

Machinery

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Change in 2006 from 2005:

U.S. trade deficit: Increased by \$2.8 billion (7 percent) to \$44.0 billion
U.S. exports: Increased by \$12.5 billion (15 percent) to \$94.6 billion
U.S. imports: Increased by \$15.3 billion (12 percent) to \$138.6 billion

The U.S. merchandise trade deficit in machinery continued to increase for the fifth consecutive year, rising by \$2.8 billion (7 percent) to \$44 billion. U.S. exports of machinery increased by \$12.5 billion (15 percent), whereas U.S. imports rose by \$15.3 billion (12 percent) in 2006. The primary growth driver in the machinery trade deficit continued to be annual U.S. growth in GDP of 3.3 percent, which resulted in increases in both durable goods orders and manufacturers' inventories.¹ The increase in U.S. machinery imports was broad-based, with the fastest growth categories consisting of household appliances, including commercial applications (\$2.1 billion); electric motors, generators and related equipment (\$1.8 billion); non-automotive electrical wire (\$1.4 billion); major household appliances and parts (\$1.3 billion); and semiconductor manufacturing equipment (\$1 billion).

U.S. Exports

The three markets that registered the largest percentage increases in U.S. exports in 2006 were China (24 percent), Korea (24 percent), and Italy (17 percent), together accounting for 12 percent of total machinery exports (table MT-1). The primary drivers of U.S. exports to these countries in 2006 were their rapidly expanding domestic economies and strong business machinery replacement demand. The leading export growth sectors included semiconductor manufacturing equipment (up by 30 percent to \$3.3 billion); nonautomotive insulated wire and cable (up by 28 percent to \$908 million); welding and soldering equipment (up by 34 percent, to \$293 million); and mineral-processing equipment (up by 31 percent to \$253 million).

¹ USDOC, BEA, "Gross Domestic Product and Corporate Profits."

TABLE MT-1 Machinery: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 2002–06^a

Item	2002	2003	2004	2005	2006	Change, 2006 from 2005	
						Absolute	Percent
	<i>Million dollars</i>						
U.S. exports of domestic merchandise:							
Mexico	9,183	9,086	10,078	11,418	12,454	1,037	9.1
Canada	15,207	15,310	16,214	18,008	20,054	2,046	11.4
China	2,730	3,091	4,729	4,275	5,296	1,021	23.9
Japan	3,328	3,493	4,629	4,563	5,186	623	13.6
Germany	2,625	2,581	2,906	3,372	3,816	445	13.2
Korea	2,521	2,713	3,293	3,808	4,711	903	23.7
Taiwan	3,217	2,384	4,865	4,264	4,706	441	10.3
United Kingdom	2,731	2,475	2,614	2,734	3,004	270	9.9
Italy	786	942	899	917	1,076	158	17.3
France	1,622	1,539	1,819	1,871	2,071	201	10.7
All other	19,312	19,848	24,698	26,857	32,231	5,375	20.0
Total	63,262	63,462	76,744	82,087	94,606	12,519	15.3
EU-15	11,669	11,671	12,929	14,163	15,857	1,694	12.0
EU-25	12,025	12,091	13,403	14,789	16,627	1,837	12.4
OPEC	2,476	2,307	3,204	3,576	4,535	959	26.8
Latin America	13,627	13,408	15,180	17,720	19,884	2,164	12.2
CBERA	1,357	1,366	1,519	1,942	2,195	253	13.0
Asia	16,799	16,692	24,591	23,355	28,117	4,762	20.4
Sub-Saharan Africa	672	714	882	895	1,131	236	26.4
Central and Eastern Europe	395	432	510	653	763	109	16.8
U.S. imports of merchandise for consumption:							
Mexico	16,321	16,596	18,029	20,173	23,036	2,863	14.2
Canada	9,810	10,071	11,233	12,129	13,371	1,242	10.2
China	10,467	13,922	17,585	21,314	25,916	4,602	21.6
Japan	12,689	14,013	17,042	18,589	19,707	1,117	6.0
Germany	8,902	9,985	12,039	13,711	14,665	954	7.0
Korea	2,554	2,505	2,771	3,725	4,021	296	8.0
Taiwan	2,743	2,800	3,195	3,236	3,422	186	5.7
United Kingdom	3,002	2,955	3,322	3,564	3,835	271	7.6
Italy	3,519	3,952	4,559	5,005	5,293	288	5.7
France	1,919	1,980	2,308	2,667	2,651	-17	-0.6
All other	13,254	14,359	16,480	19,144	22,676	3,532	18.4
Total	85,181	93,138	108,564	123,258	138,592	15,335	12.4
EU-15	23,076	25,086	28,717	32,694	35,698	3,004	9.2
EU-25	23,839	25,921	29,755	33,892	37,042	3,149	9.3
OPEC	219	221	311	331	450	119	35.9
Latin America	17,469	18,018	19,812	22,465	25,544	3,078	13.7
CBERA	235	324	442	580	735	155	26.6
Asia	31,163	36,166	44,313	50,927	58,277	7,350	14.4
Sub-Saharan Africa	231	182	196	274	316	42	15.4
Central and Eastern Europe	836	914	1,112	1,320	1,465	145	11.0

See footnote(s) at end of table.

TABLE MT-1 Machinery: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 2002–06¹—Continued

Item	2002	2003	2004	2005	2006	Change, 2006 from 2005		
						Absolute	Percent	
	<i>Million dollars</i>							
U.S. merchandise trade balance:								
Mexico	-7,138	-7,510	-7,951	-8,755	-10,582	-1,826	-20.9	
Canada	5,396	5,240	4,981	5,879	6,684	805	13.7	
China	-7,737	-10,831	-12,856	-17,039	-20,620	-3,581	-21.0	
Japan	-9,361	-10,520	-12,413	-14,026	-14,520	-494	-3.5	
Germany	-6,278	-7,404	-9,132	-10,339	-10,848	-510	-4.9	
Korea	-33	208	521	83	690	607	732.0	
Taiwan	474	-416	1,669	1,028	1,284	256	24.9	
United Kingdom	-271	-480	-708	-830	-831	-2	-0.2	
Italy	-2,732	-3,011	-3,660	-4,088	-4,217	-129	-3.2	
France	-297	-441	-489	-796	-579	217	27.3	
All other	6,058	5,489	8,218	7,713	9,556	1,843	23.9	
Total	-21,919	-29,676	-31,820	-41,171	-43,986	-2,815	-6.8	
EU-15	-11,408	-13,415	-15,787	-18,532	-19,841	-1,309	-7.1	
EU-25	-11,814	-13,830	-16,352	-19,103	-20,415	-1,312	-6.9	
OPEC	2,257	2,086	2,893	3,245	4,085	840	25.9	
Latin America	-3,842	-4,610	-4,632	-4,745	-5,659	-914	-19.3	
CBERA	1,122	1,043	1,077	1,362	1,460	98	7.2	
Asia	-14,364	-19,474	-19,721	-27,572	-30,160	-2,588	-9.4	
Sub-Saharan Africa	441	532	686	621	815	194	31.2	
Central and Eastern Europe	-441	-481	-602	-667	-702	-35	-5.3	

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

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 2006.

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

In 2006, total U.S. exports of welding and soldering equipment increased by \$293 million (34 percent) to \$1.2 billion (table MT-2). U.S. exports of welding and soldering equipment to China rose significantly as a result of rising demand in several domestic advanced technology industry sectors, including automotive, aerospace, and commercial building construction. The growth in demand for advanced technology products in China resulted in various U.S. welding corporations such as Lincoln Electric Holdings acquiring several large welding businesses from 2004 through 2006.² Principal types of welding and soldering equipment exported to China included electric laser, ultrasonic and resistance welding equipment, brazing (MIG) welding machines, and parts used in high-volume industry applications, such as production of heat-exchangers.³

U.S. exports of mineral-processing equipment increased by \$253 million (31 percent) to \$1.1 billion. A sharp increase in demand for U.S. exports of mineral-processing machinery in 2006 can be largely attributed to rising prices for commodities such as copper, aluminum, nickel, and zinc, and the weakening U.S. dollar against a broad spectrum of international currencies.⁴ China was the principal U.S. export market for mineral-processing machinery in 2006. Major types of mineral-processing equipment exported to China in 2006 were rock to road crushing machinery, gas and process compressors, pneumatic tools, soil purification and environmental remediation machinery, and surface and tunneling equipment.

High demand from Asian markets spurred U.S. production levels and contributed to increased U.S. exports of semiconductor manufacturing equipment (SME) in 2006, which increased by \$3.3 billion (30 percent) to \$14.2 billion. The major markets for U.S. SME including robotic exports in 2006 were Taiwan, Korea, Japan, Singapore, and China, collectively accounting for \$10.2 billion (71 percent) of total U.S. exports. The increase in demand for SME from these East Asian nations was largely attributed to expansion and modernization of production processes.⁵

U.S. exports of nonautomotive insulated electrical wire and cable also increased in 2006, rising by \$908 million (28 percent) to \$4.1 billion. This increase is reflective of economic growth in China, Korea, Canada, and Mexico in 2006.⁶ Insulated electrical wire and cable is employed in numerous applications, including oil exploration, telecommunications systems, computers, satellite communications, microwave cable, and aerospace electronics industries.⁷

² Datamonitor, "Lincoln Electric Holdings, Inc., Profile," 17.

³ Goldsberry, "Resistance Welding Technology Advances," 17.

⁴ EIU, "Country Profile, Australia," 30.

⁵ As a region, Asia accounted for \$11.1 billion (78 percent) of total U.S. exports, which reflects the region's status as a major semiconductor producer and consumer of these products. See "Semiconductor Manufacturing Equipment" in Electronic Products chapter.

⁶ Insulated Wire (IW) Company, "Company Profile."

⁷ Datamonitor, "Leviton Manufacturing Company Profile."

TABLE MT-2 Leading changes in U.S. exports and imports of machinery, 2002–06^a

Industry/commodity group	2002	2003	2004	2005	2006	Change, 2006 from 2005	
						Absolute	Percent
<i>Million dollars</i>							
U.S. EXPORTS:							
Increases:							
Semiconductor manufacturing machinery (MM087A) . .	6,972	7,242	12,790	10,971	14,232	3,261	29.7
Miscellaneous machinery (MM098)	6,793	6,409	7,434	8,299	9,509	1,211	14.6
Nonautomotive insulated electrical wire and related products (MM097)	2,856	2,660	2,936	3,202	4,110	908	28.4
Welding and soldering equipment (MM096)	635	618	818	872	1,165	293	33.5
Mineral processing machinery (MM077)	485	545	669	811	1,064	253	31.1
All other	45,521	45,988	52,098	57,932	64,526	6,594	11.4
TOTAL	63,262	63,462	76,744	82,087	94,606	12,519	15.3
U.S. IMPORTS:							
Increases:							
Electric motors, generators, and related equipment (MM091)	7,177	6,811	7,020	8,533	10,305	1,772	20.8
Nonautomotive insulated electrical wire and related products (MM097)	3,076	3,208	3,903	4,693	6,071	1,378	29.4
Major household appliances and parts (MM073A)	2,444	2,868	3,440	4,360	5,684	1,324	30.4
Semiconductor manufacturing machinery (MM087A) . .	3,304	2,750	3,586	3,857	4,902	1,045	27.1
All other	69,179	77,501	90,616	101,814	111,630	9,816	9.6
TOTAL	85,181	93,138	108,564	123,258	138,592	15,335	12.4

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

Note.—Calculations based on unrounded data.

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

U.S. Imports

The major source markets for U.S. imports for machinery were China, Mexico, and Japan. Collectively, these three major trading partners accounted for 50 percent of total sector imports in 2006.

In 2006, U.S. imports of household appliances, which include commercial applications rose by \$2.1 billion (15 percent) to \$16.6 billion. U.S. imports of commercial appliances from China are primarily for the residential or institutional markets. Leading appliance products imported from China included vacuum cleaners, microwave ovens, refrigerated display cases, and small-sized refrigerators used in college dormitories or studio apartments where space may be at a premium.⁸

Electric motors, generators, and related equipment registered the second-largest increase in the value of U.S. exports in 2006, rising by \$1.8 million (21 percent) to \$10.3 billion. U.S. imports of these products increased largely as a result of rapid U.S. growth in demand for AC motors and electrical generating sets, which included wind-powered electrical generating sets. The largest import sources of electric motors, generators, and related equipment were Mexico, China, and Japan, accounting for 51 percent of total exports. In 2006, China surpassed Japan as the second-leading source of sector imports with U.S. imports of \$1.5 billion and \$1.3 billion, respectively.

U.S. imports of nonautomotive insulated electrical wire and cable products also rose in 2006, by \$1.4 billion (29 percent) to \$6.1 billion. The U.S. rise in demand for insulated electrical wire was due largely to the continued strong growth in residential construction and building renovation.⁹ U.S. demand also increased in 2006 for ceramic insulated wire, nylon insulated wire, fiber optic cable, insulated wire cable, and rubber insulated wire. These various types of cable are used in numerous industrial applications, including electric power transmission, underwater cables, television and computer applications, and home renovations and fabrication industries.¹⁰

U.S. imports of welding and soldering equipment rose by approximately \$299 million (28 percent) to \$1.4 billion in 2006. China, the leading U.S. foreign supplier in 2006, has emerged as a major supplier of welding and soldering equipment. U.S. imports of welding and soldering equipment included arc welding power sources, robotic packages used in resistance welding, brazing and soldering equipment, and welding torches used in oxy-fuel welding and cutting.¹¹

The 2006 increase in SME imports was due largely to U.S. replacement demand and recent industry requirements for an alternate semiconductor wafer processing technology known as photolithography.¹² U.S. imports of SME from primary supplier Japan rose by \$1.0 billion (27 percent) to \$4.9 billion in 2006.

⁸ Datamonitor, "Haier Company Profile."

⁹ Driscoll, "U.S. Major Appliance and Home Furniture Industries," 1.

¹⁰ Shepard, "Plumbing's Next Generation. 53–55.

¹¹ Goldsberry, "Resistance Welding Technology Advances." 17–19.

¹² In 2006, photolithography equipment was the leading type of semiconductor equipment based on sales, accounting for 16 percent of total SME sales. See "Semiconductor Manufacturing Equipment" in Electronics chapter.

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Semiconductor Manufacturing Equipment

Change in 2006 from 2005:

U.S. trade surplus: Increased by \$2.2 billion (31 percent) to \$9.3 billion

U.S. exports: Increased by \$3.3 billion (30 percent) to \$14.2 billion

U.S. imports: Increased by \$1.0 billion (27 percent) to \$4.9 billion

U.S. trade in semiconductor manufacturing equipment (SME) increased substantially in 2006 due to an increase in U.S. and global demand for semiconductors and the trend by semiconductor producers to invest in more advanced manufacturing equipment (table MT-3).¹³ Global SME sales increased by 23 percent to \$40.47 billion in 2006, with increases in all major markets.¹⁴ The highest sales growth occurred in China, North America, and Taiwan.¹⁵ Sales in all major industry segments increased as well, with the global wafer-processing equipment market growing by 26 percent, the assembly and packaging segment increasing by 16 percent, and total test equipment sales growing by 21 percent.¹⁶ Overall, the U.S. trade surplus in semiconductor manufacturing equipment increased \$2.2 billion (31 percent) in 2006. For over 10 years, the United States has maintained a trade surplus in SME due to increased semiconductor production outside of the United States and the strength of the domestic SME industry.¹⁷

U.S. Exports

High demand from Asian markets plus strong U.S. production fueled the \$3.3 billion (30 percent) increase in U.S. exports of SME in 2006. The major markets for U.S. SME exports in 2006 were Taiwan, Korea, Japan, Singapore, and China, which together accounted for \$10.2 billion (71 percent) of total U.S. exports.¹⁸ Aggressive capital spending by Asian DRAM (dynamic random access memory) manufacturers fueled increased U.S. equipment exports to the region, particularly to Taiwan and Korea. Several Taiwanese DRAM producers made significant investments in the latest 300 mm semiconductor fabrication equipment in an attempt to gain DRAM market share, and Korean companies

¹³ SIA, "Global Chip Sales Hit Record \$247.7 Billion in 2006." Many semiconductor firms are upgrading to equipment that is designed to process 300 millimeter silicon wafers instead of the standard 200 millimeter wafers, and most newly constructed semiconductor fabrication plants incorporate 300 millimeter wafer processing equipment.

¹⁴ SEMI, "SEMI Reports 2006 Global Semiconductor Equipment Sales of \$40.47 Billion." Sales in 2006 represent the second-highest all time total in SME sales behind 2000.

¹⁵ Ibid.

¹⁶ U.S. industry representative, e-mail message to Commission staff, March 29, 2007.

¹⁷ Of the \$40.47 billion in global equipment sales in 2006, U.S. producers accounted for \$18.6 billion (46 percent), and 78 percent of U.S. headquartered firms' sales were due to exports. U.S. industry representative, e-mail message to Commission staff, March 29, 2007.

¹⁸ As a region, Asia accounted for \$11.1 billion (78 percent) of total U.S. exports, which reflects the region's status as a major semiconductor producer and SME consumer.

TABLE MT-3 Semiconductor manufacturing machinery (MM087A): U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 2002–06^a

Item	2002	2003	2004	2005	2006	Change, 2006 from 2005	
						Absolute	Percent
<i>Million dollars</i>							
U.S. exports of domestic merchandise:							
Japan	1,166	1,293	2,020	1,922	2,248	326	17.0
Taiwan	1,660	1,177	2,979	2,206	2,763	557	25.2
Korea	602	928	1,618	1,999	2,638	639	32.0
Singapore	583	560	1,476	764	1,376	612	80.1
Netherlands	64	77	185	154	248	94	61.1
China	551	529	1,261	662	1,143	481	72.6
Germany	440	420	544	658	703	45	6.9
Malaysia	252	228	362	298	523	225	75.6
Canada	354	350	325	338	466	127	37.6
Israel	82	93	136	89	148	59	66.5
All other	1,220	1,586	1,881	1,880	1,975	95	5.1
Total	6,972	7,242	12,790	10,971	14,232	3,261	29.7
EU-15	1,078	1,351	1,617	1,680	1,813	133	7.9
OPEC	26	33	32	48	61	13	27.1
Latin America	347	287	408	451	435	-16	-3.6
CBERA	16	25	21	59	31	-28	-47.4
Asia	4,991	5,012	10,159	8,222	11,114	2,892	35.2
Sub-Saharan Africa	7	14	14	14	21	7	46.8
Central and Eastern Europe	21	19	19	29	37	8	26.5
U.S. imports of merchandise for consumption:							
Japan	1,750	1,292	1,811	1,972	2,375	403	20.4
Taiwan	23	17	37	39	50	12	29.6
Korea	20	38	48	61	89	27	44.0
Singapore	16	28	84	85	135	50	58.5
Netherlands	665	665	636	761	1,108	347	45.6
China	8	25	31	34	85	51	147.8
Germany	258	193	284	291	321	30	10.4
Malaysia	15	34	77	49	59	10	21.0
Canada	32	32	50	46	57	11	23.7
Israel	140	100	178	147	204	57	39.1
All other	377	324	351	372	419	47	12.6
Total	3,304	2,750	3,586	3,857	4,902	1,045	27.1
EU-15	1,218	1,096	1,199	1,345	1,748	403	30.0
OPEC	(^b)	(^b)	1	1	2	1	89.0
Latin America	16	28	8	10	23	13	121.5
CBERA	11	18	1	1	10	9	924.1
Asia	1,849	1,443	2,100	2,259	2,817	558	24.7
Sub-Saharan Africa	(^b)	(^b)	(^b)	(^b)	(^b)	(^b)	32.3
Central and Eastern Europe	1	1	2	2	9	7	274.1

See footnote(s) at end of table.

TABLE MT-3 Semiconductor manufacturing machinery (MM087A): U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 2002–06^a—*continued*

Item	2002	2003	2004	2005	2006	Change, 2006 from 2005	
						Absolute	Percent
<i>Million dollars</i>							
U.S. merchandise trade balance:							
Japan	-584	(^b)	209	-50	-126	-77	-153.6
Taiwan	1,636	1,159	2,943	2,167	2,713	545	25.2
Korea	581	890	1,571	1,938	2,549	612	31.6
Singapore	567	531	1,392	679	1,241	562	82.8
Netherlands	-601	-587	-451	-607	-859	-253	-41.7
China	543	504	1,231	628	1,058	430	68.5
Germany	182	227	260	367	383	15	4.2
Malaysia	236	194	286	249	464	215	86.2
Canada	322	318	276	292	408	116	39.9
Israel	-58	-7	-41	-58	-56	2	2.9
All other	842	1,262	1,529	1,507	1,555	48	3.2
Total	3,668	4,492	9,204	7,113	9,330	2,216	31.2
EU-15	-140	255	418	335	65	-270	-80.6
OPEC	26	33	31	47	59	12	25.9
Latin America	330	259	400	441	412	-29	-6.5
CBERA	5	7	20	58	20	-37	-64.5
Asia	3,142	3,570	8,059	5,964	8,297	2,333	39.1
Sub-Saharan Africa	7	14	14	14	21	7	46.9
Central and Eastern Europe	20	18	17	27	28	1	4.0

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

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 2006.

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

^bLess than \$500,000.

continued their strong capital spending practices, in which they have engaged since 2003.¹⁹ Semiconductor pure-play foundries and flash memory producers, which are both heavily concentrated in Asia as well, also increased their equipment spending in 2006, thereby further contributing to the increase in U.S. SME exports to the region.²⁰

U.S. Imports

U.S. SME imports increased \$1.0 billion (27 percent) in 2006. Japan continued to be the largest foreign SME supplier to the U.S. market in 2006, accounting for \$2.4 billion (48 percent) of total U.S. imports. The Netherlands was the second-largest supplier of U.S. imports, accounting for \$1.1 billion (23 percent) of the total. Producers in these two countries accounted for the majority of all U.S. SME imports because they are reportedly the only suppliers in the world of an essential and very expensive semiconductor wafer processing tool known as photolithography equipment.²¹ U.S. based semiconductor producers are therefore dependent on imports of this equipment from Japan and the Netherlands.

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¹⁹ McClean, Matas, and Yancey, *The McClean Report*, 4-11-4-15.

²⁰ A pure-play foundry is a semiconductor company which provides only semiconductor manufacturing services; it does not provide semiconductor design services. The majority of foundries are located in Taiwan, Singapore, and China. Overall, Asia dominates the foundry industry with companies in the region accounting for over 90 percent of total foundry sales in 2006. This means U.S. equipment sales to pure-play foundries are almost exclusively to companies located in Asia, contributing to the increase in U.S. exports. See McClean, Matas, and Yancey, *The McClean Report*, 3-23.

²¹ Three companies are responsible for virtually all global production of photolithography equipment: Japanese companies Nikon Corp. and Canon Inc. and Dutch company ASML Holding. In 2006, photolithography equipment was the leading type of semiconductor equipment based on sales, accounting for 16 percent of total SME sales. U.S. industry representative, e-mail message to Commission staff, March 29, 2007.

Electric Motors, Generators, and Related Equipment

Change in 2006 from 2005:

U.S. trade deficit: Increased by \$889 million (26 percent) to \$4.3 billion

U.S. exports: Increased by \$883 million (17 percent) to \$6.0 billion

U.S. imports: Increased by \$1.8 billion (21 percent) to \$10.3 billion

The U.S. trade deficit in electric motors, generators and related equipment expanded by \$889 million (26 percent) to \$4.3 billion in 2006 as import growth (\$1.8 billion) outpaced exports (\$883 million). Import growth was largely driven by increased U.S. demand for alternating current (AC) motors and electrical generating sets, including wind-powered electrical generating sets. U.S. exports were driven largely by increased sales of electric generating sets and wind-powered electric generating sets. Production of these products is highly integrated within North America leading to large U.S. trade volumes with Canada and Mexico. China and Japan are also important sources of electric motors and generating sets.

U.S. Exports

U.S. exports of electric motors, generators, and related equipment expanded for the fifth consecutive year by \$883 million (17 percent) to \$6.0 billion in 2006 (table MT-4). The leading U.S. exports were electric generating sets, which increased by \$309 million (21 percent) in 2006. Though a relatively small sector component, exports of wind-powered generating sets increased substantially in 2006, from \$3.6 million to \$83.3 million (nearly 2,200 percent). This growth was fueled by robust global demand for alternative energy sources, including wind energy.²²

The principal export destinations for electric motors, generators, and related equipment were Canada and Mexico, which collectively accounted for \$2.8 billion (46 percent) of exports in 2006, and 58 percent of the growth in exports in 2006. Exports to Canada increased by \$441 million (42 percent), surpassing Mexico as the largest market for these products. Other important export destinations in 2006 were China (\$298 million, up 24 percent) and the United Kingdom (\$223 million, up 28 percent).

²² Global Wind Energy Council, "Global Wind Energy Markets Continue To Boom - 2006 Another Record Year."

TABLE MT-4 Electric motors, generators, and related equipment (MM091): U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 2002–06^a

Item	2002	2003	2004	2005	2006	Change, 2006 from 2005	
						Absolute	Percent
<i>Million dollars</i>							
U.S. exports of domestic merchandise:							
Mexico	999	1,056	1,061	1,234	1,303	69	5.6
Canada	949	822	951	1,048	1,488	441	42.1
China	107	108	204	239	298	58	24.4
Japan	110	126	105	116	124	8	6.9
Germany	103	103	99	137	152	16	11.4
Denmark	7	7	4	6	9	2	36.7
United Kingdom	179	128	150	174	223	49	28.0
Spain	44	33	55	61	87	26	42.9
Brazil	148	43	21	61	41	-20	-32.1
India	10	23	16	45	38	-7	-16.2
All other	1,266	1,582	2,008	1,993	2,233	241	12.1
Total	3,923	4,031	4,673	5,114	5,997	883	17.3
EU-15	643	603	717	765	925	160	20.9
EU-25	652	615	724	775	949	174	22.5
OPEC	179	353	412	346	359	13	3.6
Latin America	1,362	1,358	1,404	1,628	1,735	107	6.6
CBERA	88	91	140	111	141	30	26.9
Asia	650	666	909	1,023	1,208	185	18.1
Sub-Saharan Africa	43	27	73	64	85	21	33.5
Central and Eastern Europe	14	13	21	17	25	8	46.9
U.S. imports of merchandise for consumption:							
Mexico	2,117	2,161	2,175	2,282	2,424	142	6.2
Canada	503	464	500	576	698	122	21.2
China	552	687	850	1,140	1,535	395	34.7
Japan	1,362	959	1,113	1,279	1,341	61	4.8
Germany	675	499	480	612	640	28	4.6
Denmark	157	285	95	397	718	320	80.7
United Kingdom	306	241	288	300	407	107	35.5
Spain	17	58	21	90	343	252	279.2
Brazil	114	186	141	302	370	68	22.4
India	36	80	80	115	351	236	205.8
All other	1,339	1,192	1,277	1,440	1,479	39	2.7
Total	7,177	6,811	7,020	8,533	10,305	1,772	20.8
EU-15	1,666	1,536	1,343	1,992	2,670	678	34.0
EU-25	1,834	1,636	1,420	2,091	2,778	687	32.9
OPEC	14	14	28	34	32	-1	-4.0
Latin America	2,247	2,368	2,348	2,612	2,814	202	7.7
CBERA	13	18	24	25	18	-7	-28.0
Asia	2,420	2,208	2,612	3,105	3,837	732	23.6
Sub-Saharan Africa	4	4	8	8	13	5	57.8
Central and Eastern Europe	183	116	82	106	115	9	8.4

See footnote(s) at end of table.

TABLE MT-4 Electric motors, generators, and related equipment (MM091): U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 2002–06^a—*continued*

Item	2002	2003	2004	2005	2006	Change, 2006 from 2005	
						Absolute	Percent
	<i>Million dollars</i>						
U.S. merchandise trade balance:							
Mexico	-1,118	-1,105	-1,114	-1,048	-1,120	-73	-6.9
Canada	446	358	451	472	790	318	67.5
China	-445	-579	-646	-901	-1,238	-337	-37.4
Japan	-1,252	-833	-1,008	-1,164	-1,217	-53	-4.6
Germany	-572	-396	-381	-475	-488	-13	-2.7
Denmark	-149	-278	-91	-391	-709	-318	-81.4
United Kingdom	-126	-113	-138	-126	-184	-58	-45.8
Spain	26	-25	34	-29	-256	-226	-769.3
Brazil	34	-143	-120	-241	-329	-87	-36.3
India	-26	-57	-64	-70	-313	-243	-348.9
All other	-73	390	731	553	754	201	36.4
Total	-3,255	-2,780	-2,346	-3,420	-4,309	-889	-26.0
EU-15	-1,023	-932	-626	-1,228	-1,746	-518	-42.2
EU-25	-1,182	-1,021	-695	-1,316	-1,829	-513	-39.0
OPEC	164	339	384	313	327	14	4.4
Latin America	-885	-1,010	-943	-985	-1,080	-95	-9.6
CBERA	75	73	116	86	123	37	42.6
Asia	-1,770	-1,542	-1,703	-2,082	-2,629	-547	-26.3
Sub-Saharan Africa	39	23	65	55	72	17	29.9
Central and Eastern Europe	-169	-102	-60	-90	-91	-1	-1.2

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

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 2006.

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

U.S. Imports

U.S. imports of electric motors, generators, and related equipment increased by \$1.8 billion (21 percent) in 2006, to \$10.3 billion. The largest import sources were Mexico, China, and Japan which collectively accounted for 51 percent of sector imports. U.S. imports from Mexico and China increased by \$142 million (6.2 percent) and \$395 million (35 percent), respectively, while imports from Japan increased modestly, by \$61 million (5 percent). In 2006, China surpassed Japan as the second-leading source of imports, with \$1.5 billion and \$1.3 billion, respectively.

The leading U.S. imports in 2006 were AC motors, electrical generating sets, and wind-powered generating sets. In 2006, U.S. imports of AC motors increased by 23 percent to \$2.6 billion; electrical generating sets increased by 16 percent to \$1.0 billion; and wind-powered electrical generating sets increased by 150 percent to \$1.2 billion. According to the American Wind Energy Association, wind power is one of the fastest growing sources of new power generation, with over 2,400 megawatts of new capacity installed in 2006.²³ Denmark and Germany were leading suppliers of these wind-powered generating sets in 2006.

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²³ AWEA, "Annual U.S. Wind Power Rankings Track Industry's Rapid Growth."

TABLE MT-5 Machinery : U.S. trade for industry/commodity groups and subgroups, 2002–06^a

USITC code ^b	Industry/commodity group	2002	2003	2004	2005	Change, 2006 from 2005		
						2006	Absolute	Percent
<i>Million dollars</i>								
MM068	Wiring harnesses for motor vehicles:							
	Exports	961	868	878	939	930	-10	-1.0
	Imports	5,302	5,272	5,434	5,782	6,029	247	4.3
	Trade balance	-4,341	-4,404	-4,555	-4,843	-5,099	-257	-5.3
MM069	Pumps for motor vehicles:							
	Exports	681	690	771	743	790	48	6.4
	Imports	913	992	1,173	1,288	1,472	184	14.3
	Trade balance	-232	-302	-402	-546	-682	-136	-24.9
MM070	Pumps for liquids:							
	Exports	2,393	2,412	2,725	2,963	3,565	602	20.3
	Imports	1,883	2,180	2,673	3,302	3,952	649	19.7
	Trade balance	510	232	51	-339	-386	-47	-13.8
MM071	Air-conditioning equipment and parts:							
	Exports	5,318	5,334	5,794	6,340	6,861	522	8.2
	Imports	6,674	7,403	8,533	9,531	10,748	1,216	12.8
	Trade balance	-1,356	-2,070	-2,739	-3,192	-3,886	-695	-21.8
MM072	Industrial thermal-processing equipment and furnaces:							
	Exports	2,064	2,099	2,789	3,220	3,540	320	9.9
	Imports	1,671	1,660	1,880	2,350	2,853	504	21.4
	Trade balance	393	439	910	870	687	-183	-21.1
MM073	Household appliances, including commercial applications:							
	Exports	4,892	4,810	5,193	5,733	6,515	782	13.6
	Imports	9,587	10,782	12,489	14,464	16,574	2,110	14.6
	Trade balance	-4,695	-5,971	-7,296	-8,731	-10,059	-1,328	-15.2
MM073A	Major household appliances and parts:							
	Exports	1,610	1,655	1,773	1,991	2,309	318	16.0
	Imports	2,444	2,868	3,440	4,360	5,684	1,324	30.4
	Trade balance	-834	-1,212	-1,667	-2,369	-3,375	-1,006	-42.5
MM074	Centrifuges and filtering and purifying equipment:							
	Exports	3,045	3,022	3,277	3,505	4,060	556	15.9
	Imports	2,403	2,663	3,088	3,192	3,871	679	21.3
	Trade balance	642	358	189	313	189	-124	-39.5
MM075	Wrapping, packaging, and can-sealing machinery:							
	Exports	639	637	707	727	777	50	6.9
	Imports	1,333	1,505	1,725	1,811	1,966	154	8.5
	Trade balance	-694	-868	-1,018	-1,084	-1,188	-104	-9.6

See footnote(s) at end of table.

TABLE MT-5 Machinery : U.S. trade for industry/commodity groups and subgroups, 2002–06^a—Continued

USITC code ^b	Industry/commodity group	2002	2003	2004	2005	2006	Change, 2006 from 2005	
							Absolute	Percent
<i>Million dollars</i>								
MM076	Scales and weighing machinery:							
	Exports	164	155	155	148	155	6	4.3
	Imports	293	375	525	577	604	27	4.7
	Trade balance	-129	-220	-370	-429	-450	-21	-4.8
MM077	Mineral processing machinery:							
	Exports	485	545	669	811	1,064	253	31.1
	Imports	565	627	797	1,034	1,164	129	12.5
	Trade balance	-81	-82	-128	-223	-100	123	55.2
MM078	Farm and garden machinery and equipment:							
	Exports	4,747	5,109	6,098	6,885	7,533	648	9.4
	Imports	3,898	4,645	6,216	6,900	6,638	-262	-3.8
	Trade balance	848	464	-117	-15	895	910	(³)
MM079	Industrial food-processing and related machinery:							
	Exports	606	558	601	710	644	-66	-9.3
	Imports	570	684	758	839	853	14	1.7
	Trade balance	36	-126	-157	-129	-209	-80	-62.3
MM080	Pulp, paper, and paperboard machinery:							
	Exports	560	648	662	660	712	52	7.9
	Imports	719	867	938	948	1,086	138	14.5
	Trade balance	-159	-219	-276	-289	-374	-85	-29.6
MM081	Printing and related machinery:							
	Exports	1,136	1,215	1,300	1,443	1,526	83	5.7
	Imports	2,001	4,844	5,802	6,340	6,554	214	3.4
	Trade balance	-865	-3,628	-4,502	-4,897	-5,029	-132	-2.7
MM082	Textile machinery:							
	Exports	871	810	897	991	1,009	18	1.8
	Imports	1,314	1,316	1,410	1,561	1,264	-297	-19.0
	Trade balance	-442	-506	-513	-569	-255	315	55.3
MM083	Metal rolling mills:							
	Exports	169	182	243	314	351	37	11.9
	Imports	163	210	150	207	352	145	69.9
	Trade balance	7	-27	93	107	-1	-108	(^c)

See footnote(s) at end of table.

TABLE MT-5 Machinery : U.S. trade for industry/commodity groups and subgroups, 2002–06^a—Continued

USITC code ^b	Industry/commodity group	2002	2003	2004	2005	2006	Change, 2006 from 2005	
							Absolute	Percent
Million dollars								
MM084	Metal cutting machine tools and machine tool accessories:							
	Exports	1,634	1,585	1,749	2,037	2,510	472	23.2
	Imports	2,558	2,704	3,424	4,134	4,607	473	11.4
	Trade balance	-924	-1,118	-1,674	-2,097	-2,097	-1	(^d)
MM085	Metal forming machine tools:							
	Exports	652	691	733	851	957	106	12.5
	Imports	846	933	1,019	1,196	1,335	139	11.6
	Trade balance	-194	-242	-286	-345	-378	-33	-9.6
MM086	Non-metalworking machine tools:							
	Exports	768	711	1,083	1,110	1,159	49	4.4
	Imports	1,242	1,330	1,626	1,694	1,776	82	4.8
	Trade balance	-474	-619	-543	-584	-617	-33	-5.7
MM087	Semiconductor manufacturing equipment and robotics:							
	Exports	7,341	7,599	13,257	11,435	14,733	3,299	28.8
	Imports	3,679	3,152	4,151	4,515	5,612	1,097	24.3
	Trade balance	3,662	4,446	9,107	6,919	9,121	2,202	31.8
MM087A	Semiconductor manufacturing machinery:							
	Exports	6,972	7,242	12,790	10,971	14,232	3,261	29.7
	Imports	3,304	2,750	3,586	3,857	4,902	1,045	27.1
	Trade balance	3,668	4,492	9,204	7,113	9,330	2,216	31.2
MM088	Taps, cocks, valves, and similar devices:							
	Exports	3,202	3,329	3,685	4,235	5,010	775	18.3
	Imports	5,156	5,500	6,738	7,589	8,942	1,353	17.8
	Trade balance	-1,954	-2,171	-3,054	-3,354	-3,932	-578	-17.2
MM089	Mechanical power transmission equipment:							
	Exports	936	1,054	1,197	1,398	1,639	241	17.2
	Imports	1,994	2,222	2,638	3,252	3,439	187	5.8
	Trade balance	-1,057	-1,168	-1,441	-1,854	-1,800	54	2.9
MM090	Boilers, turbines, and related machinery:							
	Exports	892	875	909	1,124	1,130	7	0.6
	Imports	1,514	881	839	1,098	1,001	-97	-8.8
	Trade balance	-622	-6	70	26	129	103	401.5

See footnote(s) at end of table.

TABLE MT-5 Machinery : U.S. trade for industry/commodity groups and subgroups, 2002–06^a—Continued

USITC code ^b	Industry/commodity group	2002	2003	2004	2005	2006	Change, 2006 from 2005	
							Absolute	Percent
————— <i>Million dollars</i> —————								
MM091	Electric motors, generators, and related equipment:							
	Exports	3,923	4,031	4,673	5,114	5,997	883	17.3
	Imports	7,177	6,811	7,020	8,533	10,305	1,772	20.8
	Trade balance	-3,255	-2,780	-2,346	-3,420	-4,309	-889	-26.0
MM092	Electrical transformers, static converters, and inductors:							
	Exports	1,784	1,767	1,805	1,895	2,380	485	25.6
	Imports	4,707	4,680	5,496	5,973	6,989	1,016	17.0
	Trade balance	-2,923	-2,912	-3,692	-4,078	-4,608	-531	-13.0
MM093	Portable electric handtools:							
	Exports	212	191	180	185	165	-19	-10.5
	Imports	1,434	1,777	2,122	2,424	2,478	54	2.2
	Trade balance	-1,222	-1,586	-1,942	-2,239	-2,313	-74	-3.3
MM094	Nonelectrically powered handtools and parts thereof:							
	Exports	549	578	907	1,264	1,148	-116	-9.2
	Imports	961	992	1,235	1,396	1,513	117	8.4
	Trade balance	-412	-414	-328	-132	-365	-233	-176.9
MM095	Electric lamps (bulbs) and portable electric lights:							
	Exports	750	721	786	859	823	-36	-4.2
	Imports	1,687	1,748	2,094	2,202	2,375	173	7.9
	Trade balance	-937	-1,028	-1,309	-1,342	-1,552	-209	-15.6
MM096	Welding and soldering equipment:							
	Exports	635	618	818	872	1,165	293	33.5
	Imports	761	996	1,088	1,054	1,353	299	28.4
	Trade balance	-126	-378	-270	-182	-189	-7	-3.7
MM097	Nonautomotive insulated electrical wire and related products:							
	Exports	2,856	2,660	2,936	3,202	4,110	908	28.4
	Imports	3,076	3,208	3,903	4,693	6,071	1,378	29.4
	Trade balance	-220	-548	-966	-1,491	-1,961	-470	-31.5

See footnote(s) at end of table.

TABLE MT-5 Machinery : U.S. trade for industry/commodity groups and subgroups, 2002–06^a—Continued

USITC code ^b	Industry/commodity group	2002	2003	2004	2005	2006	Change, 2006 from 2005	
							Absolute	Percent
————— Million dollars —————								
MM098	Miscellaneous machinery:							
	Exports	6,793	6,409	7,434	8,299	9,509	1,211	14.6
	Imports	6,133	6,917	8,058	9,343	10,527	1,184	12.7
	Trade balance	660	-508	-624	-1,044	-1,017	27	2.6
MM099	Molds and molding machinery:							
	Exports	1,605	1,550	1,833	2,074	2,136	62	3.0
	Imports	2,969	3,262	3,525	4,035	4,290	255	6.3
	Trade balance	-1,363	-1,712	-1,691	-1,960	-2,153	-193	-9.9

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

Note.—Calculations based on unrounded data.

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

^bThis 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

^cNot meaningful for purposes of comparison.

^dLess than 0.05 percent.

TABLE MT-6 Machinery sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 2002–06

USITC code	Industry/commodity group	2002	2003	2004	2005	2006	Percent change, 2006 from 2005
MM068	Wiring harnesses for motor vehicles:						
	Number of establishments	(a)	(a)	(a)	(a)	(a)	(a)
	Employees (thousands)	(a)	(a)	(a)	(a)	(a)	(a)
	Capacity utilization (percent)	(a)	(a)	(a)	(a)	(a)	(a)
	U.S. shipments (million dollars)	6,450	6,100	6,270	6,300	6,500	3.2
	U.S. exports (million dollars)	961	868	878	939	930	-1.0
	U.S. imports (million dollars)	(b)	5,272	5,434	(b)	6,029	4.3
	Apparent U.S. consumption (million dollars)	10,791	10,504	10,825	11,143	11,599	4.1
	Trade balance (million dollars)	-4,341	-4,404	-4,555	-4,843	-5,099	-5.3
	Ratio of imports to consumption (percent)	49.1	50.2	50.2	51.9	52.0	0.2
	Ratio of exports to shipments (percent)	14.9	14.2	14.0	14.9	14.3	-4.1
MM069	Pumps for motor vehicles:						
	Number of establishments	225	202	196	(a)	(a)	(a)
	Employees (thousands)	30.0	27.0	23.0	(a)	(a)	(a)
	Capacity utilization (percent)	78	72	74	(a)	(a)	(a)
	U.S. shipments (million dollars)	3,384	3,046	3,000	3,100	3,200	3.2
	U.S. exports (million dollars)	681	690	771	743	790	6.4
	U.S. imports (million dollars)	(b)	992	1,173	(b)	1,472	14.3
	Apparent U.S. consumption (million dollars)	3,616	3,348	3,402	3,646	3,882	6.5
	Trade balance (million dollars)	-232	-302	-402	-546	-682	-24.9
	Ratio of imports to consumption (percent)	25.3	29.6	34.5	35.3	37.9	7.3
	Ratio of exports to shipments (percent)	20.1	22.7	25.7	24.0	24.7	3.1
MM070	Pumps for liquids:						
	Number of establishments	475	453	446	512	497	-2.9
	Employees (thousands)	35.0	31.0	26.0	32.0	30.0	-6.3
	Capacity utilization (percent)	69	66	64	71	70	-1.4
	U.S. shipments (million dollars)	6,867	6,660	6,594	7,253	8,473	16.8
	U.S. exports (million dollars)	2,393	2,412	2,725	2,963	3,565	20.3
	U.S. imports (million dollars)	(b)	2,180	2,673	(b)	3,952	19.7
	Apparent U.S. consumption (million dollars)	6,357	6,428	6,543	7,592	8,859	16.7
	Trade balance (million dollars)	510	232	51	-339	-386	-13.8
	Ratio of imports to consumption (percent)	29.6	33.9	40.9	43.5	44.6	2.5
	Ratio of exports to shipments (percent)	34.8	36.2	41.3	40.9	42.1	3.0
MM071	Air-conditioning equipment and parts:						
	Number of establishments	1,240	1,265	1,252	1,310	1,340	2.3
	Employees (thousands)	142.0	134.0	132.0	142.0	146.0	2.8
	Capacity utilization (percent)	71	71	68	70	66	-5.7
	U.S. shipments (million dollars)	23,894	24,372	24,859	28,837	28,293	-1.9
	U.S. exports (million dollars)	5,318	5,334	5,794	6,340	6,861	8.2
	U.S. imports (million dollars)	(b)	7,403	8,533	(b)	10,748	12.8
	Apparent U.S. consumption (million dollars)	25,250	26,442	27,598	32,029	32,179	0.5
	Trade balance (million dollars)	-1,356	-2,070	-2,739	-3,192	-3,886	-21.8
	Ratio of imports to consumption (percent)	26.4	28.0	30.9	29.8	33.4	12.2
	Ratio of exports to shipments (percent)	22.3	21.9	23.3	22.0	24.3	10.3

See footnote(s) at end of table.

TABLE MT-6 Machinery sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 2002–06—*Continued*

USITC code	Industry/commodity group	2002	2003	2004	2005	2006	Percent change, 2006 from 2005
MM072	Industrial thermal-processing equipment and furnaces:						
	Number of establishments	325	323	326	319	328	2.8
	Employees (thousands)	32.0	32.0	30.0	28.0	30.0	7.1
	Capacity utilization (percent)	67	66	69	60	58	-3.3
	U.S. shipments (million dollars)	3,599	3,675	3,749	3,861	4,055	5.0
	U.S. exports (million dollars)	2,064	2,099	2,789	3,220	3,540	9.9
	U.S. imports (million dollars)	^(b)	1,660	1,880	^(b)	2,853	21.4
	Apparent U.S. consumption (million dollars)	3,206	3,236	2,839	2,991	3,368	12.6
	Trade balance (million dollars)	393	439	910	870	687	-21.1
	Ratio of imports to consumption (percent)	52.1	51.3	66.2	78.6	84.7	7.8
	Ratio of exports to shipments (percent)	57.4	57.1	74.4	83.4	87.3	4.7
MM073	Household appliances, including commercial applications:						
	Number of establishments	95	99	93	95	98	3.2
	Employees (thousands)	53.0	53.0	50.0	53.0	51.0	-3.8
	Capacity utilization (percent)	69	70	72	74	72	-2.7
	U.S. shipments (million dollars)	15,427	15,736	16,129	17,258	17,776	3.0
	U.S. exports (million dollars)	4,892	4,810	5,193	5,733	6,515	13.6
	U.S. imports (million dollars)	^(b)	10,782	12,489	^(b)	16,574	14.6
	Apparent U.S. consumption (million dollars)	20,122	21,707	23,425	25,989	27,835	7.1
	Trade balance (million dollars)	-4,695	-5,971	-7,296	-8,731	-10,059	-15.2
	Ratio of imports to consumption (percent)	47.6	49.7	53.3	55.7	59.5	7.0
	Ratio of exports to shipments (percent)	31.7	30.6	32.2	33.2	36.7	10.3
MM073A	Major household appliances and parts:						
	Number of establishments	255	282	270	265	267	0.8
	Employees (thousands)	76.0	78.0	72.0	73.0	76.0	4.1
	Capacity utilization (percent)	71	75	73	76	74	-2.6
	U.S. shipments (million dollars)	14,544	15,126	15,504	16,589	17,418	5.0
	U.S. exports (million dollars)	1,610	1,655	1,773	1,991	2,309	16.0
	U.S. imports (million dollars)	^(b)	2,868	3,440	^(b)	5,684	30.4
	Apparent U.S. consumption (million dollars)	15,378	16,338	17,171	18,958	20,793	9.7
	Trade balance (million dollars)	-834	-1,212	-1,667	-2,369	-3,375	-42.5
	Ratio of imports to consumption (percent)	15.9	17.6	20.0	23.0	27.3	18.9
	Ratio of exports to shipments (percent)	11.1	10.9	11.4	12.0	13.3	10.5
MM075	Wrapping, packaging, and can-sealing machinery:						
	Number of establishments	813	813	808	780	780	0.0
	Employees (thousands)	25.0	24.0	22.0	20.0	21.0	5.0
	Capacity utilization (percent)	62	60	66	70	73	4.3
	U.S. shipments (million dollars)	3,764	3,904	3,614	3,591	3,771	5.0
	U.S. exports (million dollars)	639	637	707	727	777	6.9
	U.S. imports (million dollars)	^(b)	1,505	1,725	^(b)	1,966	8.5
	Apparent U.S. consumption (million dollars)	4,458	4,772	4,632	4,675	4,959	6.1
	Trade balance (million dollars)	-694	-868	-1,018	-1,084	-1,188	-9.6
	Ratio of imports to consumption (percent)	29.9	31.5	37.2	38.7	39.6	2.3
	Ratio of exports to shipments (percent)	17.0	16.3	19.6	20.2	20.6	1.8

See footnote(s) at end of table.

TABLE MT-6 Machinery sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 2002–06—*Continued*

USITC code	Industry/commodity group	2002	2003	2004	2005	2006	Percent change, 2006 from 2005
MM076	Scales and weighing machinery:						
	Number of establishments	113	111	110	97	88	-9.3
	Employees (thousands)	4.3	4.2	4.1	3.9	3.6	-7.7
	Capacity utilization (percent)	54	55	57	67	65	-3.0
	U.S. shipments (million dollars)	692	694	696	689	660	-4.2
	U.S. exports (million dollars)	164	155	155	148	155	4.3
	U.S. imports (million dollars)	^(b)	375	525	^(b)	604	4.7
	Apparent U.S. consumption (million dollars)	821	914	1,066	1,118	1,110	-0.7
	Trade balance (million dollars)	-129	-220	-370	-429	-450	-4.8
	Ratio of imports to consumption (percent)	35.7	41.0	49.2	51.6	54.5	5.5
Ratio of exports to shipments (percent)	23.7	22.4	22.3	21.5	23.4	8.9	
MM077	Mineral processing machinery:						
	Number of establishments	236	232	228	224	235	4.9
	Employees (thousands)	9.7	9.1	8.8	8.3	8.6	3.6
	Capacity utilization (percent)	53	57	74	80	83	3.8
	U.S. shipments (million dollars)	2,127	2,145	2,244	2,342	2,872	22.6
	U.S. exports (million dollars)	485	545	669	811	1,064	31.1
	U.S. imports (million dollars)	^(b)	627	797	^(b)	1,164	12.5
	Apparent U.S. consumption (million dollars)	2,208	2,227	2,372	2,565	2,972	15.9
	Trade balance (million dollars)	-81	-82	-128	-223	-100	55.2
	Ratio of imports to consumption (percent)	25.6	28.1	33.6	40.3	39.2	-2.9
Ratio of exports to shipments (percent)	22.8	25.4	29.8	34.6	37.0	6.9	
MM078	Farm and garden machinery and equipment:						
	Number of establishments	1,400	1,400	1,400	1,400	1,400	0.0
	Employees (thousands)	76.0	76.0	74.0	74.0	74.0	0.0
	Capacity utilization (percent)	67	70	70	70	70	0.0
	U.S. shipments (million dollars)	19,464	20,864	22,270	22,048	22,600	2.5
	U.S. exports (million dollars)	4,747	5,109	6,098	6,885	7,533	9.4
	U.S. imports (million dollars)	^(b)	4,645	6,216	^(b)	6,638	-3.8
	Apparent U.S. consumption (million dollars)	18,616	20,400	22,387	22,063	21,705	-1.6
	Trade balance (million dollars)	848	464	-117	-15	895	^(c)
	Ratio of imports to consumption (percent)	20.9	22.8	27.8	31.3	30.6	-2.2
Ratio of exports to shipments (percent)	24.4	24.5	27.4	31.2	33.3	6.7	
MM079	Industrial food-processing and related machinery:						
	Number of establishments	549	553	550	500	500	0.0
	Employees (thousands)	19.0	19.0	19.0	20.0	21.0	5.0
	Capacity utilization (percent)	68	55	73	71	76	7.0
	U.S. shipments (million dollars)	2,572	2,620	2,774	2,869	2,912	1.5
	U.S. exports (million dollars)	606	558	601	710	644	-9.3
	U.S. imports (million dollars)	^(b)	684	758	^(b)	853	1.7
	Apparent U.S. consumption (million dollars)	2,536	2,746	2,931	2,998	3,121	4.1
	Trade balance (million dollars)	36	-126	-157	-129	-209	-62.3
	Ratio of imports to consumption (percent)	22.5	24.9	25.9	28.0	27.3	-2.3
Ratio of exports to shipments (percent)	23.6	21.3	21.7	24.7	22.1	-10.7	

See footnote(s) at end of table.

TABLE MT-6 Machinery sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 2002–06—*Continued*

USITC code	Industry/commodity group	2002	2003	2004	2005	2006	Percent change, 2006 from 2005
MM080	Pulp, paper, and paperboard machinery:						
	Number of establishments	290	275	261	245	232	-5.3
	Employees (thousands)	10.8	10.8	9.4	8.0	6.5	-18.8
	Capacity utilization (percent)	^(d)	^(d)	^(d)	^(d)	^(d)	^(d)
	U.S. shipments (million dollars)	1,588	1,764	1,667	1,786	1,206	-32.5
	U.S. exports (million dollars)	560	648	662	660	712	7.9
	U.S. imports (million dollars)	^(b)	867	938	^(b)	1,086	14.5
	Apparent U.S. consumption (million dollars)	1,747	1,983	1,943	2,075	1,580	-23.8
	Trade balance (million dollars)	-159	-219	-276	-289	-374	-29.6
	Ratio of imports to consumption (percent)	41.1	43.7	48.3	45.7	68.7	50.4
	Ratio of exports to shipments (percent)	35.2	36.7	39.7	36.9	59.0	59.8
MM081	Printing and related machinery:						
	Number of establishments	456	485	478	478	478	0.0
	Employees (thousands)	14.0	15.0	15.0	15.0	15.0	0.0
	Capacity utilization (percent)	58	65	67	67	67	0.0
	U.S. shipments (million dollars)	2,879	2,863	2,834	2,619	2,517	-3.9
	U.S. exports (million dollars)	1,136	1,215	1,300	1,443	1,526	5.7
	U.S. imports (million dollars)	^(b)	4,844	5,802	^(b)	6,554	3.4
	Apparent U.S. consumption (million dollars)	3,744	6,491	7,336	7,516	7,546	0.4
	Trade balance (million dollars)	-865	-3,628	-4,502	-4,897	-5,029	-2.7
	Ratio of imports to consumption (percent)	53.4	74.6	79.1	84.4	86.9	3.0
	Ratio of exports to shipments (percent)	39.5	42.5	45.9	55.1	60.6	10.0
MM082	Textile machinery:						
	Number of establishments	420	400	388	388	392	1.0
	Employees (thousands)	10.0	8.0	7.0	16.0	17.0	6.3
	Capacity utilization (percent)	^(a)	31	32	35	38	8.6
	U.S. shipments (million dollars)	1,377	1,308	1,295	1,131	1,142	1.0
	U.S. exports (million dollars)	871	810	897	991	1,009	1.8
	U.S. imports (million dollars)	^(b)	1,316	1,410	^(b)	1,264	-19.0
	Apparent U.S. consumption (million dollars)	1,819	1,814	1,808	1,700	1,397	-17.9
	Trade balance (million dollars)	-442	-506	-513	-569	-255	55.3
	Ratio of imports to consumption (percent)	72.2	72.5	78.0	91.8	90.5	-1.4
MM083	Metal rolling mills:						
	Number of establishments	79	79	79	79	79	0.0
	Employees (thousands)	3.0	2.0	2.0	2.0	2.0	0.0
	Capacity utilization (percent)	58	56	51	53	55	3.8
	U.S. shipments (million dollars)	500	480	440	580	650	12.1
	U.S. exports (million dollars)	169	182	243	314	351	11.9
	U.S. imports (million dollars)	^(b)	210	150	^(b)	352	69.9
	Apparent U.S. consumption (million dollars)	493	507	347	473	651	37.6
	Trade balance (million dollars)	7	-27	93	107	-1	^(c)
	Ratio of imports to consumption (percent)	33.0	41.3	43.2	43.8	54.1	23.5
	Ratio of exports to shipments (percent)	33.9	38.0	55.2	54.1	54.0	-0.2
	Ratio of exports to shipments (percent)	63.3	61.9	69.2	87.7	88.4	0.8

See footnote(s) at end of table.

TABLE MT-6 Machinery sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 2002–06—*Continued*

USITC code	Industry/commodity group	2002	2003	2004	2005	2006	Percent change, 2006 from 2005
MM084	Metal cutting machine tools and machine tool accessories:						
	Number of establishments	400	370	330	300	300	0.0
	Employees (thousands)	70.0	66.0	64.0	65.0	66.0	1.5
	Capacity utilization (percent)	60	60	65	70	72	2.9
	U.S. shipments (million dollars)	5,259	5,115	5,256	6,172	6,839	10.8
	U.S. exports (million dollars)	1,634	1,585	1,749	2,037	2,510	23.2
	U.S. imports (million dollars)	^(b)	2,704	3,424	^(b)	4,607	11.4
	Apparent U.S. consumption (million dollars)	6,183	6,233	6,930	8,269	8,936	8.1
	Trade balance (million dollars)	-924	-1,118	-1,674	-2,097	-2,097	^(e)
	Ratio of imports to consumption (percent)	41.4	43.4	49.4	50.0	51.6	3.1
	Ratio of exports to shipments (percent)	31.1	31.0	33.3	33.0	36.7	11.2
MM085	Metal forming machine tools:						
	Number of establishments	200	175	175	150	140	-6.7
	Employees (thousands)	15.0	12.0	11.0	11.0	12.0	9.1
	Capacity utilization (percent)	48	49	61	62	62	0.0
	U.S. shipments (million dollars)	1,647	1,880	1,864	2,040	2,313	13.4
	U.S. exports (million dollars)	652	691	733	851	957	12.5
	U.S. imports (million dollars)	^(b)	933	1,019	^(b)	1,335	11.6
	Apparent U.S. consumption (million dollars)	1,841	2,122	2,150	2,385	2,691	12.8
	Trade balance (million dollars)	-194	-242	-286	-345	-378	-9.6
	Ratio of imports to consumption (percent)	46.0	44.0	47.4	50.1	49.6	-1.1
	Ratio of exports to shipments (percent)	39.6	36.7	39.3	41.7	41.4	-0.8
MM086	Non-metalworking machine tools:						
	Number of establishments	200	190	190	180	180	0.0
	Employees (thousands)	35.0	35.0	38.0	39.0	39.0	0.0
	Capacity utilization (percent)	70	68	68	70	66	-5.7
	U.S. shipments (million dollars)	1,492	1,416	1,526	1,558	1,589	2.0
	U.S. exports (million dollars)	768	711	1,083	1,110	1,159	4.4
	U.S. imports (million dollars)	^(b)	1,330	1,626	^(b)	1,776	4.8
	Apparent U.S. consumption (million dollars)	1,966	2,035	2,069	2,142	2,206	3.0
	Trade balance (million dollars)	-474	-619	-543	-584	-617	-5.7
	Ratio of imports to consumption (percent)	63.2	65.3	78.6	79.1	80.5	1.8
	Ratio of exports to shipments (percent)	51.5	50.2	71.0	71.2	72.9	2.4
MM087A	Semiconductor manufacturing machinery:						
	Number of establishments	400	400	419	405	400	-1.2
	Employees (thousands)	35.0	31.0	26.0	24.0	24.0	0.0
	Capacity utilization (percent)	44	43	58	49	60	22.4
	U.S. shipments (million dollars)	12,200	11,100	13,800	12,100	18,600	53.7
	U.S. exports (million dollars)	6,972	7,242	12,790	10,971	14,232	29.7
	U.S. imports (million dollars)	^(b)	2,750	3,586	^(b)	4,902	27.1
	Apparent U.S. consumption (million dollars)	8,532	6,608	4,596	4,987	9,270	85.9
	Trade balance (million dollars)	3,668	4,492	9,204	7,113	9,330	31.2
	Ratio of imports to consumption (percent)	38.7	41.6	78.0	77.4	52.9	-31.6
	Ratio of exports to shipments (percent)	57.2	65.2	92.7	90.7	76.5	-15.6

See footnote(s) at end of table.

TABLE MT-6 Machinery sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 2002–06—*Continued*

USITC code	Industry/commodity group	2002	2003	2004	2005	2006	Percent change, 2006 from 2005
MM088	Taps, cocks, valves, and similar devices:						
	Number of establishments	695	666	659	705	718	1.8
	Employees (thousands)	64.0	62.0	60.0	65.0	72.0	10.8
	Capacity utilization (percent)	68	64	64	62	65	4.8
	U.S. shipments (million dollars)	11,221	10,772	10,825	11,583	11,758	1.5
	U.S. exports (million dollars)	3,202	3,329	3,685	4,235	5,010	18.3
	U.S. imports (million dollars)	^(b)	5,500	6,738	^(b)	8,942	17.8
	Apparent U.S. consumption (million dollars)	13,175	12,943	13,879	14,937	15,690	5.0
	Trade balance (million dollars)	-1,954	-2,171	-3,054	-3,354	-3,932	-17.2
	Ratio of imports to consumption (percent)	39.1	42.5	48.6	50.8	57.0	12.2
	Ratio of exports to shipments (percent)	28.5	30.9	34.0	36.6	42.6	16.5
MM089	Mechanical power transmission equipment:						
	Number of establishments	241	241	240	240	240	0.0
	Employees (thousands)	13.0	12.0	11.0	11.0	10.0	-9.1
	Capacity utilization (percent)	53	53	64	64	72	12.5
	U.S. shipments (million dollars)	2,036	1,986	1,951	2,097	2,107	0.5
	U.S. exports (million dollars)	936	1,054	1,197	1,398	1,639	17.2
	U.S. imports (million dollars)	^(b)	2,222	2,638	^(b)	3,439	5.8
	Apparent U.S. consumption (million dollars)	3,093	3,154	3,392	3,951	3,907	-1.1
	Trade balance (million dollars)	-1,057	-1,168	-1,441	-1,854	-1,800	2.9
	Ratio of imports to consumption (percent)	64.5	70.5	77.8	82.3	88.0	6.9
	Ratio of exports to shipments (percent)	46.0	53.1	61.3	66.7	77.8	16.7
MM090	Boilers, turbines, and related machinery:						
	Number of establishments	330	330	329	329	329	0.0
	Employees (thousands)	20.0	19.0	17.0	17.0	17.0	0.0
	Capacity utilization (percent)	54	62	70	70	66	-5.7
	U.S. shipments (million dollars)	3,579	3,276	3,221	3,714	3,656	-1.6
	U.S. exports (million dollars)	892	875	909	1,124	1,130	0.6
	U.S. imports (million dollars)	^(b)	881	839	^(b)	1,001	-8.8
	Apparent U.S. consumption (million dollars)	4,201	3,282	3,151	3,688	3,527	-4.4
	Trade balance (million dollars)	-622	-6	70	26	129	401.5
	Ratio of imports to consumption (percent)	36.0	26.8	26.6	29.8	28.4	-4.6
	Ratio of exports to shipments (percent)	24.9	26.7	28.2	30.3	30.9	2.2
MM091	Electric motors, generators, and related equipment:						
	Number of establishments	597	597	597	598	598	0.0
	Employees (thousands)	55.0	49.0	48.0	47.0	47.0	0.0
	Capacity utilization (percent)	60	62	75	75	59	-21.3
	U.S. shipments (million dollars)	9,151	9,281	10,311	11,539	11,671	1.1
	U.S. exports (million dollars)	3,923	4,031	4,673	5,114	5,997	17.3
	U.S. imports (million dollars)	^(b)	6,811	7,020	^(b)	10,305	20.8
	Apparent U.S. consumption (million dollars)	12,406	12,061	12,657	14,959	15,980	6.8
	Trade balance (million dollars)	-3,255	-2,780	-2,346	-3,420	-4,309	-26.0
	Ratio of imports to consumption (percent)	57.9	56.5	55.5	57.0	64.5	13.0
	Ratio of exports to shipments (percent)	42.9	43.4	45.3	44.3	51.4	15.9

See footnote(s) at end of table.

TABLE MT-6 Machinery sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 2002–06—*Continued*

USITC code	Industry/commodity group	2002	2003	2004	2005	2006	Percent change, 2006 from 2005
MM092	Electrical transformers, static converters, and inductors:						
	Number of establishments	1,623	1,620	1,620	1,620	1,620	0.0
	Employees (thousands)	70.0	62.0	59.0	58.0	58.0	0.0
	Capacity utilization (percent)	48	49	61	61	63	3.3
	U.S. shipments (million dollars)	8,882	9,104	8,659	9,261	9,338	0.8
	U.S. exports (million dollars)	1,784	1,767	1,805	1,895	2,380	25.6
	U.S. imports (million dollars)	^(b)	4,680	5,496	^(b)	6,989	17.0
	Apparent U.S. consumption (million dollars)	11,805	12,016	12,351	13,339	13,946	4.6
	Trade balance (million dollars)	-2,923	-2,912	-3,692	-4,078	-4,608	-13.0
	Ratio of imports to consumption (percent)	39.9	38.9	44.5	44.8	50.1	11.9
	Ratio of exports to shipments (percent)	20.1	19.4	20.8	20.5	25.5	24.6
MM093	Portable electric handtools:						
	Number of establishments	128	128	127	127	127	0.0
	Employees (thousands)	12.0	11.0	10.0	9.0	9.0	0.0
	Capacity utilization (percent)	75	70	65	64	60	-6.3
	U.S. shipments (million dollars)	3,576	3,271	2,788	2,581	2,467	-4.4
	U.S. exports (million dollars)	212	191	180	185	165	-10.5
	U.S. imports (million dollars)	^(b)	1,777	2,122	^(b)	2,478	2.2
	Apparent U.S. consumption (million dollars)	4,798	4,857	4,730	4,820	4,780	-0.8
	Trade balance (million dollars)	-1,222	-1,586	-1,942	-2,239	-2,313	-3.3
	Ratio of imports to consumption (percent)	29.9	36.6	44.9	50.3	51.8	3.1
	Ratio of exports to shipments (percent)	5.9	5.8	6.5	7.2	6.7	-6.4
MM094	Nonelectrically powered handtools and parts thereof:						
	Number of establishments	25	25	26	24	24	0.0
	Employees (thousands)	12.0	11.0	11.0	10.0	9.0	-10.0
	Capacity utilization (percent)	75	75	61	60	60	0.0
	U.S. shipments (million dollars)	1,840	2,120	1,911	1,976	2,075	5.0
	U.S. exports (million dollars)	549	578	907	1,264	1,148	-9.2
	U.S. imports (million dollars)	^(b)	992	1,235	^(b)	1,513	8.4
	Apparent U.S. consumption (million dollars)	2,252	2,534	2,239	2,108	2,440	15.7
	Trade balance (million dollars)	-412	-414	-328	-132	-365	-176.9
	Ratio of imports to consumption (percent)	42.7	39.1	55.2	66.2	62.0	-6.4
	Ratio of exports to shipments (percent)	29.8	27.2	47.5	64.0	55.3	-13.5

TABLE MT-6 Machinery sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 2002–06—*Continued*

USITC code	Industry/commodity group	2002	2003	2004	2005	2006	Percent change, 2006 from 2005
MM096	Welding and soldering equipment:						
	Number of establishments	225	200	190	180	180	0.0
	Employees (thousands)	16.0	16.0	17.0	19.0	19.0	0.0
	Capacity utilization (percent)	50	41	76	75	76	1.3
	U.S. shipments (million dollars)	2,749	2,815	3,070	3,545	3,722	5.0
	U.S. exports (million dollars)	635	618	818	872	1,165	33.5
	U.S. imports (million dollars)	^(b)	996	1,088	^(b)	1,353	28.4
	Apparent U.S. consumption (million dollars)	2,875	3,193	3,340	3,727	3,911	4.9
	Trade balance (million dollars)	-126	-378	-270	-182	-189	-3.7
	Ratio of imports to consumption (percent)	26.5	31.2	32.6	28.3	34.6	22.4
	Ratio of exports to shipments (percent)	23.1	22.0	26.7	24.6	31.3	27.2
MM097	Nonautomotive insulated electrical wire and related products:						
	Number of establishments	323	323	324	324	324	0.0
	Employees (thousands)	26.0	25.0	23.0	23.0	23.0	0.0
	Capacity utilization (percent)	61	64	68	68	77	13.2
	U.S. shipments (million dollars)	6,889	6,978	7,405	9,278	10,113	9.0
	U.S. exports (million dollars)	2,856	2,660	2,936	3,202	4,110	28.4
	U.S. imports (million dollars)	^(b)	3,208	3,903	^(b)	6,071	29.4
	Apparent U.S. consumption (million dollars)	7,109	7,526	8,371	10,769	12,074	12.1
	Trade balance (million dollars)	-220	-548	-966	-1,491	-1,961	-31.5
	Ratio of imports to consumption (percent)	43.3	42.6	46.6	43.6	50.3	15.4
	Ratio of exports to shipments (percent)	41.5	38.1	39.7	34.5	40.6	17.8
MM099	Molds and molding machinery:						
	Number of establishments	3,079	3,079	3,079	3,000	2,950	-1.7
	Employees (thousands)	65.0	60.0	60.0	58.0	57.0	-1.7
	Capacity utilization (percent)	61	58	66	69	70	1.4
	U.S. shipments (million dollars)	8,736	8,236	8,648	8,388	8,598	2.5
	U.S. exports (million dollars)	1,605	1,550	1,833	2,074	2,136	3.0
	U.S. imports (million dollars)	^(b)	3,262	3,525	^(b)	4,290	6.3
	Apparent U.S. consumption (million dollars)	10,099	9,948	10,339	10,348	10,751	3.9
	Trade balance (million dollars)	-1,363	-1,712	-1,691	-1,960	-2,153	-9.9
	Ratio of imports to consumption (percent)	29.4	32.8	34.1	39.0	39.9	2.3
	Ratio of exports to shipments (percent)	18.4	18.8	21.2	24.7	24.8	0.5

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.

Note.—Calculations based on unrounded data.

^aNot available.

^bLess than 500,000.

^cNot meaningful.

^dCapacity utilization could not be meaningfully calculated for this industry.

^eLess than 0.05 percent.