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SILVER

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SILVER

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In 2006, the United States produced 1,140 metric tons (t) of silver, an 8% decrease compared with 2005 domestic silver production of 1,230 t, and accounted for 6% of world mine production of 20,200 t. Silver was produced in 12 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 15 mines and from precious-metal ores at 10 mines.

The price of silver averaged $11.61 per troy ounce in 2006, a 58% increase compared with the 2005 average price of $7.34 per troy ounce, according to Platts Metals Week. The price of silver peaked at a high of $14.89 per troy ounce on May 11. The rise in the price of silver was partly because of anticipation leading up to the opening of the silver exchange traded fund (ETF) on the American Stock Exchange in April. The silver ETF, which represented a new stock category for silver, was modeled after the gold ETF.

Traditional use categories for silver included coins and medal fabrication; industrial applications, including electrical and electronics components; jewelry and silverware; and photography. In 2006, as in previous years, the global use of silver continued to decline in jewelry, photography, and silverware. Use of silver increased in coin and medal fabrication and for industrial applications, specifically in such electronics applications as radio frequency identification devices (RFIDs), which are used in passports and for a variety of barcodes and speedpasses.

U.S. imports for consumption of refined silver in 2006 increased by about 10% compared with those in 2005. U.S. exports of silver bullion increased to 1,500 t in 2006 compared with the 166 t of bullion exported in 2005. This increase was because 1,170 t of silver bullion was exported to the United Kingdom in 2006 for the ETF inventory; in 2005, prior to the opening of the ETF, less than 1 t of bullion was exported to the United Kingdom. Mexico was the leading source of imported refined silver into the United States, followed by Canada and Peru. The United Kingdom was the leading destination for exported silver, followed by Canada and Australia.

In 2006, silver was mined in approximately 60 countries; production was slightly lower than that in 2005. Peru was the leading producer, followed by Mexico and China.

Legislation and Government Programs

The U.S. Mint is the custodian of most of the Nation's silver and is responsible for safeguarding the Nation's precious metal resources, such as gold, platinum, and silver. In 2006, 16.2 billion coins were produced for circulation by the U.S. Mint. Increases in the prices of nickel, zinc, and copper during the fourth quarter of 2006 raised the production costs for the 1-cent and 5-cent coins above face value.

On September 30, 2006, the amount and value of custodial silver in the U.S. Mint were 220,062 kilograms (kg) of silver with a market value of $80 million at $11.55 per fine troy ounce and a statutory value of $9.148 million. A statutory rate of $1.29292 per fine troy ounce was used to value the custodial silver held by the U.S. Mint (U.S. Mint, 2007). 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 37 operations. Of these operations, 35 responded to the U.S. Geological Survey (USGS) canvass, representing 100% of U.S. mine production listed in table 1. Domestic mine production of silver, which totaled 1,140 t in 2006, was less than domestic mine production of 1,230 t in 2005. Silver was mostly produced as a byproduct from copper, copper-molybdenum, gold, and lead-zinc ores, though four mines produced silver as a principal product.

Despite high silver prices, production in the United States fell and was the lowest since 1986. This was in large part because of declines in production at the Greens Creek Mine in Alaska and at the Rochester Mine in Nevada. At Greens Creek Mine [a joint venture of Rio Tinto plc (London, United Kingdom) and Hecla Mining Company (Coeur d'Alene, ID)], the mining of lower grade ore resulted in the 25-t decline in output. In 2006, Hecla Mining produced 170 t of silver and announced proven and probable reserves of 1,020 t at the Greens Creek Mine and 560 t at its Lucky Friday Mine in Idaho (Hecla Mining Company, 2007). Silver production at Coeur d'Alene Mines Corp.'s Rochester Mine, an open pit operation in northwestern Nevada, declined by 19 t in 2006 because mining activity was scheduled to end late in 2007 (Silver Institute, The, 2007, p. 25). Coeur d'Alene's Silver Valley operations, which included the Caladay and Coeur properties and the Galena Mine, were sold to U.S. Silver Corporation in June 2006. Production at the Galena Mine was unchanged under the new ownership because the new owners were focused on subsurface silver exploration and reducing staff (Steve Knolls, Mine Superintendent, U.S. Silver Corporation, oral commun., September 21, 2006).

New Jersey Mining Company updated its mine plan for the Silver Strand Mine, Idaho, which is approximately 16 kilometers northeast of Coeur d'Alene in the Panhandle National Forest. At gold and silver prices of $560 per troy ounce and $10 per troy ounce, respectively, the company expected a net smelter return of $150 per metric ton of ore from the silver-gold ore processed at its company mill near Kellogg, ID (New Jersey Mining Company, 2006).

Revett Minerals Inc. reported higher earnings in the second quarter of 2006 compared with earnings during the first quarter of 2006. This increase occurred despite lower mill throughput at the Troy Mine, MT, owing to spring rains and rapid snowmelt (Revett Minerals Inc., 2006). In 2006, 945,000 t of ore was processed and 28 t of silver was produced. Mill throughput in the fourth quarter was 2,246 metric tons per day (t/d), which was less than the annual daily production rate of 2,588 t/d. The reasons for the shortfall included underutilization of the new jumbo drills and difficult ground conditions in parts of the mine. Specifically, December production was low owing to repair of the primary conveyor and 3 days of power outages (Revett Minerals Inc., 2007).

Strategic Nevada Resources Corp. (Vancouver, British Columbia, Canada) reported that it had won a public auction for the right to purchase 100% of the Crescent Mine in the Coeur d'Alene Mining District, Shoshone County, ID, for $650,000. The Crescent Mine, which is near the Sunshine and Bunker Hill Mines, had been operated until 1982 as a high-grade silver mine producing from ore that averaged 960 grams per metric ton (g/t) silver. Startup of production at the Crescent Mine was anticipated by the end of 2007 (Platts Metals Week, 2006; Strategic Nevada Resources Corp., 2007).

Apollo Gold Corporation (Denver, CO) announced that open pit mining activity at its polymetallic Montana Tunnels Mine was suspended on October 21, 2005, for safety reasons; however, the mill continued to process ore from stockpiled material. On May 12, 2006, all operations ceased and the property was placed on care-and-maintenance status. Apollo announced a joint venture with Elkhorn Tunnels LLC (Aspen, CO) in which Elkhorn was granted a 50% interest in the Montana Tunnels Mine in exchange for $13 million in financial contributions. For the year that ended on December 31, 2006, Montana Tunnels produced 0.15 t of gold, 540 t of lead, 3.6 t of silver, and 1,380 t of zinc (Apollo Gold Corporation, 2007).

Consumption

World consumption of silver was 26,100 t in 2006, which was about the same as that in 2005. Domestic consumption of silver was approximately 5,780 t in 2006, which was slightly less than consumption of 5,890 t in 2005 (Silver Institute, The, 2007, p. 50).

Coins and Medal Fabrication.—Approximately 550 t of silver was used for coins and medals in the United States in 2006, a 6% increase from the approximately 520 t used in 2005 (Silver Institute, The, 2007, 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. The Northwest Territorial Mint in Auburn, WA, produced gold, palladium, platinum, and silver commemorative and specialty coins for retirements, special events, and investments. It has a contract with Pan American Silver Corporation (Vancouver, British Columbia, Canada) and uses approximately 94 metric tons per year (t/yr) of silver and looks to increase that amount to about 156 t/yr in the coming years (R.B. Hansen, President, Northwest Territorial Mint, oral commun., September 20, 2007). Commemorative coins are also produced by the U.S. Mint at its San Francisco and West Point locations.

Industrial Applications.—Approximately 3,310 t of silver was used in the United States in 2006 for industrial applications, a 6% increase from the 3,140 t used in 2005 (Silver Institute, The, 2007, p. 52). 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 that are used in passports, speedpasses, and on package labels that help companies keep track of inventory shipments (Free Market News Network, 2005). The U.S. Department of State planned to issue passport cards to U.S. citizens who travel frequently between Canada, Mexico, and the Caribbean. The passport card would contain an RFID that can be read wirelessly from 20 feet away and could reduce the wait at border checkpoints (Nakishima, 2007). 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.

Jewelry and Silverware.—In 2006, the U.S. demand for silver for jewelry and silverware was 470 t, slightly lower than the 490 t used in 2005 (Silver Institute, The, 2007, p. 66). World consumption of silver for jewelry and silverware decreased by about 7% to 7,000 t in 2006 from 7,500 t in 2005. The television market for silver jewelry sales, which averaged $50 per unit, was increasing while department store sales were decreasing. This new market was based on artisanal, couture, designer, and southwestern jewelry styles mainly for sale to women (Catharine Coquillard, Vice-President, QVC, oral commun., November 7, 2007).

Photography.—The overall decline in the use of silver for photographic use began in 2000 mainly because of competition from digital camera technology and the resulting decline in the production of color film and paper. The decline in silver use is reflected in the film sector in which only 1.9 billion rolls of silver-bearing film were sold in 2006, compared with 3.44 billion rolls in 2002. Silver-bearing photographic paper consumption declined to 1,532 square meters (m^2) in 2006 from 1,795 m^2 in 2002. Use of silver for all photographic purposes declined from 6,300 t in 2002 to 4,500 t in 2006 (Silver Institute, The, 2007, p. 62). Other broad photographic-use categories included commercial photography, dental and industrial x rays, graphic arts, shipboard photography, and medical x rays.

Other.—In 2006, silver was also used for batteries, bearings, brazing and soldering, catalysts, medical applications, mirrors, solar energy, and water purification (Silver Institute, The, 2007). Owing to silver's antibacterial properties,

additional applications for silver included clothing, cell-phone covers, classroom notebooks, disinfectants, laundry machines, toothbrushes, and shoes, as well as continuing use as a component of dental amalgam. Silver was used in the development of infection control and wound care products; 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). A silver-coated breathing tube reduced the risk of pneumonia for ventilator patients, for example, and trace amounts of silver (0.003%) have been used in bandages approved by the U.S. Food and Drug Administration. These antibacterial bandages reduced the growth of S. aureus, E. coli, E. hirae, and P. aeruginosa for 24 hours (Walgreen Co., 2005). Silver embedded in locker room surfaces is being used to reduce staph infections, and silver-base disinfectants have been introduced as a low-cost, environmentally sensitive option for use in care centers and food processing facilities. Silver also has been used as a wood-preservative because it inhibits mold and mildew growth. Dental amalgam, though in declining use because of its mercury content, may contain 34% to 38% silver (Lawrence, 1995).

Treatment of medical, dental, and consumer photo-processing waste can generate approximately 100 million gallons per year of wastewater. This wastewater, which may contain 20 million troy ounces of silver annually, can be treated to recover and recycle silver and also produce fertilizers (John Whitney, President, Itronics, Inc., oral commun., September 22, 2006).

Because of its antibacterial properties, silver has been used in other applications. For example, silver has been used as a replacement biocide for chromated copper arsenate (CCA), in construction as a termite repellant, or embedded in cellular phone covers or gym construction materials to reduce the spread of bacteria (Silver Institute, The, 2007, p. 45; Jeffrey Ellis, chemical consultant, oral commun., November 7, 2007).

Prices

In 2006, the average price of silver was $11.61 per troy ounce, which was 58% above the 2005 average price of $7.34 per ounce. Prices for copper, gold, nickel, silver, and zinc all rose significantly during 2006 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. Around that time, silver prices rose to more than $11 per troy ounce, a price not seen since 1983, and peaked at $14.89 per troy ounce on May 11. Exports of silver rose dramatically in 2006 owing to the movement of physical silver to the ETF inventory agency in London, United Kingdom. ETF silver inventories totaled approximately 3,700 t at yearend 2006.

Trade

The United States imported 4,280 t of refined silver and exported 1,500 t of refined silver in 2006 (table 1). Principal import sources included Mexico (2,410 t), Canada (1,480 t), and Peru (505 t). Principal export destinations in 2006 included the United Kingdom (1,170 t), Canada (169 t), and Australia (104 t). U.S. exports of bullion increased dramatically in 2006 to 1,500 t from 166 t in 2004 owing to shipment of approximately 1,180 t destined for ETF inventories in London.

World Review

World mine production was 20,200 t in 2006, a slight decrease from the 20,600 t produced in 2005 (table 8), according to the U.S. Geological Survey. Silver production increased in Peru (9%), the world's leading silver producing country, and in China, (4%); however, production decreased in Mexico (7%) and in Australia (29%). Regionally, production in Latin America increased by 12% to 187 t in 2006 from 167 t in 2005 but decreased in Oceania by 38% to 57 t in 2006 from 79 t in 2005 (Silver Institute, The, 2007, p. 23). In 2006, silver supplied to the market from above-ground stocks of silver decreased by 4%, to 6,050 t from 6,300 t in 2005 (Silver Institute, The, 2007, p. 33).

Bolivia.—Apex Silver Mines Limited's (Denver, CO) San Cristobal property, which is in the Potosi District of southwestern Bolivia, was considered to be one of the world's leading silver-zinc-lead development projects. As of December 31, the property had proven and probable reserves of 1,400 t of contained silver in the ore (Apex Silver Mines Limited, 2007).

China.—In 2006, China produced an estimated 2,600 t of silver, 4% more than 2005 production of 2,500 t (table 8). Silvercorp Metals, Inc. continued exploration in China and announced silver resources of 1,340 t of silver at the Ying project (Silvercorp Metals, Inc., 2005). The Silver Institute released a report prepared by GFMS Ltd. (2005) entitled "A Review of the Chinese Silver Market." According to this report, most of China's silver comes from a considerable number of small mines rather than large mines. China was importing and exporting silver bullion, and its scrap supply came mainly from recycled photographic and electronic applications.

Mexico.—In 2006, Mexico was the second ranked producer of silver; however, production decreased by 7%, to 2,700 t from 2,890 t in 2005. Industrias Peñoles S.A. de C.V. produced 1,460 t in 2006, a slight decrease from 2005 production of 1,474 t (Silver Institute, The, 2007, p. 22).

Peru.—As in 2005, Peru was the world's leading silver producer in 2006. Production increased to 3,470 t in 2006 from 3,190 t in 2005. Production by Peru's leading producer, Cia. Minas Buenaventura, increased to 530 t in 2006 from 475 t in 2005. Five mines in Peru were among the world's top 15 silver-producing mines. In 2006, Pan American Silver Corporation's Morococha Mine benefited from its growing base-metal production that resulted in 90 t of silver produced at a negative cash cost of $3.71 per troy ounce. Overall reserves at Morococha increased by 38%, and investments were made to improve production efficiency and expand underground development. Improvements to the mill circuit resulted in a 20% increase in milling capacity (Pan American Silver Corporation, 2007).

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. Peru was again the site of an annual silvercraft fair, the Concursos Nacionales Plata del Peru, which was organized by Patronato Plata del Peru and several mining companies. Silver was also recycled from negatives and used x-ray film (El Chino, 2007, p. 6).

Outlook

In 2006, reported world silver consumption was 28,400 t, or slightly less than the 28,800 t used in 2005 (Silver Institute, The, 2007, p. 79). Silver use in photography continued to fall in Europe, the United States, and Latin America; however, in other regions, it was relatively stable. Canon Inc., Konica Minolta Holdings, Inc., and Nikon Corporation have announced plans to leave the film-camera business (Musgrove, 2006; Noguchi, 2006). Silver use in photography is expected to level off as silver continues to be used in making high-quality prints from digital sources. Large flat screen televisions using plasma display panels may contain up to 31 grams (g) of silver. The screens have grids consisting of thousands of lines of silver, and sales of these televisions were expected to expand to more than 25 million units by 2010, thereby increasing the demand for silver (Silver Institute, The, 2007, p. 60).

Exports of silver from the United States rose dramatically in 2006, as silver was moved to ETF inventory in London. The ETF and the increased application of silver as an industrial metal and as an antibacterial material could attract a variety of new investors who see silver as a commodity and not only as an investment; as a result, silver prices may continue to rise. Sales of batteries and fuel cells that use metals, specifically silver, are expected to increase by 6% per year through 2007. Alkaline-base fuel cells are of interest because they have cost and technical advantages that include the ability to use nonplatinum catalysts, such as gold and silver, and are therefore less expensive to manufacture (Freedonia Group, The, 2005). Silver's uses in construction, electronics, medicine, superconductivity, water purification, wood preservatives, surgical and wound care, and many applications was expected to continue to increase.

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TABLE 1
SALIENT SILVER STATISTICS[1]

		2002	2003	2004	2005	2006
United States:						
Mine production:						
Quantity	metric tons	1,350	1,240	1,250	1,230	1,140
Value	thousands	$201,000	$196,000	$268,000	$289,000	$426,000
Refinery production:						
Domestic and foreign ores and concentrates	metric tons	2,580	2,580	1,140	2,530	2,210
Scrap (old and new)	do.	1,030	1,010	1,920	981	111
Exports, refined	do.	680	181	422	166	1,500
Imports for consumption, refined	do.	4,300	4,510	4,100	3,880	4,280
Stocks, December 31:						
Industry	metric tons	280	93	131	86	98
Futures exchanges	do.	3,290	3,430	3,580	3,380	3,150
U.S. Department of the Treasury	do.	220	220	220	220 r	220
Price, average[2]	dollars per troy ounce	$4.62	$4.91	$6.69	$7.34	$11.61
Employment, mine and mill workers[3]		1,100	1,200	NA	NA	NA
World, mine production	metric tons	18,800	18,800	19,900 r	20,600 r, e	20,200

[e]Estimated. NA Not available. -- Zero.
[1]Data are rounded to no more than three significant digits, except prices.
[2]Price data are the annual Handy & Harman quotations published in Platts Metals Week.
[3]Employment data are from the U.S. Mine Safety and Health Administration.

TABLE 2
MINE PRODUCTION OF SILVER IN THE UNITED STATES, BY STATE[1]

(Kilograms)

State	2004	2005	2006
California	801	W	W
Nevada	302,000	276,000	245,000
Other[2]	943,000	949,000	895,000
Total	1,250,000	1,230,000	1,140,000

W Withheld to avoid disclosing company proprietary data; included with "Other."
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes Alaska, Arizona, California (2005-06), Colorado, Idaho, Missouri, Montana, New Mexico, South Dakota, and Utah.

TABLE 3

LEADING SILVER-PRODUCING MINES IN THE UNITED STATES IN 2006, IN ORDER OF OUTPUT[1]

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

[1]The mines on this list accounted for 99% of U.S. mine production in 2006.

[2]Includes Eisenhower, Mission, Pima, and San Xavier Mines.

[3]Formerly ASARCO Incorporated.

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

[5]Correction posted April 14, 2008.

TABLE 4
U.S. EXPORTS OF SILVER, BY COUNTRY[1]

Year and country	Silver ores and concentrates		Bullion		Dore		Total	
	Silver content (kilograms)	Value (thousands)	Silver content (kilograms)	Value (thousands)	Silver content (kilograms)	Value (thousands)	Silver content (kilograms)	Value (thousands)
2005	3,680	$834	166,000	$45,900	132,000	$35,000	302,000	$81,700
2006:								
Armenia	105	24	--	--	--	--	--	--
Australia	--	--	104,000	29,500	16	6	104,000	29,500
Brazil	852	363	--	--	--	--	--	--
Canada	--	--	169,000	64,800	119	33	169,000	64,900
Cayman Islands	--	--	83	15	--	--	83	15
Dominican Republic	--	--	50	9	--	--	50	9
Finland	--	--	--	--	712	258	712	258
France	94	20	--	--	--	--	--	--
Germany	13	9	27,200	9,190	--	--	27,200	9,190
Guatemala	--	--	162	53	--	--	162	53
Honduras	--	--	444	80	--	--	444	80
Hong Kong	22	6	--	--	--	--	--	--
Ireland	90	46	--	--	--	--	--	--
Israel	--	--	--	--	3	3	3	3
Italy	--	--	301	103	--	--	301	103
Japan	--	--	17,000	7,500	--	--	17,000	7,500
Korea, Republic of	1,630	3,480	--	--	--	--	--	--
Mexico	96	17	1,790	316	--	--	1,790	316
Morocco	--	--	87	24	--	--	87	24
Netherlands	93	18	6	3	--	--	6	3
Niger	--	--	134	24	--	--	134	24
Norway	--	--	--	--	3,440	1,300	3,440	1,300
Singapore	--	--	--	--	3,740	1,170	3,740	1,170
Spain	--	--	31	10	1,400	441	1,430	451
Switzerland	--	--	--	--	67,900	27,900	67,900	27,900
Thailand	--	--	1,590	287	--	--	1,590	287
Trinidad and Tobago	92	37	--	--	--	--	--	--
United Arab Emirates	--	--	--	--	54	11	54	11
United Kingdom	65	23	1,170,000	474,000	8,070	2,500	1,180,000	477,000
Total	3,150	4,040	1,500,000	586,000	85,400	33,600	1,580,000	620,000

-- Zero.

[1]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[1]

Year and country	Other unwrought silver		Metal powder		Silver nitrate		Semimanufactured forms[2]		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)
2005	39,600	$8,690	708,000	$122,000	61,500	$5,720	269,000	$48,300	2,240,000	$424,000
2006:										
Argentina	--	--	97	16	--	--	122	21	--	--
Aruba	55	12	--	--	--	--	--	--	--	--
Australia	35	12	--	--	380	28	7,820	1,340	37,700	16,600
Austria	--	--	263	45	--	--	212	36	--	--
Azerbaijan	--	--	--	--	--	--	--	--	2,160	281
Bahamas, The	2	8	--	--	--	--	--	--	--	--
Bahrain	--	--	--	--	--	--	325	55	--	--
Bangladesh	--	--	--	--	--	--	--	--	1,360	177
Belgium	46	13	9,330	1,620	--	--	503	85	394,000	67,100
Bermuda	358	79	--	--	--	--	--	--	--	--
Brazil	--	--	563	96	546	22	7,390	1,260	1,990	258
Canada	33,600	12,800	46,700	7,970	35,700	1,910	171,000	29,400	1,160,000	190,000
Cayman Islands	145	41	--	--	--	--	--	--	2	3
China	2,060	627	47,200	8,050	18,900	3,620	6,010	1,070	807,000	123,000
Colombia	--	--	91	15	191	4	--	--	--	--
Costa Rica	14	3	10	4	--	--	394	67	--	--
Czech Republic	--	--	80	14	--	--	129	22	293	182
Denmark	--	--	--	--	--	--	251	48	--	--
Dominica	14	3	--	--	--	--	--	--	--	--
Dominican Republic	500	136	--	--	--	--	1,340	228	1,590	206
Ecuador	20	4	--	--	--	--	35	6	--	--
Egypt	--	--	--	--	--	--	263	45	--	--
Finland	--	--	1,840	313	--	--	--	--	--	--
France	1,280	263	54,200	9,230	--	--	11,300	2,070	--	--
Germany	10,200	4,010	191,000	33,700	231	82	27,500	4,700	966,000	275,000
Grenada	--	--	--	--	--	--	16	6	--	--
Guatemala	--	--	--	--	--	--	718	126	--	--
Hong Kong	420	110	55,300	9,410	--	--	21,000	3,620	22,300	3,690
Hungary	--	--	--	--	--	--	147	25	--	--
India	53	25	661	112	20	3	677	121	1,600	207
Indonesia	--	--	--	--	--	--	--	--	63	8
Ireland	--	--	134	23	--	--	215	40	--	--
Israel	4	3	--	--	68	7	1,970	364	--	--
Italy	1,080	426	549	96	--	--	1,770	312	742,000	194,000
Jamaica	482	116	--	--	--	--	--	--	--	--
Japan	192	86	297,000	51,400	105	20	5,610	962	63,700	77,600
Jordan	828	346	--	--	--	--	650	110	--	--

See footnotes at end of table.

TABLE 5—Continued
U.S. EXPORTS OF SILVER, BY COUNTRY[1]

Year and country	Other unwrought silver		Metal powder		Silver nitrate		Semimanufactured forms[2]		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—Continued:										
Korea, Republic of	18	$17	258,000	$44,500	363	$49	706	$133	70,100	$9,190
Lebanon	--	--	534	91	--	--	--	--	--	--
Lithuania	--	--	--	--	--	--	526	94	--	--
Malaysia	85	19	--	--	120	23	3,780	649	1,800	281
Mexico	2,410	600	21,900	3,750	4,420	485	157,000	27,400	--	--
Netherlands	138	56	13,700	2,350	--	--	8,850	1,540	1,050	137
Netherlands Antilles	403	93	--	--	--	--	--	--	--	--
New Zealand	25	11	187	34	113	7	17	3	--	--
Niger	--	--	--	--	--	--	25	9	--	--
Panama	--	--	--	--	--	--	--	--	118	15
Philippines	28	6	--	--	--	--	987	168	--	--
Portugal	60	18	--	--	--	--	--	--	--	--
Russia	--	--	--	--	--	--	1,130	192	--	--
Saudi Arabia	--	--	--	--	65	25	396	67	200,000	28,500
Singapore	--	--	38,600	6,560	14	3	10,200	1,770	483	673
South Africa	--	--	417	71	50	9	--	--	7,060	918
Spain	--	--	--	--	12	3	39,700	6,750	154	20
Sri Lanka	--	--	--	--	765	125	8	5	--	--
St. Christopher and Nevis	7	5	--	--	--	--	--	--	--	--
Suriname	--	--	--	--	--	--	126	21	108	14
Sweden	3,200	704	6,930	1,180	124	12	40	7	233,000	35,200
Switzerland	673	171	1,830	330	--	--	2,310	431	10,100	82,000
Taiwan	--	--	299,000	54,200	57	11	8,520	1,470	75,400	7,900
Thailand	76	32	4,540	772	--	--	10,400	1,880	2,290	666
Trinidad and Tobago	--	--	100	17	--	--	177	64	--	--
Turks and Caicos Islands	7	5	--	--	--	--	--	--	--	--
United Arab Emirates	67	17	1,030	175	--	--	271	48	--	--
United Kingdom	20,800	7,480	110,000	18,900	8	7	12,700	2,210	83,600	21,400
Uruquay	6,090	2,360	--	--	--	--	--	--	--	--
Venezuela	--	--	108	18	--	--	292	50	--	--
Vietnam	145	30	--	--	--	--	729	124	1,470	191
Total	85,600	30,800	1,460,000	255,000	62,300	6,450	526,000	91,200	4,890,000	1,140,000

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]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[1]

	Silver ores and concentrates		Ash and residues		Bullion		Dore		Total	
Year and country	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)
2005	433	$318	2,630	$769	3,880,000	$902,000	300,000	$89,500	4,180,000	$993,000
2006:										
Argentina	--	--	--	--	--	--	461	114	461	114
Australia	--	--	--	--	42,000	12,200	--	4	42,000	12,200
Belgium	--	--	--	--	17	5	--	--	17	5
Canada	--	--	--	--	1,470,000	497,000	4,300	1,160	1,480,000	499,000
Chile	--	--	--	--	34,400	11,000	72,900	31,300	107,000	42,200
Colombia	--	--	--	--	751	217	3,080	958	3,830	1,180
France	--	--	--	--	--	--	1,100	368	1,100	368
Honduras	--	--	--	--	--	--	646	256	646	256
India	--	--	--	--	54	11	--	3	54	14
Italy	--	--	--	--	9	4	32	13	41	17
Mexico	--	--	--	--	2,300,000	850,000	110,000	65,800	2,410,000	916,000
Panama	--	--	--	--	336	99	97	28	433	127
Peru	--	--	--	--	411,000	146,000	93,900	33,700	505,000	180,000
Philippines	--	--	--	--	--	--	(2)	14	(2)	14
Poland	--	--	--	--	20,000	6,120	--	--	20,000	6,120
Taiwan	--	--	4,800	1,110	--	--	--	--	4,800	1,110
United Kingdom	--	--	--	--	171	67	--	--	171	67
Total	--	--	4,800	1,110	4,280,000	1,520,000	286,000	134,000	4,570,000	1,660,000

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 7

U.S. IMPORTS FOR CONSUMPTION OF SILVER, BY COUNTRY[1]

Year and country	Other unwrought silver		Metal powder		Silver nitrate		Semimanufactured forms[2]		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)
2005	357,000	$80,400	28,400	$6,840	201	$30	181,000	$39,800	3,640,000	$126,000
2006:										
Argentina	--	--	--	--	--	--	--	--	26	255
Australia	--	--	58	10	--	--	4,540	1,910	22,200	3,870
Austria	--	--	--	--	--	--	--	--	3	60
Bahamas	--	--	--	--	--	--	--	--	1	14
Barbados	--	--	--	--	--	--	--	--	2	18
Belgium	--	--	--	--	1	3	--	--	--	--
Brazil	--	--	--	--	--	--	23,700	8,480	164,000	10,100
Canada	91,200	33,800	2,270	419	1	2	2,980	438	533,000	43,300
Chile	--	--	7,630	1,300	--	--	--	--	--	--
China	8	7	100	19	--	--	9,070	7,790	53,800	4,700
Colombia	--	--	--	--	--	--	709	264	18,200	310
Costa Rica	--	--	--	--	--	--	--	--	201,000	6,710
Czech Republic	--	--	--	--	--	--	--	--	37	20
Dominican Republic	39	9	5	11	--	--	--	--	3,320	3,900
Ecuador	--	--	--	--	--	--	--	--	2	17
France	--	--	258	90	--	--	3,400	664	336,000	2,070
Germany	46	15	15,200	2,750	423	110	10,400	4,320	4,750	14,600
Guatemala	--	--	--	--	--	--	--	--	459	3,290
Honduras	--	--	--	--	--	--	--	--	19	74
Hong Kong	--	--	--	--	--	--	--	--	33	37
Hungary	--	--	--	--	--	--	--	--	14	257
Iceland	--	--	--	--	--	--	--	--	4	76
India	501	181	--	--	20	6	194	105	61,000	282
Ireland	--	--	--	--	--	--	--	--	134	618
Israel	--	--	--	--	--	--	--	--	32,300	226
Italy	179	157	--	--	--	--	--	--	1,460	27,000
Jamaica	--	--	--	--	--	--	--	--	2,010	40
Japan	1	3	2,090	526	--	--	2	2	23,000	24,900
Jordan	--	--	--	--	--	--	--	--	308	109
Korea, Republic of	--	--	--	--	--	--	2,500	454	62,300	5,160
Kuwait	--	--	--	--	--	--	--	--	123,000	7,400
Malaysia	--	--	290	51	--	--	--	--	184,000	20,400
Mauritius	--	--	--	--	--	--	--	--	16	5
Mexico	165,000	56,900	377	64	--	--	79	12	267,000	45,400
Nepal	13	7	--	--	--	--	--	--	--	--
Netherlands	56	14	79	20	--	--	4	3	43	13
New Zealand	--	--	149	13	--	--	--	--	96	1,800

See footnotes at end of table.

TABLE 7—Continued

U.S. IMPORTS FOR CONSUMPTION OF SILVER, BY COUNTRY[1]

Year and country	Other unwrought silver		Metal powder		Silver nitrate		Semimanufactured forms[2]		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—Continued:										
Nicaragua	--	--	--	--	--	--	--	--	1	$22
Norway	--	--	92	$16	--	--	--	--	--	--
Panama	--	--	--	--	--	--	--	--	210	748
Peru	--	--	--	--	--	--	136,000	$46,900	2	36
Philippines	--	$9	--	--	--	--	--	--	9,940	671
Poland	--	--	--	--	10	$11	103	37	5	4
Singapore	--	--	--	--	--	--	--	--	2,680	2,500
South Africa	--	--	--	--	--	--	--	--	17,700	683
Spain	--	--	--	--	--	--	235	44	15	2
Sweden	--	--	--	--	--	--	12	3	410	5
Switzerland	615	55	74	27	--	--	--	--	--	--
Taiwan	--	--	1,130	192	--	--	--	--	73,900	10,400
Thailand	--	--	--	--	--	--	7	3	39,200	972
Trinidad and Tobago	--	--	--	--	--	--	--	--	63	8
United Kingdom	395	147	929	177	800	123	10	19	272,000	32,300
Total	259,000	91,300	30,700	5,690	1,260	255	194,000	71,500	2,510,000	275,000

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Containing 99.5% or more by weight of silver.

Source: U.S. Census Bureau.

TABLE 8
SILVER: WORLD MINE PRODUCTION, BY COUNTRY[1, 2]

(Metric tons)

Country	2002	2003	2004	2005	2006[e]
Algeria[e]	1	1	(3)	1	1
Argentina	126	134	172	175 [e]	200
Armenia	6	4	4 [e]	4 [e]	4
Australia	2,077	1,868	2,224 [r]	2,417 [r]	1,727 [4]
Bolivia	450	465	407	419	500
Brazil[5]	33	31	35	38 [r]	38 [p]
Bulgaria[e]	609	50	50	50	50
Burma	1	1	1	2 [r]	2
Canada	1,408	1,310	1,337	1,124 [r]	983
Chile	1,210	1,313	1,360	1,400	1,607 [4]
China[e]	2,200	2,400	2,450	2,500	2,600
Colombia	7	10	9	7	7
Congo (Kinshasa)	2	36	33	54	68 [4]
Costa Rica[e]	(3)	(3)	(3)	-- [r]	--
Ecuador	(3)	(3) [e]	(3)	(3)	(3)
Ethiopia	1	1	1	1	1
Finland	29	31	37	49	50
France[e]	1	1	1	1 [r]	1
Ghana	2	3	3	3 [e]	3
Greece	75	79	79	79 [e]	25 [4]
Guatemala	--	--	--	7	50 [4]
Honduras	53	51 [r]	48	54 [r]	55 [4]
India	52	51	15	32	23
Indonesia	294	285	262 [r]	321 [r]	377 [4]
Iran[e]	23	23	25	25	25
Ireland	5 [e]	9	7	6	4 [4]
Italy[r, 6]	4	4	4 [r]	4 [r]	5
Jamaica	(3) [e]	(3)	(3) [e]	--	--
Japan	81	79	79	54	11 [4]
Kazakhstan	893	827	733	832	830
Korea, North[e]	20	20	20	20	20
Korea, Republic of	7	12	5	4	5
Macedonia[e]	12	10	10	10	10
Malaysia	--	--	(3)	(3) [r]	(3)
Mexico	2,727	2,569	2,569	2,894	2,700
Mongolia[e]	27	27	28	28	28
Morocco	277	201	186	196 [e]	195
Namibia	44	45 [e]	27	30 [r]	30
New Zealand[e]	29	30	30	43 [r]	40
Nicaragua	2	2	2 [e]	2 [e]	2
Oman	(3) [r]	--	--	--	--
Papua New Guinea	63 [r]	62 [e]	56 [r]	51 [r]	50
Peru	2,870	2,921	3,060	3,193	3,471 [4]
Philippines	9 [e]	10	9	19 [r]	19
Poland	1,229	1,237	1,344	1,263 [r]	1,325 [4]
Portugal	20	22 [r]	24	24	24 [p]
Romania[e]	15	18	20	20	20
Russia[e]	400	700	1,277 [4]	1,350 [4]	1,300
Saudi Arabia[e]	14	13	14 [r, 4]	14 [r, 4]	14
Serbia and Montenegro[7]	7	2 [r]	3 [r]	3 [r]	3
South Africa	113	80	71 [r]	88 [r]	87 [p]
Spain	3	2	4 [r]	5 [r]	5
Sudan	3	3	3 [e]	3 [e]	3
Sweden	294	307	293	310 [r]	268 [4]

See footnotes at end of table.

TABLE 8—Continued
SILVER: WORLD MINE PRODUCTION, BY COUNTRY[1, 2]

(Metric tons)

Country	2002	2003	2004	2005	2006[e]
Tajikistan	5	5	5 [e]	5 [e]	5
Tanzania	8	8	13	13	13
Tunisia[e]	3	3	2	4 [e]	--
Turkey[e]	79	95	73	80	85
United States	1,350	1,240	1,250	1,230	1,140 [4]
Uzbekistan[e]	80	80	80	83	83
Zimbabwe	2	1	3	3	1
Total	18,800	18,800	19,900 [r]	20,600 [r]	20,200

[e]Estimated. [p]Preliminary. [r]Revised. -- Zero.

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

[2]Recoverable content of ores and concentrates produced unless otherwise specified. Table includes data available through August 13, 2007.

[3]Less than ½ unit.

[4]Reported figure.

[5]Includes the following quantities, in kilograms, identified as secondary silver: 2002-06—50,000.

[6]Includes production from imported ores.

[7]In June 2006, Montenegro and Serbia formally declared independence from each other and dissolved their union. Mineral production data for 2006, however, still reflect the unified country.