at end of table.

Table EL-4—Continued

Electronic products sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 1999-2003

USITC code	Industry/commodity group	1999	2000	2001	2002	2003	Percent change, 2003 from 2002
ET025	Electrical capacitors and resistors:						
	Number of establishments	286	276	267	214	253	18.2
	Employees (thousands)	26.0	27.0	24.0	19.0	22.0	15.8
	Capacity utilization (percent)	75	80	60	50	60	20.0
	U.S. shipments (million dollars)	3,006	3,768	2,510	1,983	2,346	18.3
	U.S. exports (million dollars)	2,393	3,410	2,002	1,706	1,623	-4.9
	U.S. imports (million dollars)	2,435	4,177	2,333	2,093	1,964	-6.2
	Apparent U.S. consumption (million dollars)	3,048	4,535	2,841	2,369	2,687	13.4
	Trade balance (million dollars)	-42	-767	-331	-386	-341	11.8
	Ratio of imports to consumption (percent)	79.9	92.1	82.1	88.3	73.1	-17.2
	Ratio of exports to shipments (percent)	79.6	90.5	79.8	86.0	69.2	-19.5
ET026	Printed circuits:						
	Number of establishments	730	694	641	435	515	18.4
	Employees (thousands)	83.0	86.0	75.0	51.0	60.0	17.6
	Capacity utilization (percent)	78	77	49	33	39	18.2
	U.S. shipments (million dollars)	9,150	11,892	8,911	6,045	7,151	18.3
	U.S. exports (million dollars)	2,386	2,865	2,089	1,853	1,742	-6.0
	U.S. imports (million dollars)	2,236	2,988	2,141	1,896	1,785	-5.8
	Apparent U.S. consumption (million dollars)	9,000	12,015	8,964	6,089	7,195	18.2
	Trade balance (million dollars)	150	-123	-53	-44	-44	(¹)
	Ratio of imports to consumption (percent)	24.8	24.9	23.9	31.1	24.8	-20.3
	Ratio of exports to shipments (percent)	26.1	24.1	23.4	30.6	24.4	-20.3
ET027	Circuit apparatus exceeding 1000V:						
	Number of establishments	200	210	200	200	200	0.0
	Employees (thousands)	15.0	17.0	16.0	15.0	14.0	-6.7
	Capacity utilization (percent)	75	80	60	60	60	0.0
	U.S. shipments (million dollars)	5,000	5,500	4,150	3,800	3,600	-5.3
	U.S. exports (million dollars)	590	701	612	549	487	-11.2
	U.S. imports (million dollars)	287	386	357	338	272	-19.5
	Apparent U.S. consumption (million dollars)	4,698	5,185	3,895	3,589	3,385	-5.7
	Trade balance (million dollars)	302	315	255	211	215	2.1
	Ratio of imports to consumption (percent)	6.1	7.4	9.2	9.4	8.0	-14.9
	Ratio of exports to shipments (percent)	11.8	12.7	14.7	14.4	13.5	-6.3

See footnote(s) at end of table.

Table EL-4—Continued

Electronic products sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 1999-2003

USITC code	Industry/commodity group	1999	2000	2001	2002	2003	Percent change, 2003 from 2002
ET028	Circuit apparatus not exceeding 1000V:						
	Number of establishments	600	620	600	600	600	0.0
	Employees (thousands)	50.0	55.0	52.0	46.0	43.0	-6.5
	Capacity utilization (percent)	75	80	60	60	60	0.0
	U.S. shipments (million dollars)	15,000	17,000	13,000	11,800	11,200	-5.1
	U.S. exports (million dollars)	4,991	6,101	5,098	4,478	4,431	-1.0
	U.S. imports (million dollars)	5,606	6,872	5,280	4,933	5,127	3.9
	Apparent U.S. consumption (million dollars)	15,615	17,771	13,182	12,255	11,896	-2.9
	Trade balance (million dollars)	-615	-771	-182	-455	-696	-53.0
	Ratio of imports to consumption (percent)	35.9	38.7	40.1	40.2	43.1	7.2
	Ratio of exports to shipments (percent)	33.3	35.9	39.2	37.9	39.6	4.5
ET031	Cathode-ray tubes:						
	Number of establishments	18	16	15	14	13	-7.1
	Employees (thousands)	14.0	13.0	12.0	11.0	8.0	-27.3
	Capacity utilization (percent)	77	80	64	73	83	13.7
	U.S. shipments (million dollars)	3,579	3,450	2,847	2,040	1,400	-31.4
	U.S. exports (million dollars)	2,174	2,435	2,056	1,762	1,202	-31.8
	U.S. imports (million dollars)	732	634	612	607	577	-5.0
	Apparent U.S. consumption (million dollars)	2,137	1,649	1,403	885	775	-12.5
	Trade balance (million dollars)	1,442	1,801	1,444	1,155	625	-45.9
	Ratio of imports to consumption (percent)	34.2	38.4	43.6	68.6	74.4	8.5
	Ratio of exports to shipments (percent)	60.7	70.6	72.2	86.4	85.8	-0.7
ET032	Electron tubes other than CRTs:						
	Number of establishments	43	40	38	35	33	-5.7
	Employees (thousands)	4.0	4.0	4.0	4.0	4.0	0.0
	Capacity utilization (percent)	77	80	64	64	60	-6.3
	U.S. shipments (million dollars)	696	730	661	628	594	-5.4
	U.S. exports (million dollars)	215	209	178	180	165	-8.7
	U.S. imports (million dollars)	190	213	271	247	203	-17.7
	Apparent U.S. consumption (million dollars)	671	734	754	694	632	-8.9
	Trade balance (million dollars)	25	-4	-93	-66	-38	42.2
	Ratio of imports to consumption (percent)	28.4	29.1	36.0	35.5	32.1	-9.6
	Ratio of exports to shipments (percent)	30.9	28.7	27.0	28.7	27.7	-3.5

See footnote(s) at end of table.

Table EL-4—Continued

Electronic products sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 1999-2003

USITC code	Industry/commodity group	1999	2000	2001	2002	2003	Percent change, 2003 from 2002
ET033	Semiconductors and integrated circuits:						
	Number of establishments	1,271	1,241	1,194	1,190	1,291	8.5
	Employees (thousands)	197.0	216.0	189.0	180.0	226.0	25.6
	Capacity utilization (percent)	86	87	57	57	86	50.9
	U.S. shipments (million dollars)	76,646	85,611	55,149	63,600	75,239	18.3
	U.S. exports (million dollars)	36,615	44,828	33,455	31,738	35,712	12.5
	U.S. imports (million dollars)	37,158	47,448	30,016	25,651	24,190	-5.7
	Apparent U.S. consumption (million dollars)	77,188	88,230	51,710	57,513	63,717	10.8
	Trade balance (million dollars)	-542	-2,619	3,439	6,087	11,522	89.3
	Ratio of imports to consumption (percent)	48.1	53.8	58.0	44.6	38.0	-14.8
	Ratio of exports to shipments (percent)	47.8	52.4	60.7	49.9	47.5	-4.8
ET035	Computers, peripherals, and parts:						
	Number of establishments	750	750	730	715	715	0.0
	Employees (thousands)	208.0	205.0	193.0	177.0	175.0	-1.1
	Capacity utilization (percent)	69	66	62	59	60	1.7
	U.S. shipments (million dollars)	113,161	110,028	89,528	82,100	84,000	2.3
	U.S. exports (million dollars)	39,300	45,392	38,125	29,534	28,038	-5.1
	U.S. imports (million dollars)	81,662	90,384	74,547	75,817	76,940	1.5
	Apparent U.S. consumption (million dollars)	155,523	155,019	125,950	128,383	132,902	3.5
	Trade balance (million dollars)	-42,362	-44,991	-36,422	-46,283	-48,902	-5.7
	Ratio of imports to consumption (percent)	52.5	58.3	59.2	59.1	57.9	-2.0
	Ratio of exports to shipments (percent)	34.7	41.3	42.6	36.0	33.4	-7.2
ET036	Photographic film and paper:						
	Number of establishments	310	310	310	310	310	0.0
	Employees (thousands)	34.0	34.0	33.0	34.0	30.0	-11.8
	Capacity utilization (percent)	85	80	65	69	73	5.8
	U.S. shipments (million dollars)	13,080	15,750	12,343	9,673	8,500	-12.1
	U.S. exports (million dollars)	2,154	2,755	1,953	2,127	2,233	5.0
	U.S. imports (million dollars)	2,009	2,205	1,856	1,865	1,820	-2.4
	Apparent U.S. consumption (million dollars)	12,934	15,200	12,247	9,411	8,087	-14.1
	Trade balance (million dollars)	146	550	96	262	413	57.5
	Ratio of imports to consumption (percent)	15.5	14.5	15.2	19.8	22.5	13.6
	Ratio of exports to shipments (percent)	16.5	17.5	15.8	22.0	26.3	19.5

See footnote(s) at end of table.

Table EL-4—Continued

Electronic products sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 1999-2003

USITC code	Industry/commodity group	1999	2000	2001	2002	2003	Percent change, 2003 from 2002
ET037	Optical fibers, optical fiber bundles and cables:						
	Number of establishments	68	72	60	45	47	4.4
	Employees (thousands)	14.0	15.0	13.0	8.0	8.0	0.0
	Capacity utilization (percent)	95	95	88	65	68	4.6
	U.S. shipments (million dollars)	4,800	5,800	5,300	4,000	4,300	7.5
	U.S. exports (million dollars)	1,081	1,888	1,689	474	437	-7.8
	U.S. imports (million dollars)	729	1,399	1,244	252	210	-16.7
	Apparent U.S. consumption (million dollars)	4,448	5,312	4,854	3,778	4,073	7.8
	Trade balance (million dollars)	352	488	446	222	227	2.2
	Ratio of imports to consumption (percent)	16.4	26.3	25.6	6.7	5.1	-23.9
	Ratio of exports to shipments (percent)	22.5	32.5	31.9	11.8	10.2	-13.6
ET038	Optical goods, including ophthalmic goods:						
	Number of establishments	950	1,000	900	850	855	0.6
	Employees (thousands)	63.0	70.0	60.0	50.0	50.0	0.0
	Capacity utilization (percent)	87	92	82	78	78	0.0
	U.S. shipments (million dollars)	6,550	8,515	7,960	7,700	7,800	1.3
	U.S. exports (million dollars)	2,682	3,995	3,727	3,548	3,309	-6.8
	U.S. imports (million dollars)	4,225	5,881	4,957	4,142	4,495	8.5
	Apparent U.S. consumption (million dollars)	8,093	10,402	9,190	8,294	8,986	8.3
	Trade balance (million dollars)	-1,543	-1,887	-1,230	-594	-1,186	-99.7
	Ratio of imports to consumption (percent)	52.2	56.5	53.9	49.9	50.0	(¹)
	Ratio of exports to shipments (percent)	40.9	46.9	46.8	46.1	42.4	-8.0
ET039	Photographic cameras and equipment:						
	Number of establishments	428	428	428	428	428	0.0
	Employees (thousands)	20.0	16.0	13.0	11.0	9.0	-18.2
	Capacity utilization (percent)	62	53	54	54	54	0.0
	U.S. shipments (million dollars)	8,397	5,463	3,567	2,854	2,400	-15.9
	U.S. exports (million dollars)	1,825	1,800	1,694	1,187	954	-19.6
	U.S. imports (million dollars)	5,843	5,299	3,560	3,029	2,715	-10.4
	Apparent U.S. consumption (million dollars)	12,415	8,962	5,433	4,696	4,161	-11.4
	Trade balance (million dollars)	-4,018	-3,499	-1,866	-1,842	-1,761	4.4
	Ratio of imports to consumption (percent)	47.1	59.1	65.5	64.5	65.2	1.1
	Ratio of exports to shipments (percent)	21.7	32.9	47.5	41.6	39.7	-4.6

See footnote(s) at end of table.

Table EL-4—Continued

Electronic products sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 1999-2003

USITC code	Industry/commodity group	1999	2000	2001	2002	2003	Percent change, 2003 from 2002
ET040	Medical goods:						
	Number of establishments	2,340	2,345	2,350	2,350	2,380	1.3
	Employees (thousands)	183.0	185.0	188.0	190.0	192.0	1.1
	Capacity utilization (percent)	91	92	94	94	95	1.1
	U.S. shipments (million dollars)	31,500	33,075	37,000	41,440	44,755	8.0
	U.S. exports (million dollars)	12,455	13,411	14,987	15,059	16,827	11.7
	U.S. imports (million dollars)	7,932	9,178	10,869	13,232	16,143	22.0
	Apparent U.S. consumption (million dollars)	26,978	28,843	32,881	39,614	44,072	11.3
	Trade balance (million dollars)	4,522	4,232	4,119	1,826	683	-62.6
	Ratio of imports to consumption (percent)	29.4	31.8	33.1	33.4	36.6	9.6
	Ratio of exports to shipments (percent)	39.5	40.5	40.5	36.3	37.6	3.6
ET041	Watches and clocks:						
	Number of establishments	145	145	145	145	145	0.0
	Employees (thousands)	7.0	7.0	6.0	6.0	6.0	0.0
	Capacity utilization (percent)	62	61	55	51	46	-9.8
	U.S. shipments (million dollars)	1,168	1,151	1,018	920	900	-2.2
	U.S. exports (million dollars)	335	348	279	235	242	3.3
	U.S. imports (million dollars)	3,136	3,354	2,957	3,098	3,291	6.2
	Apparent U.S. consumption (million dollars)	3,969	4,157	3,696	3,784	3,949	4.4
	Trade balance (million dollars)	-2,801	-3,006	-2,678	-2,864	-3,049	-6.5
	Ratio of imports to consumption (percent)	79.0	80.7	80.0	81.9	83.3	1.7
	Ratio of exports to shipments (percent)	28.7	30.3	27.4	25.5	26.9	5.5
ET042	Drawing, drafting, and calculating instruments:						
	Number of establishments	175	175	180	180	180	0.0
	Employees (thousands)	10.0	11.0	13.0	13.0	13.0	0.0
	Capacity utilization (percent)	75	80	80	75	70	-6.7
	U.S. shipments (million dollars)	605	720	825	875	865	-1.1
	U.S. exports (million dollars)	415	366	395	368	364	-1.0
	U.S. imports (million dollars)	431	234	207	192	223	16.5
	Apparent U.S. consumption (million dollars)	620	588	637	699	724	3.6
	Trade balance (million dollars)	-15	132	188	176	141	-20.0
	Ratio of imports to consumption (percent)	69.4	39.8	32.6	27.4	30.8	12.4
	Ratio of exports to shipments (percent)	68.7	50.8	47.9	42.0	42.1	(¹)

See footnote(s) at end of table.

Table EL-4—Continued

Electronic products sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 1999-2003

USITC code	Industry/commodity group	1999	2000	2001	2002	2003	Percent change, 2003 from 2002
ET043	Measuring, testing, and controlling instruments:						
	Number of establishments	3,235	3,235	3,235	3,235	3,235	0.0
	Employees (thousands)	245.0	245.0	245.0	242.0	240.0	-0.8
	Capacity utilization (percent)	75	75	75	75	75	0.0
	U.S. shipments (million dollars)	39,200	44,790	55,000	58,300	58,000	-0.5
	U.S. exports (million dollars)	14,480	16,629	15,605	14,346	14,683	2.4
	U.S. imports (million dollars)	9,656	11,743	11,806	11,595	12,638	9.0
	Apparent U.S. consumption (million dollars)	34,376	39,904	51,201	55,549	55,954	0.7
	Trade balance (million dollars)	4,824	4,886	3,799	2,751	2,046	-25.6
	Ratio of imports to consumption (percent)	28.1	29.4	23.1	20.9	22.6	8.1
	Ratio of exports to shipments (percent)	36.9	37.1	28.4	24.6	25.3	2.8

¹Less than 0.05 percent.

Note.—Calculations based on unrounded data.

Source: These data have been estimated by the Commission's international trade analysts on the basis of primary and secondary data sources including discussions with various Government and industry contacts. These estimated data are subject to change either from secondary sources or from detailed surveys the Commission often conducts in the course of statutory investigations or other work. Further, these data may undergo adjustments based on revisions in tariff nomenclature, classification practices, or redefinitions of industry classes.