USGS
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2014 Minerals Yearbook

SILVER [ADVANCE RELEASE]

U.S. Department of the Interior
U.S. Geological Survey

June 2016

Silver

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In 2014, the United States produced 1,180 metric tons (t) of silver, which was 14% more than that of 2013 (table 1). Silver was produced in 11 States in 2014, and Alaska remained the leading silver-producing State, followed by Nevada and Idaho. Approximately 99% of domestic silver was produced from base-metal ores at 11 mines and from precious-metal ores at 15 mines (table 3).

The Engelhard price of silver averaged $19.37 per troy ounce in 2014, a 19% decrease compared with the 2013 average price of $23.87 per troy ounce (table 1). The combination of slower economic growth in China, a stronger U.S. dollar relative to other currencies, a decrease in silver investment, and a decrease in physical demand led to the drop in silver prices (Silver Institute, The, 2015, p. 8, 12).

Traditional use categories for silver included coin and medal fabrication; industrial applications, including brazing alloys and solders, electrical and electronics components, photography, and photovoltaics; jewelry; non-coin investments; and silverware. In 2014, global use of silver decreased by 4% compared with that of 2013. All silver applications experienced a decrease, with the exception of brazing alloys and solders, jewelry, photovoltaics, and silverware (Silver Institute, The, 2015, p. 8, 50). In 2014, apparent consumption of silver in the United States of 7,230 t was slightly less than that of revised 2013 consumption as reflected by a decrease in imports of dore and reduced silver recovery from scrap.

In 2014, silver was mined in approximately 65 countries. Production was estimated as 26,800 t, a 4% increase from 25,800 t in 2013. Mexico was the leading producer, followed by China, Peru, Australia, and Chile. These five countries accounted for 60% of the global production of silver. The United States ranked ninth in world silver mine production in 2014.

Legislation and Government Programs

On September 30, 2014, the amount and value of Deep Storage and Working Stock custodial silver reserves held by the U.S. Mint were 498 t with a total market value of $347 million at $21.68 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 rate of no less than $1.292929292 per fine troy ounce was used to value the custodial silver held by the U.S. Mint (U.S. Mint, 2015, p. 43).

In 2014, global physical silver investment (bars, coins, and medals) was 20% lower than that of 2013 but was significantly higher than the historic average. Physical silver investment in 2013 was significantly larger than any other year recorded (Silver Institute, The, 2015, p. 17).

Production

Domestic mine production data were requested from 42 operations. Of these operations, 36 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 was 1,180 t in 2014, which was 14% more than that in 2013. Significant production increases took place in Idaho and Nevada. Silver in the United States was mainly produced as a byproduct from gold and base-metal ores, although silver was produced as a principal product at the Galena, Lucky Friday, and Rochester Mines, with mine production of about 4%, 9%, and 11%, respectively, of 2014 U.S. silver production. After the resumption of mining in 2013, Hecla Mining Co.'s Lucky Friday Mine in Idaho produced 101 t in 2014, more than double the 45 t produced in 2013. The mine had been closed at yearend 2011 following an accident and rock burst and reopened in the first quarter of 2013. Production at Hecla's Greens Creek Mine on Admiralty Island near Juneau, AK, increased by 5% to 243 t from 232 t in 2013 owing to higher throughput and the processing of higher grade ore (Hecla Mining Co., 2015, p. 28, 30). In 2014, Coeur Mining, Inc.'s Rochester Mine, near Lovelock, NV, produced 130 t, 50% more than 2013 production. The production gains resulted from the completion of an expansion of the leach pads in 2013 and a commensurate increase in the amount of ore processed as well as higher silver ore grades and silver recovery rates (Coeur Mining, Inc., 2015, p. 38). Silver production at the Allied Nevada Gold Corp.'s Hycroft Mine, near Winnemucca, NV, was 57 t, a greater than 100% increase from 27 t in 2013 following an expansion project that was completed in 2013 (Allied Nevada Gold Corp., 2015, p. 39).

Scorpio Mining Corp. and U.S. Silver and Gold Inc. merged on December 14, 2014, and continued to operate as Scorpio Mining Corp. In 2014, the Galena Complex (operated by Scorpio subsidiary U.S. Silver and Gold Inc.), near Shoshone, ID, produced about 50 t of silver, down compared with the 66 t produced in 2014. The decrease was due to lower ore production and a drop in silver ore grade (Scorpio Mining Corp., 2015, p. 10).

Consumption

Fabrication demand for silver in the United States was 5,740 t in 2014, a slight increase from that of 2013. A large increase in silver used in jewelry more than offset decreases in silver used in photography and in industrial products (Silver Institute, The, 2015, p. 52, 69).

Coin and Medal Fabrication.—Approximately 1,420 t of silver was used for coins and medals in the United States in

2014, a 3% increase from 1,370 t in 2013. In fiscal year 2014, American Eagle and America the Beautiful silver bullion coins sales decreased by 13% to an equivalent of 1,212 t and generated $865 million in revenue for the U.S. Mint. In 2014, global silver coins and medals fabrication declined by 8% compared with that in 2013 owing to reduced demand by investors in precious metals during a time of declining silver prices. By comparison, however, gold coin manufacturing declined by 37% (Silver Institute, The, 2015, p. 23–24).

Industrial Applications.—Silver consumed in domestic industrial applications decreased for the fourth consecutive year and was at the lowest recorded level since data were first collected in 2000. Approximately 3,900 t of silver was used in the United States in 2014 for industrial applications, a decrease from the 3,960 t of silver that was used in 2013 (Silver Institute, The, 2015, p. 54).

The principal components of industrial demand for silver were brazing alloys and solders, catalysts, electrical, electronics, photography, photovoltaics, and other applications. Adding silver to solder (used to join metals at less than 600 °C) or brazing alloys (used to join metals at more than 600 °C) helps produce smooth, leak-tight, and corrosion-resistant joints. Silver brazing alloys were used widely in a variety of applications including air conditioning and refrigeration and electric power distribution. They also were important in the automobile and aerospace industries. In 2014, about 182 t of silver was used domestically in brazing alloys and solders, slightly more than in 2013 (Silver Institute, The, 2015, p. 55).

As a catalyst, silver can be used in the form of mesh screens or crystals to produce ethylene oxide and formaldehyde, both of which are essential ingredients in plastics. Approximately 90% of the silver used as an industrial catalyst was for the production of ethylene oxide from ethylene (Silver Institute, The, 2015, p. 60).

In 2014, the domestic use of silver for the electronic and electrical applications totaled 1,680 t, a slight increase from 1,660 t in 2013 (Silver Institute, The, 2015, p. 55). One of silver's electrical applications is in batteries. The most common silver-oxide battery was the small button-cell battery used in calculators, cameras, hearing aids, toys, and watches, and which contains about 35% silver by weight. Because of environmental and safety concerns, silver-oxide batteries also were beginning to replace lithium-ion batteries in mobile phones and laptop computers. Silver-zinc batteries feature a water-based chemistry and contain no lithium or flammable liquids. Some larger silver-oxide and silver-zinc batteries were used in military applications. Silver also was used in conductors, contacts, fuses, switches, and timers (Silver Institute, The, undated).

Silver membrane switches were used in buttons on electronics, such as computer keyboards, microwave ovens, telephones, televisions, and toys. Silver-based inks and films were applied to composite boards to create electrical pathways in printed circuit boards. Silver-based inks also were used in radio frequency identification (RFID) tags used in hundreds of millions of products to prevent theft and allow easy inventory control. Silver paste was used in 90% of all crystalline silicon photovoltaic cells, the most common type of solar cell; this has been a growth market in the United States for the past several years (Silver Institute, The, undated).

Silver was one of the essential materials used in the manufacture of films and photographic papers. The decline in the use of silver for photography began in 2000 in response to the growth in digital camera technology and the decline in the production of color film and paper. The use of silver in film and paper for consumer applications declined more rapidly than its use in motion picture film because of the slower adoption of digital formats in motion picture production. Other broad photographic-use categories for silver-containing film and paper included commercial photography, dental and industrial x-ray film, graphic arts, and medical x-ray film. In 2014, domestic use of silver for photographic application was 476 t, a 4% decrease from 498 t in 2013 (Silver Institute, The, 2015, p. 63–64).

Dental amalgam, although in declining use because of its mercury content, still may contain silver (U.S. Food and Drug Administration, 2015). Owing to silver's antibacterial properties, silver also was used in such products as clothing, laundry machines, shoes, and toothbrushes. Silver embedded in locker room surfaces was 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 Institute, The, undated).

Jewelry and Silverware.—In 2014, the U.S. consumption of silver for jewelry was 398 t, a 10% increase compared with the 361 t used in 2013, whereas U.S. consumption of silver for silverware was unchanged (Silver Institute, The, 2015, p. 69, 75).

Prices and Stocks

The daily average Engelhard silver price began the year at $20.11 per troy ounce and declined to $19.07 per troy ounce at the end of January before rising to $22.05 per troy ounce in late February, the highest level for the year. The price cycled through midyear before trending down to $15.35 per troy ounce in early November, the lowest level in 2014. The average price for 2014 of $19.37 per troy ounce was 19% lower than the 2013 average of $23.87 per troy ounce and 45% lower than the record-high annual price in 2011 of $35.28 per troy ounce (table 1). The combination of an economic growth slowdown in China, a stronger U.S. dollar, a decrease in silver investment, and a decrease in physical demand led to the drop in silver prices (Silver Institute, The, 2015, p. 8, 12).

Global silver inventories in various Exchange Traded Funds (ETFs), including iShares Silver Trust, ETF Securities, and other ETFs, increased slightly to approximately 19,800 t at yearend 2013 from 19,700 t at yearend 2012 (Silver Institute, The, 2015, p. 21).

Foreign Trade

U.S. exports of silver bullion and dore decreased by 5% to 377 t in 2014 from 395 t in 2013. Principal destinations were Canada (53%), Mexico (18%), and Australia (15%) (table 4). U.S. imports of bullion and dore decreased slightly to 4,960 t in 2013 from 5,020 t in 2013. The principal import sources of bullion and dore were Mexico (59%), Canada (22%), and the Republic of Korea (7%) (table 6).

World Review

World mine production of silver increased for the third consecutive year to 26,800 t in 2014, which was a 4% increase from 25,700 t in 2013. Mexico continued to be the leading producer of silver, accounting for 19% of world production. Mexico was followed by China (15%); Peru (14%); Australia and Chile (6% each); Bolivia, Poland, and Russia (5% each); the United States (4%); Argentina, Guatemala, and Kazakhstan (3% each); and Canada (2%). These 13 countries accounted for about 91% of the global silver production.

Silver production increased in 8 of the top 13 producing countries in 2013. The most significant increases were by producers in Chile, where production increased to 1,574 t in 2014 from 1,219 t in 2013, and Guatemala, where production increased to 858 t in 2014 from 283 t in 2013. Sizable increases in silver production also took place in Argentina, Bolivia, the Dominican Republic, Mexico, Peru, Poland, Sweden, and the United States. Significant decreases took place in Australia, Canada, China, Congo (Kinshasa), Kazakhstan, and Russia (table 8).

According to The Silver Institute, about 31% of global silver production was from silver ores, 35% was from lead and zinc ores, 20% from copper ores, 13% from gold ores, and less than 1% was from other types of mining operations (Silver Institute, The, 2015, p. 34).

Silver scrap recycling declined to 5,240 t in 2014, a 12.5% decrease compared with that of 2013, owing primarily to the low price of silver. Other contributing factors included stricter Government regulation in some countries and less coin and jewelry recycling as the economies of industrialized nations improved (Silver Institute, The, 2015, p. 41–44).

Global silver consumption decreased by 4% to 33,200 t in 2014 from 34,600 t in 2013. Industrial applications, accounting for 56% of the total global consumption, were the leading end uses of silver, followed by jewelry (20%); bars, coins, and medals (18%); and silverware (6%). The greatest increases in silver use were for photovoltaic applications (7%) and brazing alloys and solders (5%). Jewelry and silverware uses increased slightly and other markets, including physical investment (bars, coins, and medals), electrical and electronics, photography, and other industrial applications, decreased. Less investment in silver coins and bars resulted in a 20% decrease in global investment sales to 6,100 t in 2014 from 7,580 t in 2013 (Silver Institute, The, 2015, p. 11, 79).

Argentina.—Silver production increased by 7% to 900 t in 2014 from 844 t in 2013 owing to production increases at most of the major silver mines and to the startup of Goldcorp Inc.'s Cerro Negro Mine, which produced 67 t of silver and accounted for about half of the growth. Processing of ore at Cerro Negro commenced in July and began ramping up to full capacity of 4,000 metric tons per day of ore (Goldcorp Inc., 2015, p. 8, 49). Significant increases in silver production took place at Pan American Silver Corp.'s Manantial Espejo Mine and Troy Resources Ltd.'s Casposo Mine. At Manantial Espejo, an 11% increase in the ore throughput and a 5% increase in the silver ore grade resulted in an 18% increase in silver production to 116 t from 98 t in 2013 (Pan American Silver Corp., 2015, p. 20). Silver production at Casposo increased by 40 t (75%) compared with that in 2013, owing to higher silver ore grades, increased ore milling capacity and throughput, and an improved silver recovery rate (Troy Resources Ltd., 2013, p. 1; 2014a, p. 3, 8; 2014b, p. 1; 2015, p. 1). In mid-August, access to the pit at Glencore plc's 50%-owned Alumbrera Mine was temporarily restricted by a geotechnical event. The amount of ore mined consequently declined by 26% relative to that of 2013, and silver production decreased by 33% to 24 t from 36 t in 2013 (Glencore plc, 2015a, p. 54, 197).

Australia.—Production in Australia decreased by 7% principally owing to the 15% decrease in production of payable metal in concentrate at BHP Billiton Ltd.'s Cannington Mine to 769 t in 2014 from 905 t in 2013. The decrease was the result of lower average ore grades but was in accord with plans to cease operation at Cannington in 2015 (BHP Billiton Ltd., 2014, p. 14; 2015, p. 6, 14). This was partially offset by increased production from MMG Ltd.'s Century Mine, which produced 51 t, up from 36 t in 2013, owing to higher ore throughput (MMG Ltd., 2015, p. 46).

Chile.—Silver production increased by 29% to 1,574 t in 2014 from 1,219 t in 2013. This increase was mostly due to the beginning of commercial production at Corporación Nacional del Cobre de Chile's (CODELCO's) Ministro Hales Mine. The mine produced 238 t more silver in 2014 than in 2013. Silver production at CODELCO's Chuquicamata Mine increased by 87% to 187 t of silver from 100 t during 2013 (Corporación Nacional del Cobre de Chile, 2013; 2015, p. 99).

Yamana Gold Inc. produced 264 t of silver at the El Peñón Mine in 2014, 31% more than 2013 production. The increase resulted from a 4% increase in the amount of ore processed, a 12% increase in the silver recovery rate, and a 13% increase in the average silver grade (Yamana Gold Inc., 2015, p. 68). Several other mines in Chile increased production by more than 15 t in 2014, including CODELCO's Salvador Mine, BHP Billiton's 57.5%-owned Escondida Mine, and Glencore's 44%-owned Collahuasi Mine (Corporación Nacional del Cobre de Chile, 2015, p. 99; Glencore plc, 2015a, p. 2; Rio Tinto plc, 2015, p. 197).

The most significant decrease in production resulted from the suspension of mining operations at Kinross Gold Corp.'s La Coipa Mine in late 2013. It was expected that a pre-feasibility study to explore a potential restart would be completed by the end of 2015 (Kinross Gold Corp., 2015, p. 3, MDA3). La Coipa had produced 90 t of silver in 2013 (Kinross Gold Corp., 2014, p. MDA22).

Canada.—Primary and byproduct silver production decreased by 24% in 2014. The closure of Glencore's Brunswick Mine in June 2013 resulted in a significant decrease in byproduct silver production in 2014 (Glencore plc, 2015a, p. 54). Agnico Eagle Mines Ltd. reported a 39% decrease in production to 40 t in 2014 from 65 t in 2013 at its LaRonde Mine owing to lower silver ore grades (Agnico Eagle Mines Ltd., 2015, p. 31, 76, 80).

Congo (Kinshasa).—An 85% decrease in silver production was primarily attributable to decreased production at Mawson West Ltd.'s Dikulushi copper-silver mine. Following exhaustion of the open pit mine, the underground mine began operation in 2013 and silver production decreased to 6 t in 2014 from 60 t in

2013 because of lower throughput and the lower silver grades in the ore processed from the underground operation (Mawson West Ltd., 2015, p. 6).

Dominican Republic.—Goldcorp increased silver production at its Pueblo Viejo Mine to 48 t in 2014 from 26 t in 2013 with higher throughput more than offsetting lower silver ore grades (Goldcorp Inc., 2015, p. 47).

Guatemala.—Silver production in Guatemala more than tripled in 2014, increasing to 858 t in 2014 from 283 t in 2013, primarily because commercial production at Tahoe Resources Inc.'s Escobal Mine began in January. Production at Escobal increased to 631 t in 2014 from 64 t in 2013 (Tahoe Resources Inc., 2014; 2015, p. 27). The remainder of the growth in Guatemala was accounted for by a 4% production increase at Goldcorp's Marlin Mine (Goldcorp Inc., 2015, p. 43).

Kazakhstan.—Glencore reported that production of silver at its Kazzinc operation decreased to 133 t from 163 t in 2013 owing to lower lead and zinc output (Glencore plc, 2015b, p. 3). Production at KAZ Minerals plc's East Region mines in Kazakhstan decreased to 107 t from 146 t in 2013 owing to lower ore grades (KAZ Minerals plc, 2015, p. 39).

Indonesia.—Production in Indonesia declined by 6% owing primarily to the placement of Straits Resources Ltd.'s Mt. Muro Mine on care-and-maintenance status in August 2013 (Straits Resources Ltd., 2015, p. 9).

Mexico.—Fresnillo plc increased its silver production by 5% to 1,400 t in 2014 from 1,330 t in 2013. Higher throughput at its Saucito Mine resulted in a 33% increase in silver production to 479 t from 360 t in 2013. Production also increased at Fresnillo's Herradura Mine (21 t in 2014 compared with 9 t in 2013) and Noche Buena Mine (3 t in 2014 compared with 2 t in 2013). The increases were partially offset by decreased production at Fresnillo's Ciénega Mine (127 t in 2014 compared with 132 t in 2013) and Fresnillo Mine (625 t in 2014 compared with 708 t in 2013) (Fresnillo plc, 2015, p. 30, 59–68). First Majestic Silver Corp. increased output by 10% to 365 t from 331 t in 2013 owing to increased production at the Del Toro Silver Mine and increased mill production and capacity at the San Martin Silver Mine (First Majestic Silver Corp., 2015, p. 148). Goldcorp produced 803 t of silver at its Peñasquito Mine in 2014, a 15% increase from 698 t in 2013 owing to higher ore grades and an increase in ore processed (Goldcorp Inc., 2015, p. 36).

Morocco.—Société Métallurgique d'Imiter, Morocco's leading silver producer, reported a 4% decrease in production to 186 t in 2014 from 194 t in 2013 owing to lower head grades (Groupe Managem, 2015, p. 18).

Peru.—In 2014, silver production increased to 3,778 t, almost 3% more than 2013 production. Compañía de Minas Buenaventura S.A.A. completed an expansion project at its Julcani Mine and increased production to 96 t, 14% more than produced in 2013 (Compañía de Minas Buenaventura S.A.A., 2015). Increased production at Pan American Silver Corp.'s Huaron and Morococha Mines and Hochschild Mining Plc's Pallancata Mine more than offset production decreases at Volcan Compania Miñera S.A.A.'s Cerro de Pasco Mine, which suspended mining in the open pit in 2013, and Barrick Gold Corp.'s Pierina Mine, which began closing operations in August of 2013 (Silver Institute, The, 2015, p. 27).

Poland.—KGHM Polska Miedź S.A. accounted for most of the increased silver production in Poland with an output of 1,256 t of silver, an 8% increase from 1,161 t in 2013 owing to increased throughput (KGHM Polska Miedź S.A., 2015, p. 126, 129).

Russia.—Silver production in Russia declined by 7% in 2014, primarily owing to low byproduct recovery at base-metal mining operations (Silver Institute, The, 2015, p. 32). Silver production at Polymetal International plc's Dukat Hub, Russia's leading producer of silver as a primary product, increased by 8% to a record-high 743 t from 687 t in 2013 (Polymetal International plc, 2015, p. 28, 142).

Sweden.—Boliden AB accounted for nearly all of that country's increase in silver production. Boliden's production increased by 23% to 323 t in 2014 from 262 t in 2013 owing primarily to higher mill throughput at its Garpenberg Mine (Boliden AB, 2015, p. 1, 36).

Outlook

World production of silver is expected to remain flat in 2015 because anticipated increases in production from expanding base metal producers are expected to be offset by production decreases at more mature mines.

The use of silver in photographic applications is expected to continue to decrease. As hospitals convert their x-ray equipment to digital systems, silver use in photographic applications is expected to continue to decline until its use remains only in niche applications such as artistic photography.

The use of silver in crystalline silicon photovoltaic cells is expected to increase as production increases although, per solar cell, silver use is expected to decline owing to the relatively high cost of silver. New uses for silver include those that take advantage of its biocidal or conductive properties. Antimicrobial silver technology is expected to be used in cooking utensils, food packaging, medical products, textiles, toiletries, and water-purification devices. The use of RFIDs for tracking stocks and shipments, including silver-base high-data-capacity tags, readers, and computer systems, is expected to increase. Although already used in many products, demand for silver-oxide batteries may increase with the proliferation of laptop and tablet computers and cellular telephones with advanced computing capabilities.

References Cited

Agnico Eagle Mines Ltd., 2015, Discovering value—2014 annual report: Toronto, Ontario, Canada, Agnico Eagle Mines Ltd., March 25, 165 p. (Accessed May 20, 2015, at http://ir.agnicoeagle.com/files/doc_financials/2014/March2015/AEM_2014AR_SEDAR.pdf.)

Allied Nevada Gold Corp., 2015, Form 10–K—2014: U.S. Securities and Exchange Commission, 104 p. (Accessed November 4, 2015, via www.sedar.com.)

BHP Billiton Ltd., 2014, BHP Billiton operational review for the half year ended 31 December 2013: Melbourne, Victoria, Australia, BHP Billiton Ltd. news release, January 22, 25 p. (Accessed May 21, 2015, at http://www.bhpbilliton.com/~/media/bhp/documents/investors/news/2014/140122_bhpbillitonoperationalreviewforthehalfyearended31december2013.pdf.)

BHP Billiton Ltd., 2015, BHP Billiton operational review for the half year ended 31 December 2014: Melbourne, Victoria, Australia, BHP Billiton Ltd. news release, January 21, 26 p. (Accessed May 21, 2015, at http://www.bhpbilliton.com/~/media/bhp/documents/investors/news/2015/150121_bhpbillitonoperationalreviewforthehalfyearended31december2014.pdf.)

Boliden AB, 2015, Annual report 2014: Stockholm, Sweden, Boliden AB, February 19, 120 p. (Accessed May 18, 2015, at http://investors.boliden.com/files/press/boliden/Boliden_ar14_2015-03-10_ENG.pdf.)
Corporación Nacional del Cobre de Chile, 2013, Thomas Keller—"Hemos adelantado la explotación de mineral de Ministro Hales" [We have advanced the mineral exploitation of Ministro Hales]: Santiago, Chile, Corporación Nacional del Cobre de Chile press release, November 12. (Accessed May 18, 2015, at http://www.codelco.com/hemos-adelantado-la-explotacion-de-mineral-de-ministro-hales/prontus_codelco/2013-11-12/152037.html.)
Corporación Nacional del Cobre de Chile, 2015, Memoria anual 2014: Santiago, Chile, Corporación Nacional del Cobre de Chile, 342 p. (Accessed May 18, 2015, at http://www.codelco.com/memoria2014/.)
Coeur Mining, Inc., 2014, 2014 annual report—Moving forward: Coeur d'Alene, ID, Coeur Mining, Inc., 96 p. (Accessed November 4, 2015, at http://investors.coeur.com/Cache/1001196591.PDF?Y=&O=PDF&D=&fid=1001196591&T=&iid=4349317.)
Compañía de Minas Buenaventura S.A.A., 2015, Annual report—2014: Lima, Peru, Compañía de Minas Buenaventura S.A.A. (Accessed January 13, 2016, at http://extapps.mz-ir.com/rao/Buenaventura/2014/rao.asp?i=1.)
First Majestic Silver Corp., 2015, Form 40–F—2014: U.S. Securities and Exchange Commission, 197 p. (Accessed May 18, 2015, at http://www.firstmajestic.com/assets/docs/fs/2014-Form-40-F.pdf.)
Fresnillo plc, 2015, Well placed to address cyclical uncertainties—Annual report 2014: London, United Kingdom, Fresnillo plc, March 3, 260 p. (Accessed May 18, 2015, at http://www.fresnilloplc.com/media/201302/fresnilloplcar14.pdf.)
Glencore plc, 2015a, Annual report 2014: Baar, Switzerland, Glenore plc, March 17, 204 p. (Accessed May 21, 2015, at http://www.glencore.com/assets/investors/doc/reports_and_results/2014/GLEN-2014-Annual-Report.pdf.)
Glencore plc, 2015b, Corporate update and production report for the 12 months ended 31 December 2014: Baar, Switzerland, Glencore plc news release, February 11, 20 p. (Accessed May 18, 2015, at http://www.glencore.com/assets/investors/doc/reports_and_results/2014/GLEN-2014-Q4-Production-Report.pdf.)
Goldcorp Inc., 2015, Core strengths—2014 annual report: Vancouver, British Columbia, Canada, Goldcorp Inc., 141 p. (Accessed May 18, 2015, at http://www.goldcorp.com/files/ar2014/_doc/Goldcorp_AR14_full.pdf.)
Groupe Managem, 2015, Résultats annuels 2014—Présentation: Casablanca, Morocco, Groupe Managem, March 26, 33 p. (Accessed May 19, 2015, via http://www.managemgroup.com/Investisseurs/Resultats-financiers/Presentations2.)
Hecla Mining Co., 2015, Stronger than ever—2014 annual report: Coeur d'Alene, ID, Hecla Mining Co., 116 p. (Accessed November 4, 2015, at http://216.139.227.101/interactive/hl2014.)
KAZ Minerals PLC, 2015, Annual report and accounts 2014—Transformational change: London, United Kingdom, KAZ Minerals PLC, February 25, 184 p. (Accessed May 21, 2015, at http://asp-gb.secure-zone.net/v2/index.jsp?id=624/3348/9925&lng=en.)
KGHM Polska Miedź S.A., 2015, Annual report 2014: Lubin, Poland, KGHM Polska Miedź S.A., March 16, 205 p. (Accessed May 18, 2015, at http://kghm.com/sites/kghm2014/files/document-attachments/report_s_2014.pdf.)
Kinross Gold Corp., 2014, 2013 annual report: Toronto, Ontario, Canada, Kinross Gold Corp., 84 p. (Accessed May 20, 2015, at http://s2.q4cdn.com/496390694/files/doc_financials/annual/2013/kinross-2013-annual-report.pdf.)
Kinross Gold Corp., 2015, Annual report 2014: Toronto, Ontario, Canada, Kinross Gold Corp., 77 p. (Accessed May 20, 2015, at http://2014annualreport.kinross.com/pdf/annual-report-2014.pdf.)
Mawson West Ltd., 2015, Annual report 2014: West Perth, Western Australia, Australia, Mawson West Ltd., March 26, 97 p. (Accessed May 19, 2015, at http://www.mawsonwest.com.au/IRM/content/annualreport/2014.pdf.)
MMG Ltd., 2015, Transforming through growth—Annual report 2014: Kowloon, Hong Kong, MMG Ltd., March 10, 152 p. (Accessed May 21, 2015, at http://www.mmg.com/en/Investors-and-Media/Reports-and-Presentations/~/media/Files/About us/MMG 2014 Annual Report.ashx.)
Pan American Silver Corp., 2015, Annual report 2014: Vancouver, British Columbia, Canada, Pan American Silver Corp., 97 p. (Accessed May 18, 2015, at http://panamericansilver.com/annualreport2014/wp-content/uploads/2015/04/PAS_AR2014_PrintFinal.pdf.)
Polymetal International plc, 2015, Sustaining growth and creating value—Annual report 2014: St. Helier, Jersey [United Kingdom], Polymetal International plc, March 30, 160 p. (Accessed May 20, 2015, at http://www.polymetalinternational.com/~/media/Files/P/Polymetal/Annual Reports/2014_Polymetal_Annual_Report_eng_2704.pdf.)
Rio Tinto plc, 2015, 2014 annual report: London, United Kingdom, Rio Tinto plc, 228 p. (Accessed May 20, 2015, at http://www.riotinto.com/documents/RT_Annual_report_2014.pdf.)
Scorpio Mining Corp., 2015, Annual information form for the financial year ending December 31, 2014: Toronto, Ontario, Canada, Scorpio Mining Corp., March 30, 70 p. (Accessed November 3, 2015, at http://www.americassilvercorp.com/i/pdf/fs/AIF_Mar15.pdf.)
Silver Institute, The, 2015, World silver survey 2015: Washington, DC, The Silver Institute, May, 100 p.
Silver Institute, The, [undated], Silver in industry: Washington, DC, The Silver Institute. (Accessed April 21, 2015, via https://www.silverinstitute.org/site/silver-in-industry.)
Straits Resources Ltd., 2015, 2014 annual report: Brisbane, Queensland, Australia, Straits Resources Ltd., June 30, 140 p. (Accessed July 18, 2015, at http://www.straits.com.au/images/files/News/2014/Straits_Annual_Report_2014.pdf.)
Tahoe Resources Inc., 2014, Tahoe reports 2013 results: Vancouver, British Columbia, Canada, Tahoe Resources Inc. news release, March 13. (Accessed May 18, 2015, at http://www.tahoeresourcesinc.com/tahoe-reports-2013-results/.)
Tahoe Resources Inc., 2015, Annual information form for the year ended December 31, 2014: Vancouver, British Columbia, Canada, Tahoe Resources Inc., March 11, 48 p. (Accessed May 18, 2015, at http://www.tahoeresourcesinc.com/wp-content/uploads/2015/03/2014-12-31-Annual-Information-Form.pdf.)
Troy Resources Ltd., 2013, Troy Resources half year ended 31 December 2012 financial results: West Perth, Western Australia, Australia, Troy Resources Ltd., February 26, 17 p. (Accessed May 18, 2015, at http://www.troyresources.com.au/images/files/half-yearly/Half Yearly Report for the period ended 31 December 2012.pdf.)
Troy Resources Ltd., 2014a, Annual report for the year ended 30 June 2014: West Perth, Western Australia, Australia, Troy Resources Ltd., 125 p. (Accessed May 18, 2015, via http://www.troyres.com.au/investor-centre/reports/annual.html.)
Troy Resources Ltd., 2014b, Troy Resources Limited results for announcement to the market for the half-year ended 31 December 2013: West Perth, Western Australia, Australia, Troy Resources Ltd., 20 p. (Accessed May 18, 2015, at http://www.troyresources.com.au/images/files/half-yearly/140224_Half_Year_Financial_Statements.pdf.)
Troy Resources Ltd., 2015, Troy Resources Limited results for announcement to the market for the half-year ended 31 December 2014: West Perth, Western Australia, Australia, Troy Resources Ltd., 22 p. (Accessed May 18, 2015, at http://www.troyresources.com.au/images/files/half-yearly/150227_Half_Yearly_Financial_Statements.pdf.)
U.S. Food and Drug Administration, 2015, About dental amalgam fillings: Silver Spring, MD, U.S. Food and Drug Administration, February 10. (Accessed April 21, 2015, at http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/DentalProducts/DentalAmalgam/ucm171094.htm.)
U.S. Mint, 2015, 2014 annual report: Washington, DC, U.S. Mint, 64 p. (Accessed May 14, 2015, at http://www.usmint.gov/downloads/about/annual_report/2014AnnualReport.pdf.)
Yamana Gold Inc., 2015, 2014 annual report: Toronto, Ontario, Canada, Yamana Gold Inc., 212 p. (Accessed May 18, 2015, at http://yamana.com/files/oar/2014/files/Yamana-Annual-Report.pdf.)

GENERAL SOURCES OF INFORMATION

U.S. Geological Survey Publications

1998 Assessment of Undiscovered Deposits of Gold, Silver, Copper, Lead, and Zinc in the United States. Circular 1178, 2000.
Historical Statistics for Mineral and Material Commodities in the United States. Data Series 140.
Precious Metals. Mineral Industry Surveys, monthly (through December 2003).

Silver. Ch. in Mineral Commodity Summaries, annual.
Silver. Ch. in United States Mineral Resources, Professional Paper 820, 1973.
Silver. Mineral Industry Surveys, monthly (since January 2004).
Silver (Ag). Ch. in Metal Prices in the United States Through 2010, Scientific Investigations Report 2012–5188, 2013.

Other

Silver. Ch. in Mineral Facts and Problems, U.S. Bureau of Mines Bulletin 675, 1985.

TABLE 1
SALIENT SILVER STATISTICS[1]

		2010	2011	2012	2013	2014
United States:						
Mine production:						
Quantity	metric tons	1,280	1,120	1,060	1,040	1,180
Value	thousands	$829,000	$1,270,000	$1,060,000	$793,000	$737,000
Refinery production:						
Domestic and foreign ores and concentrates	metric tons	819	790	796	800	800
Scrap (old and new)	do.	1,330	1,710	1,660	1,700	1,400
Exports:						
Ore and concentrate	do.	82	172	42	14	6
Bullion and dore	do.	627	732	905	395	377
Imports for consumption:						
Ore and concentrate[2]	do.	4	84	83	57 r	(3)
Bullion and dore	do.	5,370	6,320	5,060	5,020	4,960
Stocks, December 31:						
Industry	do.	123	150	109	110	120
COMEX	do.	3,260	3,650	4,610	5,350	5,610
U.S. Department of the Treasury	do.	498	498	498	498	498
Bullion coin production[4]	do.	1,100	1,310	1,070	1,100	1,560
Price, average[5]	dollars per troy ounce	20.04 r	35.28 r	31.22 r	23.87 r	19.37
Employment, mine and mill workers[6]		814	632	709	819	792
World, mine production	metric tons	23,300 r	23,200 r	24,400 r	25,800 r	26,800 e

eEstimated. rRevised. do. Ditto.
[1]Data are rounded to no more than three significant digits, except prices.
[2]Includes silver content of ash and residues.
[3]Less than ½ unit.
[4]Data from the U.S. Mint.
[5]Price data are the annual Engelhard quotations published in Platts Metals Week.
[6]Employment data are from the U.S. Department of Labor, Mine Safety and Health Administration, for mines classified as (active and temporarily idle) silver mines by the U.S. Geological Survey.

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

(Kilograms)

State	2012	2013	2014
Nevada	250,000	255,000	326,000
Other[2]	805,000	782,000	858,000
Total	1,060,000	1,040,000	1,180,000

[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]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 2014, IN ORDER OF OUTPUT[1]

Rank	Mine	County and State[2]	Operator or owner	Source of silver
1	Greens Creek	Southeastern Region, AK	Hecla Mining Co.	Zinc-silver ore.
2	Red Dog	Northern Region, AK	Teck Alaska Inc.	Zinc-lead ore.
3	Rochester	Pershing, NV	Coeur Mining, Inc.	Silver ore.
4	Lucky Friday	Shoshone, ID	Hecla Mining Co.	Do.
5	Bingham Canyon	Salt Lake, UT	Kennecott Utah Copper Corp.[3]	Copper-molybdenum ore.
6	Hycroft	Humboldt and Pershing, NV	Allied Nevada Gold Corp.	Gold ore.
7	Galena Complex	Shoshone, ID	Scorpio Mining Corp.	Silver ore.
8	Phoenix	Lander, NV	Newmont Mining Corp.	Gold-copper ore.
9	Midas[4]	Elko and Lander, NV	Klondex Mines Ltd.	Gold ore.
10	Mission Complex	Pima, AZ	ASARCO LLC[5]	Copper-molybdenum ore.
11	Bagdad	Yavapai, AZ	Freeport-McMoRan Copper & Gold Inc.	Do.
12	Continental Pit	Silver Bow, MT	Montana Resources Inc.	Do.
13	Smoky Valley Common Operation	Nye, NV	Kinross Gold Corp. (50%), Barrick Gold Corp. (50%)	Gold ore.
14	Morenci	Greenlee, AZ	Freeport-McMoRan Copper & Gold Inc.	Copper-molybdenum ore.
15	Mineral Park	Mohave, AZ	Mercator Minerals Ltd.	Do.
16	Carlin Mines Operations[6]	Elko, Eureka, and Humboldt, NV	Newmont Mining Corp.	Gold ore.
17	Wharf	Lawrence, SD	Goldcorp Inc.	Do.
18	Denton-Rawhide	Mineral, NV	Rawhide Mining, LLC	Do.
19	Ray	Pinal, AZ	ASARCO LLC[5]	Copper ore.
20	Cripple Creek[7]	Teller, CO	AngloGold Ashanti Ltd.	Gold ore.
21	Pinto Valley	Gila, AZ	Capstone Mining Corp.	Copper ore.
22	Florida Canyon	Pershing, NV	Jipangu Inc.	Gold ore.
23	Chino	Grant, NM	Freeport-McMoRan Copper & Gold Inc.	Copper ore.
24	Golden Sunlight	Jefferson, MT	Klondex Mines Ltd	Gold ore.
25	Ruby Hill	Eureka, NV	Barrick Gold Corp.	Do.
26	Goldstrike	Elko and Eureka, NV	do.	Do.

Do., do. Ditto.

[1]The mines on this list accounted for more than 99% of U.S. mine production in 2014.

[2]For Alaska, mines are located by geographic region, as delineated by the Alaska Division of Geological & Geophysical Surveys in its Special Report 67, Alaska's mineral industry 2011—Exploration activity.

[3]Wholly owned subsidiary of Rio Tinto plc.

[4]Klondex Mines Ltd. acquired 100% interest on February 1, 2014, from Newmont Mining Corp.

[5]Wholly owned subsidiary of Grupo México, S.A.B. de C.V.

[6]Includes nine open pit operations (Emigrant, Genesis, Gold Quarry, Lantern, Lone Tree, Midas, Pay Raise, Twin Creeks, and Widge Mines) and six underground operations (Carlin East, Chukar, Exodus, Leesville, Pete Bajo, and Vista Mines).

[7]Formerly listed as Cresson Mine (2000 through 2011); production data were not available for 2012 and 2013.

TABLE 4
U.S. EXPORTS OF REFINED 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)
2013	13,800	$31,300	347,000	$258,000	48,000	$39,400	409,000	$328,000
2014:								
Albania	--	--	--	--	680	198	680	198
Australia	107	326	55,300	36,100	1,600	1,080	57,000	37,500
Austria	--	--	545	429	143	100	688	529
Bangladesh	--	--	218	148	--	--	218	148
Belgium	--	--	513	196	180	125	693	321
Canada	2	3	200,000	147,000	--	--	200,000	147,000
Cayman Islands	--	--	184	204	--	--	184	204
China	4,230	11,300	100	51	523	378	4,850	11,800
Czech Republic	32	33	163	100	--	--	195	133
Estonia	--	--	1,370	842	103	76	1,470	918
France	--	--	113	61	--	--	113	61
Germany	1,090	5,810	1,190	753	1,960	1,310	4,240	7,870
Hong Kong	44	35	1,330	675	9	8	1,380	718
India	--	--	1,180	749	984	721	2,160	1,470
Israel	--	--	23	16	301	204	324	220
Italy	--	--	3,410	1,740	153	38	3,570	1,770
Korea, Republic of	72	182	24	20	--	--	96	202
Lebanon	--	--	470	352	--	--	470	352
Malaysia	--	--	1,990	1,210	--	--	1,990	1,210
Mexico	--	--	62,400	51,400	4,500	2,510	66,900	53,900
New Zealand	28	20	385	274	1,320	879	1,730	1,170
Norway	--	--	408	173	4,810	2,810	5,220	2,980
Panama	--	--	391	294	--	--	391	294
Singapore	61	91	9,820	7,610	4,710	3,030	14,600	10,700
Spain	--	--	--	--	140	87	140	87
Switzerland	16	11	1,090	624	2,870	1,630	3,970	2,260
Taiwan	15	12	619	307	99	42	733	361
United Arab Emirates	--	--	198	144	970	599	1,170	743
United Kingdom	28	22	1,550	892	5,290	3,610	6,860	4,520
Other	15	29	345	276	41	27	401	332
Total	5,740	17,900	346,000	253,000	31,400	19,500	383,000	290,000

-- 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)
2013	120,000	$116,000	660,000	$551,000	39,800	$4,370	741,000	$535,000	19,300,000	$1,570,000
2014:										
Australia	23	21	22	23	528	206	4,280	2,830	69	248
Belgium	--	--	3,960	2,970	--	--	84	76	2,410,000	92,000
Brazil	1	3	2,590	2,590	602	47	970	749	215	5,270
Canada	26,000	18,900	41,400	10,100	24,300	1,900	271,000	211,000	2,770,000	364,000
Chile	1,010	689	4	10	(3)	8	610	305	5	25
China	3,720	2,330	77,600	58,100	170	102	8,070	4,360	49,400	39,100
Colombia	38	81	--	--	--	--	442	227	1,750	18
Costa Rica	2,770	1,770	--	--	526	155	1,410	898	46	108
Finland	--	--	--	--	--	--	788	394	28	138
France	1,200	923	62,700	41,000	--	--	3,920	2,720	9	10
Germany	202	1,560	33,900	25,200	(3)	12	4,250	2,800	2,260,000	168,000
Hong Kong	4,090	3,840	40,300	31,100	--	--	4,690	2,650	3,320	3,170
India	24,300	10,100	506	397	(3)	10	4,690	2,730	2,270	1,320
Ireland	--	--	33	26	(3)	8	16,400	9,270	--	--
Israel	275	78	56	57	239	16	1,050	668	2	56
Italy	4,510	1,540	2,820	2,320	204	5	1,320	715	1,480,000	481,000
Japan	328	2,010	48,100	36,500	(3)	5	408	284	3,500,000	151,000
Jordan	--	--	--	--	--	--	1,240	659	--	--
Korea, Republic of	3,760	32,900	64,900	46,800	398	102	9,070	6,890	1,380	7,520
Luxembourg	--	--	--	--	--	--	--	--	1,790	53,700
Malaysia	167	107	3,800	2,990	(3)	48	2,900	1,830	--	--
Mexico	21,100	16,300	16,000	9,720	1,940	561	89,300	47,600	275,000	49,100
Netherlands	--	--	13,900	10,200	--	--	--	--	--	--
Norway	--	--	--	--	--	--	565	256	339,000	8,570
Philippines	38	57	--	--	--	--	1,800	970	--	--
Saudi Arabia	7	4	--	--	138	7	2,180	1,100	160	71
Singapore	98	56	65,400	49,800	820	193	20,500	12,100	130	15
South Africa	60	32	--	--	(3)	19	213	117	75,600	1,570
Spain	5	8	25	11	--	--	7,060	3,530	--	--
Sweden	--	--	--	--	197	46	4,290	2,220	1,990,000	64,000
Switzerland	198	483	60	55	--	--	1,070	675	11,100	9,580
Taiwan	535	440	225,000	160,000	(3)	9	1,200	684	303	158
Thailand	4,100	2,940	1,320	974	116	22	3,180	1,600	53	45
United Arab Emirates	229	92	--	--	--	--	1,750	848	--	--
United Kingdom	189	1,080	25,400	19,000	255	25	11,200	6,450	500,000	72,000
Venezuela	--	--	29	53	(3)	3	1,430	717	--	--
Other	2,740	1,530	1,190	852	2,550	258	5,240	2,880	2,690	1,910
Total	102,000	99,900	731,000	511,000	33,000	3,770	489,000	334,000	15,700,000	1,570,000

See footnotes at end of table.

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

-- 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.
[3]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF REFINED SILVER, BY COUNTRY[1]

Year and country	Ash and residues, 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)
2013	56,600 r	$22,700 r	3,830,000	$3,020,000	1,190,000	$1,390,000	5,080,000 r	$4,430,000 r
2014:								
Argentina	--	--	17,500	18,100	34,200	38,500	51,700	56,600
Australia	--	--	191	162	--	--	191	162
Belgium	--	--	1,550	1,000	--	--	1,550	1,000
Bolivia	--	--	7,190	3,790	113,000	74,000	120,000	77,800
Canada	--	--	1,120,000	700,000	32	20	1,120,000	700,000
Chile	--	--	119	78	--	--	119	78
Colombia	--	--	--	--	2,880	1,780	2,880	1,780
Dominican Republic	--	--	194	278	193	125	387	403
Ecuador	--	--	--	--	188	128	188	128
Germany	--	--	2,590	1,850	--	--	2,590	1,850
Guatemala	--	--	--	--	6,620	8,420	6,620	8,420
Honduras	--	--	--	--	190	127	190	127
Italy	--	--	--	--	5,760	4,150	5,760	4,150
Korea, Republic of	--	--	333,000	207,000	--	--	333,000	207,000
Mexico	--	--	2,140,000	1,320,000	781,000	750,000	2,920,000	2,070,000
Nicaragua	--	--	--	--	3,220	2,000	3,220	2,000
Panama	--	--	440	261	321	204	761	465
Peru	--	--	77,800	49,000	118,000	78,600	196,000	128,000
Poland	--	--	77,000	42,200	--	--	77,000	42,200
Russia	--	--	360	199	--	--	360	199
Singapore	--	--	--	--	286	179	286	179
South Africa	--	--	272	185	--	--	272	185
Taiwan	--	--	82,400	54,800	--	--	82,400	54,800
United Kingdom	--	--	41,000	22,400	96	89	41,100	22,400
Other	59	12	255	174	48	30	362	216
Total	59	12	3,900,000	2,420,000	1,070,000	958,000	4,960,000	3,380,000

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

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)
2013	194,000	$159,000	742,000	$385,000	1,860	$537	1,300,000	$986,000	8,480,000	$443,000
2014:										
Australia	--	--	--	--	--	--	20,000	12,900	--	--
Brazil	--	--	--	--	--	--	--	--	1,650,000	8,930
Belgium	--	--	--	--	542	25	--	--	723,000	8,010
Canada	140,000	63,200	66,300	4,280	189	75	409,000	265,000	1,360,000	80,000
China	56	49	60,200	2,640	--	--	19	14	836,000	11,000
Colombia	70	43	--	--	--	--	4,610	2,910	5,390	1,070
France	--	--	14,900	2,760	--	--	--	--	29,500	735
Germany	61	49	2,700	1,310	763	62	8,600	4,450	20,900	66,600
Hungary	--	--	18,600	1,050	--	--	--	--	--	--
India	150	63	60	42	(3)	4	642	171	117	236
Italy	3,100	2,050	--	--	--	--	243	127	130	3,650
Japan	--	--	620,000	307,000	--	--	1,290	728	18,900	227
Korea, Republic of	67	9	399	330	--	--	1	8	--	--
Malaysia	--	--	--	--	--	--	--	--	131,000	1,660
Mexico	95,800	57,700	--	--	(3)	4	218,000	71,500	634,000	15,400
Netherlands	5,510	388	--	--	--	--	--	--	36,800	858
Peru	--	--	--	--	--	--	211,000	137,000	--	--
Romania	--	--	6,060	279	--	--	--	--	--	--
Singapore	--	--	6,730	2,300	--	--	--	--	76,200	15,800
Sweden	--	--	725	287	--	--	--	--	76,900	1,200
Switzerland	84	91	915	36	--	--	860	615	--	--
Taiwan	--	--	132	38	--	--	18,500	12,900	18,900	3,110
United Kingdom	1,400	959	1,390	651	814	361	687	510	444,000	33,600
Other	115	77	93	59	25	13	785	430	246,000	26,700
Total	246,000	125,000	799,000	323,000	2,330	544	895,000	509,000	6,310,000	279,000

-- 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.

[3]Less than ½ unit.

Source: U.S. Census Bureau.

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

(Metric tons)

Country[3]	2010	2011	2012	2013	2014[e]
Algeria	(4)	(4)	(4)	(4)	(4)
Argentina	723	747	799	844 [r]	900
Armenia	68	25	22	19 [r]	20
Australia	1,879 [r]	1,725	1,727 [r]	1,840	1,720
Azerbaijan	2	1	1	2 [r]	2
Bolivia	1,259	1,214	1,206	1,287	1,344 [5]
Botswana	--	--	9	23	30
Brazil	69 [r]	72 [r]	72 [r]	73 [r, p]	72
Bulgaria	28 [r]	32 [r]	47 [r]	56 [r]	55
Burkina Faso	--	--	--	15	15
Canada, metal content of concentrate produced	591	661	685 [r]	646 [r]	493 [5]
Chile	1,287	1,291	1,195	1,219 [r]	1,574 [5]
China[e]	3,500	3,700	3,900	4,100	4,060 [5]
Colombia	15	24	19	14	12
Congo (Kinshasa)	6	10	12	60	9
Côte d'Ivoire	(4)	(4)	1 [r]	1 [r]	1
Dominican Republic	23 [r]	18	27	78	100
Ecuador	1	1	1 [r]	2 [r]	2
Eritrea	--	4	30	16	16
Ethiopia[e]	2	2	2	1 [r, 5]	1
Fiji, mine output, Ag content	(4)	(4)	(4)	(4)	(4)
Finland	65	11 [r]	10 [r]	14 [r]	13 [5]
Georgia	1	2	1	1	1
Ghana[e]	3 [5]	3 [5]	3	3	3
Greece	29 [e]	33 [r]	40 [r]	39 [r]	39
Guatemala	195	273	205	283 [r]	858 [5]
Honduras	58	53	51	51 [r]	55
India	146 [r]	192 [r]	332 [r]	356 [r]	303 [5]
Indonesia	335 [r]	227 [r]	248 [r]	255 [r, e]	239 [5]
Ireland	4	6 [r]	9 [r]	8 [r]	8
Japan	5	4 [r]	4 [r]	4 [r]	4
Kazakhstan	552	651	963	964 [r]	920
Korea, North[e]	25 [r]	28 [r]	28 [r]	28 [r]	28
Korea, Republic of	2	3	3	4 [r]	4
Laos	16	17	19	30 [r]	30
Malaysia	(4)	(4)	2	(4) [r, e]	(4)
Mexico	3,499 [r]	4,150 [r]	4,496 [r]	4,861	5,000
Mongolia	29	28	31 [r]	50 [r, e]	65
Morocco	243	186	173 [r]	289 [r]	280
Namibia, metal content of concentrates[e]	18 [r]	24 [r]	22 [r]	21 [r]	20
New Zealand	17	14	6	11 [r]	11
Nicaragua	7	8	10	14 [r]	15
Niger	(4)	(4)	(4)	(4) [e]	(4)
Oman	(4)	-- [r]	--	--	--
Pakistan[e]	3	3	3	3	3
Panama	1	2	2	2 [e]	--
Papua New Guinea	74	91 [r]	81 [r]	90 [r]	87
Peru	3,640	3,419	3,481 [r]	3,674	3,778 [5]
Philippines	41	46	49 [r]	40 [r]	23 [5]
Poland	1,181	1,167	1,149	1,199	1,263 [5]
Portugal	24	28	27	37	45
Romania	-- [r]	--	--	--	--
Russia	1,545	1,200 [r]	1,400 [r]	1,428 [r]	1,334 [5]
Saudi Arabia[e]	8 [5]	8 [5]	4	2	2
Serbia	5	5	5 [r]	6	6
Slovakia	(4)	(4)	(4)	1	1

See footnotes at end of table.

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

(Metric tons)

Country[3]	2010	2011	2012	2013	2014[e]
Solomon Islands	--	1 [r]	1 [r]	1 [r]	1
South Africa	79	73	67	69	69
Spain	(4) [r]	9 [r]	9 [r]	6 [r, e]	6
Sudan, mine output, Ag content[e]	1 [5]	1	1	1	1
Sweden	302	238 [r]	309 [r]	341 [r]	383 [4]
Switzerland, refined	1 [r]	2	2	2	3
Tajikistan	3	2	2	3 [r]	3
Tanzania	12	10	11	11	11
Thailand	17	19	31	31	32 [p, 5]
Turkey	364	247	194 [r]	190 [r]	184 [5]
United Kingdom	(4)	1	(4)	(4)	(4)
United States	1,280	1,120	1,060	1,040	1,180 [5]
Uzbekistan	59	60	60	64 [e]	64
Zambia[e]	10	10	10	10	10
Zimbabwe[e]	(4)	1	1	1	1
Total	23,300 [r]	23,200 [r]	24,400 [r]	25,800 [r]	26,800

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

[1]World totals, U.S. data, and estimated data have been 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. Includes data available through April 4, 2016.

[3]In addition to the countries listed, Iran and Kyrgyzstan produced silver, but available information is inadequate to make reliable estimates of output levels.

[4]Less than ½ unit.

[5]Reported figure.