



# 2007 Minerals Yearbook

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SILVER [ADVANCE RELEASE]

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# SILVER

By William E. Brooks

**Domestic survey data and tables were prepared by Lisa D. Miller, statistical assistant, and the world production table was prepared by Linder Roberts, international data coordinator.**

In 2007, the United States produced 1,260 metric tons (t) of silver, a 9% increase compared with revised 2006 domestic silver production of 1,160 t, and accounted for 6% of world mine production of 21,100 t. Silver was produced in 11 States in 2006, and Alaska remained the country's leading silver-producing State, followed by Nevada and Idaho. Approximately 99% of domestic silver was produced from base-metal ores at 13 mines and from precious-metal ores at 12 mines.

The price of silver averaged \$13.38 per troy ounce in 2007, a 15% increase compared with the 2006 average price of \$11.61 per troy ounce, according to Platts Metals Week. The price of silver peaked at \$15.71 per troy ounce on November 8, a 23-year high but still below the adjusted average price of \$52.80 per troy ounce in the 1980s. Investor interest and the increased industrial use of silver were the important factors in increased silver prices, especially in the fourth quarter.

Traditional use categories for silver included coin and medal fabrication; industrial applications, including electrical and electronics components; jewelry and silverware; and photography. In 2007, as in previous years, the global use of silver continued to decline in jewelry, photography, and silverware. The global use of silver also decreased in coin and medal fabrication; however, the global use of silver for industrial applications increased by 7%. These uses included electronics applications such as radio-frequency identification devices (RFIDs), which are used in barcodes, casino chips, passports, and speedpasses, as well as other electronics applications, such as flat-screen televisions.

U.S. imports for consumption of refined silver in 2007 decreased slightly compared with those in 2006. U.S. exports of silver bullion decreased to 660 t in 2007 compared with 1,500 t exported in 2006, which was mainly to the United Kingdom for the startup of the exchange-traded fund (ETF) inventory. Mexico was the leading source of imported refined silver into the United States, followed by Canada and Peru. India was the leading destination for exported silver, followed by Canada and Hong Kong.

In 2007, silver was mined in approximately 60 countries; global production was 4% higher than that in 2006 and Peru was the leading producer, followed by Mexico and China.

## Legislation and Government Programs

On December 4, 2007, the amount and value of all custodial silver reserves in the U.S. Mint were 498,000 kilograms (kg) of silver with a total market value of \$218 million at \$13.38 per fine troy ounce and a statutory value of \$20.7 million. As custodian, the U.S. Mint is responsible for safeguarding much of the Nation's gold and silver. In accordance with 31 U.S. Code section 5117 (b) and 31 U.S. Code section 5116 (b) (2),

a statutory rates of \$1.292929292 per fine troy ounce was used to value the custodial silver held by the U.S. Mint (U.S. Mint, 2008). Its six facilities are in Denver, CO; Fort Knox, KY; Philadelphia, PA; San Francisco, CA; Washington, DC; and West Point, NY.

## Production

Domestic mine production data were compiled from 36 operations. Of these operations, 32 responded to the U.S. Geological Survey (USGS) canvass, representing 100% of U.S. mine production listed in table 1. In 2007, two operations were closed and two were on standby. Domestic mine production of silver, which totaled 1,260 t in 2007, was 9% more than the revised domestic mine production of 1,160 t in 2006. Silver was mostly produced as a byproduct from copper, copper-molybdenum, gold, and lead-zinc ores, although four mines produced silver as a principal product.

At Coeur d'Alene Mines Corp.'s (Coeur d'Alene, ID) Rochester Mine, an open pit operation in northwestern Nevada, silver production decreased by 10% because mining activities stopped in August; however, leaching activities were expected to continue for several years (Silver Institute, The, 2008, p. 26).

The Lucky Friday Mine, Hecla Mining Co.'s (Coeur d'Alene, ID) flagship mine in the Silver Valley, ID, produced 96 t of silver at a cash cost of negative \$0.75 per troy ounce. A future reserve of 4,000 t of silver was identified at Greens Creek, AK, where Hecla's share of production was 80 t with an average cash cost per troy ounce of silver of negative \$5.27 per troy ounce (Hecla Mining Co., 2008).

The Galena Mine and mill, the Coeur Mine and mill, and the Caladay Project, all in Silver Valley, ID, were acquired by U.S. Silver Corp. (Toronto, Ontario, Canada) in June 2006. Processing of silver-lead ore began in September 2007 at the Coeur mill, and silver-copper ore was processed at the Galena mill. Total silver reserves and resources were reported to be 1,500 t. The company also acquired the Dayrock Mine and mill in 2007 and had leases on the Gem State, Gold Creek, Silver Star, and Success properties (U.S. Silver Corp., 2008).

Revett Minerals Inc. (Spokane Valley, WA) reported 1.1 million metric tons (Mt) of ore processed and 33 t of silver produced in 2007. At the Troy Mine and Rock Creek properties in Montana, contained silver was estimated to be 9,500 t. The Rock Creek project, which was in the evaluation and exploration stage, is on U.S. Forest Service land within the Kootenai National Forest, MT, and both Federal and State approvals were required. Production was expected to begin in 2012 with an estimated 20-year mine life (Revett Minerals Inc., 2008, p. 14).

Following remediation of the open pit at Apollo Gold Corp.'s (Denver, CO) Montana Tunnels Mine, MT, the mill restarted

production on March 1 with an average throughput of 13,500 metric tons per day (t/d) of ore. Apollo's share of the 2007 production from Montana Tunnels, a 50% joint venture with Elkhorn Tunnels LLC (Aspen, CO), was 7.8 t of silver, 0.5 t of gold, 2,500 t of lead, and 5,400 t of zinc (Apollo Gold Corp., 2008).

Shoshone Silver Mining Co. (Wallace, ID) added 73 hectares of new claims to its Lakeview District holdings. The Lakeview District is approximately 56 kilometers north of the Silver Valley. Shoshone planned to limit production from its Weber Mine in spring 2008, to continue exploration in the Lakeview District, and to reopen the Lakeview mill (Shoshone Silver Mining Co., 2007).

## Consumption

Domestic consumption of silver was approximately 5,650 t in 2007, which was slightly less than consumption of 5,780 t in 2006 (Silver Institute, The, 2008, p. 51).

**Coin and Medal Fabrication.**—Approximately 500 t of silver was used for coins and medals in the United States in 2007, a 10% decrease from the approximately 550 t used in 2006 (Silver Institute, The, 2008, p. 77). Historically, silver was more widely used than gold for coins but its use in most circulating coins has mostly been phased out. Currently, its most significant use in this application is in the fashioning of medals and commemorative pieces. Commemorative coins are also produced by the U.S. Mint at its San Francisco and West Point locations.

**Industrial Applications.**—Approximately 3,590 t of silver was used in the United States in 2007 for industrial applications, an 8% increase from the 3,310 t used in 2006 (Silver Institute, The, 2008, p. 53). As an industrial metal, silver is used in conductors, contacts, fuses, timers, and switches because it is an excellent electrical and thermal conductor. Silver is used in other industrial applications, including conductive adhesives; in the preparation of thick-film, silver-palladium pastes for use as silkscreen circuit paths in multilayer ceramic capacitors; in the manufacture of membrane switches; in flat-screen televisions with plasma display panels; in silver-backed solar mirrors; as a film in electrically heated automobile windows; in smart cards; and in solar cells. A small amount of silver is used as a miniature antenna in RFIDs. The U.S. Department of State has approved the use of passports with embedded RFIDs. These passports are readable at 6 meters, include a digital signature that helps identify if the passport's data have been altered, and the signal is blocked when the passport cover is closed. This will reduce the wait at checkpoints (Corelis, 2008).

Both silver and mercury are biocides and their use in dental amalgam further reduces the possibility of recurrent tooth decay. Other industrial applications include the use of silver to harden the bearings in jet engines and in silver oxide batteries that are used in cameras and watches.

In 2007, other industrial applications for silver included its use in batteries, bearings, brazing and soldering, catalysts, medical applications, mirrors, solar energy production, and water purification (Silver Institute, The, 2008, p. 48). Owing to silver's antibacterial properties, silver was used in clothing,

classroom notebooks, dental amalgam, disinfectants, laundry machines, shoes, and toothbrushes. Dental amalgam, though in declining use because of its mercury content, may contain 34% to 38% silver (Lawrence, 1995). Nanoparticle silver, for example, has been used on catheters, wound and surgical site dressings, and other medical equipment (Rodrigues, 2007; Bruce L. Gibbons, Ph.D., chief technical officer, AcryMed, Inc., written commun., November 20, 2007). Silver embedded in locker room surfaces is being used to reduce staph infections, and silver-based disinfectants have been introduced as a low-cost, environmentally sensitive option for use in care centers and food processing facilities.

Silver was also used in some innovative new applications, for example, as a replacement biocide for chromated copper arsenate, in construction as a termite repellent, or embedded in cellular telephone covers or gym construction materials to reduce the spread of bacteria (Jeffrey Ellis, Ph.D., chemical consultant, oral commun., November 7, 2007).

**Jewelry and Silverware.**—In 2007, the U.S. demand for silver for jewelry and silverware was 440 t, slightly lower than the 470 t used in 2006 (Silver Institute, The, 2008, p. 67). World consumption of silver for jewelry and silverware decreased by about 2%, to 6,900 t in 2007, from 7,070 t in 2006. The use of nonprecious metals, such as steel, for bracelets and other items is becoming more widespread and helps to explain the decline in the silver jewelry market.

**Photography.**—The decline in the use of silver for photographic use began in 2000 because of digital camera technology and the decline in the production of color film and paper. Silver is one of the essential materials used in the manufacture of films and photographic papers; however, Eastman Kodak Co. (Rochester, NY) reported that sales from its Film Products Group declined from \$2.84 billion in 2005 to \$1.97 billion in 2007 (Eastman Kodak Co., 2008). The overall decline in silver use is reflected in the film sector in which only 1.3 billion rolls of silver-bearing film were sold in 2007, compared with 3.4 billion rolls sold in 2002. Silver-bearing photographic paper consumption declined to 1,235 square meters (m<sup>2</sup>) in 2007 from 1,795 m<sup>2</sup> in 2002. Domestic use of silver for all photographic purposes declined to 1,120 t in 2007 from 2,290 t in 1999 (Silver Institute, The, 2008, p. 62). Other broad photographic-use categories included commercial photography, dental and industrial x rays, graphic arts, and medical x rays.

## Prices

In 2007, the average price of silver was \$13.38 per troy ounce, which was 15% above the 2006 average price of \$11.61 per ounce. The price peaked at \$15.71 per troy ounce on November 8. Prices for copper, gold, nickel, silver, and zinc all rose significantly during 2007 as part of a global boom in commodity investment. Gold ETFs have been available since 2003, and a similarly modeled silver ETF opened in March 2006. Exports of silver rose dramatically in 2006 owing to the movement of physical silver to the ETF inventory agency in London, United Kingdom. Silver inventories in the three physically backed funds, iShares Silver Trust, ETF Securities,

and Swiss Zürcher Kantonalbank, totaled approximately 5,290 t at yearend 2007 compared with 3,700 t at yearend 2006.

## Foreign Trade

The United States imported 4,210 t of refined silver and exported 660 t of refined silver in 2007 (table 1). Principal import sources included Mexico (2,560 t), Canada (1,080 t), and Peru (817 t). Principal export destinations in 2007 included India (385 t), Canada (117 t), and Hong Kong (56 t) (table 4). Total silver imports into India increased to 2,500 t in 2007 because of Government of India sales of silver and the drawdown in stocks in 2006 (Silver Institute, The, 2008, p. 45). U.S. exports of bullion to the United Kingdom declined in 2007 to 23 t after a previous high of approximately 1,180 t of bullion in 2006 that was destined for startup ETF inventories in London.

## World Review

World mine production of silver was 21,100 t in 2007, a slight increase from the revised 20,400 t produced in 2006 (table 8). Silver production increased slightly in Peru, the world's leading silver-producing country, and in Mexico, and by 4% in China. Regionally, production in Latin America increased by 9% to 6,390 t in 2007 from 5,850 t in 2006; in Asia by 8% to 3,430 t in 2007 from 3,170 t in 2006; and in Oceania by 8% to 1,900 t in 2007 from 1,760 t in 2006 (Silver Institute, The, 2008, p. 24). In 2007, silver supplied to the market from above-ground stocks of silver decreased by 9%, to 5,380 t from 5,870 t in 2006 (Silver Institute, The, 2008, p. 34).

**Bolivia.**—Production at Apex Silver Mines Ltd.'s (Denver, CO) San Cristobal property, in the Potosi District of southwestern Bolivia, began in August. During 2007, approximately 52,000 t of lead and zinc concentrates that contained 68 t of silver were shipped. As of December 31, 21.6 Mt of ore had been stockpiled. The mill processes sulfide ore; oxide ore will be processed later in the mine life (Apex Silver Mines Ltd., 2008).

**China.**—In 2007, China produced an estimated 2,700 t of silver, slightly more than 2006 production of 2,600 t (table 8). Silvercorp Metals, Inc. (Vancouver, British Columbia, Canada), the leading silver producer in China, announced that resources at the Ying and HPG Mines were 3,820 t, an increase of 26% from 3,020 t in 2006. Silvercorp also applied for a mining permit for its GC/SMT project in southern China, a 1,500-t/d silver-lead-zinc mine with a 20-year mine life, which is expected to produce 62 t/yr of silver within 2 years (Silvercorp Metals, Inc., 2008).

**Mexico.**—In 2007, Mexico was the second-ranked producer of silver, and production increased to 3,000 t, an alltime high. Industrias Peñoles S.A. de C.V. produced 1,380 t in 2007, a slight decrease from 2006 production of 1,400 t (Silver Institute, The, 2008, p. 23).

**Peru.**—As in 2006, Peru was the world's leading silver producer. Production increased slightly to 3,494 t in 2007 from 3,471 t (revised) in 2006. Production by Cia. Minas Buenaventura, Peru's leading producer, decreased slightly to 500 t in 2007 from 530 t in 2006. Production at Buenaventura's Uchucchacua Mine, Peru's leading silver-producing mine,

increased to 307 t in 2007 from 301 t in 2006. In 2007, four mines in Peru were among the world's top 15 silver-producing mines (Silver Institute, The, 2008, p. 99). In decreasing order of production, these include Cia. Minas Buenaventura's Uchucchacua Mine, Hochchild Mining plc's Arcata Mine, Pan American Silver Corp.'s Huaron Mine, and Hochschild Mining's Selene Mine. At Pan American Silver's Huaron Mine, production increased to 120 t in 2007 from 114 t in 2006. Silver has been mined in Peru since ancient times, and silver jewelry, silverware, silver artwork, and silver sculptures continued to be sold widely in the artisanal markets in Lima and in Huancayo, which remained the center of small-scale artisanal silver production. Tours to silver production shops, such as Della Pina, in Lima, are available. Lima hosted Plateria Peruana Contemporanea (Contemporary Peruvian Works in Silver), and Ayacucho, Peru, was host to the 12th Concursos Nacionales Plata del Peru, which is an annual silvercraft fair organized by Patronato Plata del Peru, several banks, and mining companies in order to promote Peruvian silver.

## Outlook

In 2007, world silver consumption was 27,800 t, slightly less than the 28,400 t used in 2006 (Silver Institute, The, 2008, p. 79). Silver use in photography continued to fall in Europe, Latin America, and the United States; however, in other regions, it was relatively stable. Silver use in photography was expected to level off as silver continues to be used in high-quality paper prints from digital sources. The use of silver in televisions using flat screens has increased, and silver use in this application was expected to double in the next few years. The use of silver RFIDs, an alternative to bar codes and used by a variety of industries as a way to track stock and shipments, is expected to increase. Antibacterial uses of silver in wound and burn care is increasing. A powder that contains silver is available that clots blood on contact and also prevents growth of bacteria (Silver Institute, The, 2008, p. 61). ETF inventories continue to grow and indicate continued investor interest. Silver may also replace platinum in specialized catalytic converter applications for off-road vehicles. The use of silver in electronics, medicine, superconductivity, water purification, and wood preservatives was expected to continue to increase.

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## GENERAL SOURCES OF INFORMATION

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TABLE 1  
SALIENT SILVER STATISTICS<sup>1</sup>

		2003	2004	2005	2006	2007
United States:						
Mine production:						
Quantity	metric tons	1,240	1,250	1,230	1,160 <sup>r</sup>	1,260
Value	thousands	\$196,000	\$268,000	\$289,000	\$426,000	\$506,000
Refinery production:						
Domestic and foreign ores and concentrates	metric tons	2,580	1,140	2,530	3,150 <sup>r</sup>	4,110
Scrap (old and new)	do.	1,010	1,920	981	1,500 <sup>r</sup>	1,540
Exports, refined	do.	181	422	166	1,500	660
Imports for consumption, refined	do.	4,510	4,100	3,880	4,280	4,210
Stocks, December 31:						
Industry	metric tons	93	131	86	98	70
Futures exchanges	do.	3,430	3,580	3,380	3,150	NA
U.S. Department of the Treasury	do.	220	220	220	220	220
Price, average <sup>2</sup>	dollars per troy ounce	4.91	6.69	7.34	11.61	13.38
Employment, mine and mill workers <sup>3</sup>		1,200	900 <sup>r</sup>	900 <sup>r</sup>	900 <sup>r</sup>	900
World, mine production	metric tons	18,800	19,900	20,800 <sup>r</sup>	20,400 <sup>r</sup>	21,100 <sup>e</sup>

<sup>e</sup>Estimated. <sup>r</sup>Revised. do. Ditto. NA Not available.

<sup>1</sup>Data are rounded to no more than three significant digits, except prices.

<sup>2</sup>Price data are the annual Handy & Harman quotations published in Platts Metals Week.

<sup>3</sup>Employment data are from the U.S. Department of Labor, Mine Safety and Health Administration.



TABLE 2  
MINE PRODUCTION OF SILVER IN THE UNITED STATES, BY STATE<sup>1</sup>

(Kilograms)

State	2005	2006	2007
Nevada	276,000	260,000 <sup>r</sup>	194,000
Other <sup>2</sup>	949,000	895,000	1,070,000
Total	1,230,000	1,160,000 <sup>r</sup>	1,260,000

<sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes Alaska, Arizona, California, Colorado, Idaho, Missouri, Montana, New Mexico, South Dakota, and Utah.

TABLE 3  
LEADING SILVER-PRODUCING MINES IN THE UNITED STATES IN 2007, IN ORDER OF OUTPUT<sup>1</sup>

Rank	Mine	County and State	Operator	Source of silver
1	Red Dog	Northwest Arctic, AK	Teck Cominco Alaska Inc.	Zinc-lead ore.
2	Greens Creek	Juneau, AK	Kennecott Greens Creek Mining Co.	Zinc-silver ore.
3	Rochester	Pershing, NV	Coeur d'Alene Mines Corp.	Silver ore.
4	Lucky Friday	Shoshone, ID	Hecla Mining Co.	Do.
5	Bingham Canyon	Salt Lake, UT	Kennecott Utah Copper Corp.	Copper-molybdenum ore.
6	Galena	Shoshone, ID	U.S. Silver Corp.	Silver ore.
7	Midas	Elko, NV	Newmont Mining Corp.	Gold ore.
8	Troy	Lincoln, MT	Revett Minerals Inc.	Silver ore.
9	Mission Complex <sup>2</sup>	Pima, AZ	Asarco LLC <sup>3</sup>	Copper ore.
10	Montana Tunnels	Jefferson, MT	Apollo Gold Corp.	Gold ore.
11	Continental Pit	Silver Bow, MT	Montana Resources	Copper-molybdenum ore.
12	Bagdad	Yavapai, AZ	Freeport-McMoRan Copper & Gold Inc.	Copper ore.
13	Phoenix	Lander, NV	Newmont Mining Corp.	Gold ore.
14	Carlin Mines Operations <sup>4</sup>	Elko, Eureka, Humboldt, Lander, NV	do.	Do.
15	Chino	Grant, NM	Freeport-McMoRan Copper & Gold Inc.	Copper-molybdenum ore.
16	Denton-Rawhide	Mineral, NV	Kennecott Minerals Co.	Gold ore.
17	Smoky Valley Common Operation	Nye, NV	Kinross Gold Corp.	Do.
18	Ray	Pinal, AZ	Asarco LLC <sup>3</sup>	Copper ore.
19	Betze-Post	Eureka, NV	Barrick Gold Corp.	Gold ore.
20	Buick	Iron, MO	Doe Run Resources Corp.	Lead ore.
21	Florida Canyon	Pershing, NV	Jipangu Inc.	Gold ore.
22	Cresson	Teller, CO	Cripple Creek & Victor Gold Mining Co.	Do.
23	Fletcher	Reynolds, MO	Doe Run Resources Corp.	Lead ore.
24	Brushy Creek	do.	do.	Do.
25	Viburnum (#29 and #35)	Washington and Iron, MO	do.	Do.

do., Do. Ditto.

<sup>1</sup>The mines on this list accounted for 99% of U.S. mine production in 2007.

<sup>2</sup>Includes Eisenhower, Mission, Pima, and San Xavier Mines.

<sup>3</sup>Formerly ASARCO Incorporated.

<sup>4</sup>Includes Carlin East, Deep Post, Gold Quarry, Lone Tree, Mule Canyon, Pete, Rain/Emigrant, and Twin Creeks Mines.

TABLE 4  
U.S. EXPORTS OF SILVER, BY COUNTRY<sup>1</sup>

Year and country	Silver ores and concentrates			Bullion			Dore			Total	
	Silver content (kilograms)	Value (thousands)	Value (\$4,040)	Silver content (kilograms)	Value (thousands)	Value (\$586,000)	Silver content (kilograms)	Value (thousands)	Value (\$33,600)	Silver content (kilograms)	Value (thousands)
2006	3,150			1,500,000			85,400			1,580,000	\$624,000 <sup>r</sup>
2007:											
Australia	384	71	85	472	85		--	--	--	856	156
Belgium	8	3	--	--	--		--	--	--	8	3
Brazil	265	142	12	61	12		--	--	--	326	154
Canada	11	3	48,700	117,000	48,700		215	66	117,000	117,000	48,800
Colombia	12	10	--	--	--		--	--	--	12	10
Dominican Republic	136	65	195	950	195		--	--	1,090	1,090	260
Finland	--	--	10	57	10		--	--	--	57	10
France	95	15	--	--	--		--	--	--	95	15
Germany	12,500	5,520	17,200	35,200	17,200		15	8	47,800	47,800	22,800
Guatemala	--	--	8	9	8		--	--	--	9	8
Honduras	--	--	40	191	40		--	--	--	191	40
Hong Kong	278	50	24,900	55,900	24,900		--	--	--	56,100	25,000
India	16	9	155,000	385,000	155,000		--	--	--	385,000	155,000
Ireland	175	44	--	--	--		--	--	--	175	44
Italy	111	48	143	793	143		4,300	2,010	5,210	5,210	2,200
Japan	--	--	11,000	24,900	11,000		--	--	--	24,900	11,000
Korea, Republic of	764	716	--	--	--		--	--	--	764	716
Mexico	--	--	126	584	126		19	3	603	603	129
Morocco	--	--	53	172	53		--	--	--	172	53
Netherlands	639	170	14	31	14		--	--	--	670	184
Norway	--	--	--	--	--		2,710	762	2,710	2,710	762
Singapore	--	--	--	--	--		3,210	1,180	3,210	3,210	1,180
Spain	--	--	14	31	14		186	77	217	217	91
Switzerland	109	84	30	62	30		30,600	13,300	30,800	30,800	13,400
Thailand	--	--	11	63	11		--	--	--	63	11
United Kingdom	204	62	10,600	22,600	10,600		10,200	4,380	33,000	33,000	15,000
Uruguay	--	--	5,360	15,500	5,360		--	--	--	15,500	5,360
Total	15,800	7,020	274,000	660,000	274,000		51,500	21,700	727,000	727,000	303,000

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 5  
U.S. EXPORTS OF SILVER, BY COUNTRY<sup>1</sup>

Year and country	Other unwrought silver			Metal powder			Silver nitrate			Semimanufactured forms <sup>2</sup>			Waste and scrap		
	Gross weight (kilograms)	Value (thousands)		Gross weight (kilograms)	Value (thousands)		Gross weight (kilograms)	Value (thousands)		Gross weight (kilograms)	Value (thousands)		Gross weight (kilograms)	Value (thousands)	
2006	85,600	\$30,800	1,460,000	\$255,000	62,300	\$6,450	526,000	\$91,200	4,890,000	\$1,140,000					
2007:															
Argentina	122	27	5	3	--	--	240	41	--	--	--	--	--	--	--
Australia	--	--	256	44	271	25	145	33	36,600	12,000					
Austria	--	--	663	145	--	--	20	3	--	--					
Bahamas, The	8	14	--	--	--	--	--	--	--	--					
Bahrain	--	--	--	--	--	--	116	20	--	--					
Belgium	513	116	10,300	1,950	--	--	3,200	1,060	17,300	8,330					
Bolivia	--	--	21	10	--	--	27	5	--	--					
Brazil	1	3	164	28	105	30	2,990	501	--	--					
British Virgin Islands	35	8	--	--	--	--	--	--	--	--					
Canada	23,000	7,940	36,200	6,440	31,600	1,680	241,000	75,700	29,500	26,600					
Cayman Islands	21	5	--	--	--	--	--	--	--	--					
Chile	--	--	--	--	12	3	206	35	--	--					
China	1,120	411	124,000	26,300	10,700	2,380	3,140	637	2,050	6,380					
Costa Rica	269	58	--	--	332	33	92	16	--	--					
Czech Republic	--	--	55	11	--	--	11,700	1,990	54	22					
Denmark	27	6	30	5	--	--	53	9	--	--					
Dominican Republic	363	151	618	125	11	3	1,610	278	--	--					
Ecuador	--	--	--	--	95	29	942	160	--	--					
Egypt	--	--	--	--	--	--	--	--	--	--					
Estonia	20	3	--	--	--	--	--	--	--	--					
Finland	--	--	336	77	--	--	1,440	244	--	--					
France	1,210	277	90,700	17,900	--	--	14,700	2,650	--	--					
French Polynesia	11	6	--	--	--	--	--	--	--	--					
Germany	2,080	822	191,000	35,800	452	96	46,000	8,530	35,400	12,000					
Guyana	7	3	--	--	--	--	--	--	--	--					
Grenada	--	--	--	--	--	--	39	17	--	--					
Guatemala	--	--	--	--	--	--	26	4	--	--					
Hong Kong	5,920	2,400	46,400	7,960	575	37	29,800	5,100	32	84					
Hungary	--	--	--	--	--	--	26	4	--	--					
India	11,900	2,130	624	132	15	3	811	145	65	326					
Indonesia	--	--	--	--	28	5	--	--	--	--					
Ireland	--	--	--	--	--	--	75	13	--	--					
Israel	398	65	--	--	94	7	1,380	256	--	--					
Italy	86	19	1,180	214	41	4	5,350	909	73,300	25,000					
Jamaica	166	37	504	86	--	--	4,680	818	392	13,700					
Japan	115	59	283,000	60,500	--	--	818	139	--	--					
Jordan	494	218	--	--	--	--	739	134	770	2,730					
Korea, Republic of	131	52	204,000	40,400	525	175	--	--	--	--					
Kuwait	--	--	--	--	51	4	--	--	--	--					
Latvia	--	--	--	--	--	--	44	7	--	--					

See footnotes at end of table.



TABLE 5—Continued  
U.S. EXPORTS OF SILVER, BY COUNTRY<sup>1</sup>

Year and country	Other unwrought silver		Metal powder		Silver nitrate		Semimanufactured forms <sup>2</sup>		Waste and scrap	
	Gross weight (kilograms)	Value (thousands)	Gross weight (kilograms)	Value (thousands)	Gross weight (kilograms)	Value (thousands)	Gross weight (kilograms)	Value (thousands)	Gross weight (kilograms)	Value (thousands)
2007—Continued:										
Lebanon	--	--	1,110	\$222	--	--	--	--	--	--
Lithuania	--	--	--	--	--	--	200	\$34	--	--
Malaysia	--	--	--	--	--	--	4,680	793	28	\$140
Mexico	1,710	\$474	29,900	6,060	1,320	\$275	207,000	36,000	--	--
Netherlands	--	--	27,600	5,680	--	--	--	--	--	--
Netherlands Antilles	142	31	--	--	--	--	--	--	--	--
New Zealand	19	6	61	15	122	14	--	--	--	--
Nicaragua	--	--	--	--	17	3	--	--	--	--
Nigeria	--	--	--	--	--	--	46	8	--	--
Norway	910	460	--	--	--	--	--	--	--	--
Pakistan	25	5	--	--	--	--	--	--	--	--
Panama	166	93	--	--	--	--	--	--	--	--
Peru	--	--	--	--	--	--	47	8	--	--
Philippines	68	15	--	--	4	3	733	131	--	--
Poland	--	--	59	10	--	--	64	10	--	--
Portugal	--	--	18	13	--	--	--	--	--	--
Russia	269	36	--	--	--	--	--	--	--	--
Saudi Arabia	--	--	--	--	--	--	135	25	103	2,630
Singapore	47	21	27,900	5,090	80	4	19,300	3,550	--	--
South Africa	--	--	--	--	23	5	67	11	--	--
Spain	278	122	83	24	--	--	1,580	271	--	--
Sri Lanka	23	7	--	--	442	54	--	--	--	--
Sweden	--	--	--	--	44	4	40	7	30,100	2,690
Switzerland	114	25	1,360	247	--	--	2,570	476	2,830	69,800
Taiwan	171	38	287,000	60,600	74	16	15,600	2,800	154	81
Thailand	6,740	1,390	21,400	3,720	--	--	6,990	1,210	--	--
Tokelau Islands	--	--	--	--	--	--	73	12	--	--
Trinidad and Tobago	--	--	--	--	4	4	203	65	--	--
Turkey	47	10	--	--	--	--	27	5	--	--
United Arab Emirates	100	36	--	--	--	--	556	95	--	--
United Kingdom	69	20	111,000	22,500	50	13	27,200	4,770	8,900	50,200
Uruguay	10,900	4,750	--	--	--	--	70	12	--	--
Venezuela	--	--	--	--	60	24	36	6	--	--
Vietnam	152	83	--	--	--	--	563	96	28	139
Total	70,000	22,500	1,500,000	302,000	47,100	4,930	659,000	150,000	238,000	233,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Containing 99.5% or more by weight of silver.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF SILVER, BY COUNTRY<sup>1</sup>

Year and country	Silver ores and concentrates			Ash and residues			Bullion			Dore			Total		
	Silver content (kilograms)	Value (thousands)		Silver content (kilograms)	Value (thousands)		Silver content (kilograms)	Value (thousands)		Silver content (kilograms)	Value (thousands)		Silver content (kilograms)	Value (thousands)	
2006	--	--	\$1,110	4,800	\$1,520,000		4,280,000	\$134,000		286,000	\$134,000		4,570,000	\$1,660,000	
2007:															
Australia	--	--	--	--	48,600	20,500	48,600	--	--	--	--	48,600	20,500		
Canada	--	--	--	--	1,080,000	433,000	1,080,000	379	372	379	372	1,080,000	434,000		
Chile	--	--	--	--	37,500	16,100	37,500	158,000	85,500	158,000	85,500	196,000	102,000		
Colombia	--	--	--	--	112	46	112	6,860	2,870	6,860	2,870	6,980	2,910		
Costa Rica	--	--	--	--	--	--	--	82	33	82	33	82	33		
Germany	--	--	--	--	2,630	1,180	2,630	--	--	--	--	2,630	1,180		
Guatemala	150	\$31	--	--	17,400	6,460	17,400	11,200	5,100	11,200	5,100	28,800	11,600		
Honduras	--	--	--	--	3,100	504	3,100	455	214	455	214	3,550	718		
Israel	231	99	--	--	--	--	--	--	--	--	--	231	99		
Italy	--	--	--	--	(2)	5	(2)	128	70	128	70	128	75		
Mexico	--	--	--	--	2,430,000	1,030,000	2,430,000	128,000	94,300	128,000	94,300	2,560,000	1,130,000		
Panama	--	--	--	--	99	43	99	224	72	224	72	323	115		
Peru	--	--	--	--	571,000	202,000	571,000	246,000	136,000	246,000	136,000	817,000	338,000		
Philippines	--	--	--	--	--	--	--	117	29	117	29	117	29		
Poland	--	--	--	--	20,000	7,590	20,000	--	--	--	--	20,000	7,590		
Thailand	--	--	1,630	7,260	--	--	--	--	--	--	--	7,260	1,630		
Ukraine	--	--	--	--	1,950	812	1,950	--	--	--	--	1,950	812		
United Kingdom	--	--	--	--	5	20	5	--	--	--	--	5	20		
Total	381	130	1,630	7,260	4,210,000	1,720,000	4,210,000	551,000	324,000	551,000	324,000	4,770,000	2,050,000		

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 7  
U.S. IMPORTS FOR CONSUMPTION OF SILVER, BY COUNTRY<sup>1</sup>

Year and country	Other unwrought silver		Metal powder		Silver nitrate		Semimanufactured forms <sup>2</sup>		Waste and scrap	
	Gross weight (kilograms)	Value (thousands)	Gross weight (kilograms)	Value (thousands)	Gross weight (kilograms)	Value (thousands)	Gross weight (kilograms)	Value (thousands)	Gross weight (kilograms)	Value (thousands)
2006	259,000	\$91,300	30,700	\$5,690	1,260	\$255	194,000	\$71,500	2,510,000	\$275,000
2007:										
Argentina	--	--	--	--	--	--	--	--	21	390
Australia	--	--	391	41	--	--	(3)	7	3,060	3,960
Austria	--	--	--	--	--	--	--	--	7	126
Bahamas	--	--	--	--	--	--	--	--	2	3
Belgium	--	--	--	--	--	--	--	--	6	75
Belize	--	--	--	--	--	--	--	--	2	30
Bolivia	--	--	--	--	--	--	--	--	25	462
British Virgin Islands	--	--	--	--	--	--	--	--	(3)	8
Brazil	--	--	--	--	--	--	9,850	4,090	28,400	5,090
Canada	58,700	24,800	4,410	281	7	3	7,100	2,970	557,000	78,100
Cayman Islands	--	--	--	--	--	--	--	--	6	115
Chile	--	--	--	--	--	--	--	--	1,480	122
China	230	32	381	72	--	--	18,000	7,930	219,000	5,600
Colombia	--	--	--	--	--	--	--	--	29,800	2,440
Costa Rica	--	--	--	--	--	--	--	--	84,200	2,670
Czech Republic	--	--	--	--	--	--	--	--	166	64
Denmark	--	--	--	--	--	--	--	--	3	16
Dominican Republic	5	9	182	41	--	--	--	--	834	2,780
Ecuador	--	--	--	--	--	--	305	134	1	4
France	--	--	2,030	384	--	--	30	35	51,100	1,170
Germany	100	44	14,000	2,490	--	--	11,800	5,840	16,600	59,800
Guatemala	--	--	--	--	--	--	--	--	286	5,640
Greece	(3)	4	--	--	--	--	--	--	--	--
Honduras	--	--	--	--	--	--	--	--	27	25
Hong Kong	696	125	--	--	--	--	--	--	37	366
India	695	356	--	--	--	--	--	--	40,700	270
Ireland	--	--	--	--	--	--	--	--	302	416
Israel	226	27	1,730	297	--	--	--	--	33,100	402
Italy	935	505	--	--	--	--	2,670	262	2,630	48,400
Jamaica	--	--	--	--	--	--	--	--	966	10
Japan	--	--	12,400	1,690	--	--	--	--	73,300	74,800
Jordan	--	--	--	--	--	--	--	--	(3)	8
Korea, Republic of	--	--	23	10	--	--	407	98	37,200	2,710
Kuwait	--	--	--	--	--	--	--	--	2	36
Malaysia	--	--	40	7	--	--	--	--	598,000	8,350
Maldives	--	--	--	--	--	--	--	--	39,000	371
Mali	--	--	--	--	--	--	--	--	80,100	52,400
Mexico	156,000	55,000	927	163	--	--	--	1,520	1,160,000	52,400
Netherlands	--	--	3,270	222	10	3	--	--	726	35
Netherlands Antilles	--	--	--	--	--	--	--	--	6	89
New Zealand	--	--	--	--	--	--	--	--	114	2,120

See footnotes at end of table.

TABLE 7—Continued  
U.S. IMPORTS FOR CONSUMPTION OF SILVER, BY COUNTRY<sup>1</sup>

Year and country	Other unwrought silver		Metal powder		Silver nitrate		Semimanufactured forms <sup>2</sup>		Waste and scrap	
	Gross weight (kilograms)	Value (thousands)	Gross weight (kilograms)	Value (thousands)	Gross weight (kilograms)	Value (thousands)	Gross weight (kilograms)	Value (thousands)	Gross weight (kilograms)	Value (thousands)
2007—Continued:										
Norway	--	--	112	\$19	--	--	--	--	8	\$141
Panama	--	--	15	9	--	--	--	--	359	100
Peru	2,240	\$1,250	--	--	100	\$29	228,000	\$97,500	4	71
Philippines	--	--	--	--	--	--	--	--	203,000	5,000
Poland	1,910	371	--	--	--	--	--	--	--	--
Singapore	--	--	25	4	--	--	--	--	14,000	5,940
South Africa	--	--	--	--	--	--	--	--	82	1,530
Spain	--	--	--	--	--	--	55	17	--	--
Switzerland	303	98	--	--	--	--	--	--	2	49
Taiwan	--	--	3,240	198	--	--	39,600	17,300	67,800	42,500
Thailand	--	--	2,330	396	--	--	9	5	22,900	2,570
Trinidad and Tobago	--	--	--	--	--	--	--	--	9,700	22,000
United Arab Emirates	--	--	--	--	--	--	--	--	8,480	1,030
United Kingdom	398	145	1,560	274	379	93	4	26	109,000	41,600
Total	222,000	82,800	47,100	6,600	496	128	397,000	138,000	3,410,000	482,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Containing 99.5% or more by weight of silver.

<sup>3</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 8  
SILVER: WORLD MINE PRODUCTION, BY COUNTRY<sup>1,2</sup>

(Metric tons)

Country	2003	2004	2005	2006	2007 <sup>c</sup>
Algeria <sup>e</sup>	1	(3)	(3) <sup>r</sup>	(3) <sup>r,4</sup>	(3) <sup>4</sup>
Argentina	134	172	264 <sup>r</sup>	248 <sup>r</sup>	250
Armenia <sup>e</sup>	4 <sup>4</sup>	4	4	4	4
Australia	1,868	2,224	2,417	1,727	1,879 <sup>4</sup>
Bolivia	465	407	419	472 <sup>r</sup>	540
Brazil <sup>5</sup>	31	35	38	30 <sup>r,e</sup>	30 <sup>p</sup>
Bulgaria <sup>e</sup>	50	60 <sup>r</sup>	60 <sup>r</sup>	60 <sup>r</sup>	60
Burma	1	1	2	1 <sup>r</sup>	1
Canada	1,310	1,337	1,124	995 <sup>r</sup>	862 <sup>p,4</sup>
Chile	1,313	1,360	1,400	1,607	1,936 <sup>4</sup>
China <sup>e</sup>	2,400	2,450	2,500	2,600	2,700
Colombia	10	9	7	8 <sup>r</sup>	10 <sup>p,4</sup>
Congo (Kinshasa)	36	33	54	68	76 <sup>4</sup>
Costa Rica <sup>e</sup>	(3)	(3)	--	--	--
Ecuador	(3) <sup>e</sup>	(3)	(3)	(3)	(3) <sup>p,4</sup>
Ethiopia	1	1	1	1	(3)
Finland	31	37	49	50	50
France <sup>e</sup>	(3) <sup>r</sup>	1	1	1	1
Ghana	3	3	4 <sup>r</sup>	3	3
Greece	79	79	79 <sup>e</sup>	25	26
Guatemala	--	--	7	50	70
Honduras	51	48	54	55	55
India	51	15	32	31 <sup>r</sup>	79
Indonesia	285	262	321	377	420
Iran <sup>e</sup>	23	25	25	25	26
Ireland	9	7	6	4	4
Italy <sup>e,6</sup>	(3) <sup>r</sup>	(3) <sup>r</sup>	(3) <sup>r</sup>	(3) <sup>r</sup>	(3)
Jamaica	(3)	(3) <sup>e</sup>	--	--	--
Japan	79	79	54	11	5
Kazakhstan	827	733	832	830	800
Korea, North <sup>e</sup>	20	20	20	20	20
Korea, Republic of	12	5	4	5	2
Macedonia <sup>e</sup>	10	10	-- <sup>r</sup>	-- <sup>r</sup>	--
Malaysia	--	(3)	(3)	(3)	(3)
Mexico	2,569	2,569	2,894	2,970 <sup>r</sup>	3,000
Mongolia <sup>e</sup>	27	28	28	28	28
Morocco	201	196	196 <sup>e</sup>	195	195
Namibia	45 <sup>e</sup>	27	30	30 <sup>e</sup>	30
New Zealand <sup>e</sup>	30	30	43	27 <sup>r</sup>	30
Nicaragua	2	3 <sup>r</sup>	3 <sup>r</sup>	3 <sup>r</sup>	3
Oman <sup>e</sup>	--	(3) <sup>r</sup>	(3) <sup>r</sup>	(3) <sup>r</sup>	(3)
Papua New Guinea	62 <sup>e</sup>	56	51	51 <sup>r</sup>	51
Peru	2,921	3,060	3,193	3,471 <sup>r</sup>	3,494 <sup>4</sup>
Philippines	10	9	19	23 <sup>r</sup>	23
Poland	1,237	1,344	1,306 <sup>r</sup>	1,306 <sup>r</sup>	1,300
Portugal	22	24	24	20 <sup>r</sup>	20 <sup>p</sup>
Romania <sup>e</sup>	18	18 <sup>r</sup>	15 <sup>r</sup>	18 <sup>r</sup>	18
Russia <sup>e</sup>	700	1,277 <sup>4</sup>	1,350 <sup>4</sup>	1,250 <sup>r</sup>	1,200
Saudi Arabia <sup>e</sup>	13	14 <sup>4</sup>	14 <sup>4</sup>	9 <sup>r</sup>	9
Serbia <sup>e</sup>	2 <sup>4,7</sup>	2 <sup>r,7</sup>	2 <sup>r,7</sup>	2 <sup>r,7</sup>	2

See footnotes at end of table.

TABLE 8—Continued  
SILVER: WORLD MINE PRODUCTION, BY COUNTRY<sup>1,2</sup>

(Metric tons)

Country	2003	2004	2005	2006	2007 <sup>c</sup>
South Africa	80	71	88	87	81
Spain	2	4	4 <sup>r</sup>	4 <sup>r,p</sup>	4
Sudan <sup>c</sup>	3 <sup>4</sup>	3	3	3	3
Sweden	307	293	310	268	270
Tajikistan <sup>c</sup>	5 <sup>4</sup>	5	5	5	5
Tanzania	8	13	12 <sup>r</sup>	15 <sup>r</sup>	15
Tunisia <sup>c</sup>	3	2 <sup>4</sup>	1 <sup>r,3</sup>	--	--
Turkey <sup>c</sup>	95	73	80	80 <sup>r</sup>	85
United States	1,240	1,250	1,230	1,160 <sup>r</sup>	1,260 <sup>4</sup>
Uzbekistan <sup>c</sup>	80	80	83	83	83
Zimbabwe	1	3	3	1	1
Total	18,800	19,900	20,800 <sup>r</sup>	20,400 <sup>r</sup>	21,100

<sup>c</sup>Estimated. <sup>p</sup>Preliminary. <sup>r</sup>Revised. -- Zero.

<sup>1</sup>World totals, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Recoverable content of ores and concentrates produced unless otherwise specified. Table includes data available through August 13, 2008.

<sup>3</sup>Less than ½ unit.

<sup>4</sup>Reported figure.

<sup>5</sup>Includes the following quantities, in kilograms, identified as secondary silver: 2003–07—50,000.

<sup>6</sup>Includes production from imported ores.

<sup>7</sup>Montenegro and Serbia formally declared independence in June 2006 from each other and dissolved their union.