SILVER
(Data in metric tons¹ of silver content unless otherwise noted)

Domestic Production and Use: In 2019, U.S. mines produced approximately 980 tons of silver with an estimated value of $510 million. Silver was produced at 4 silver mines and as a byproduct or coproduct from 33 domestic base- and precious-metal operations. Alaska continued as the country’s leading silver-producing State, followed by Nevada. There were 24 U.S. refiners that reported production of commercial-grade silver with an estimated total output of 2,500 tons from domestic and foreign ores and concentrates and from new and old scrap. The physical properties of silver include high ductility, electrical conductivity, malleability, and reflectivity. In 2019, the estimated domestic uses for silver were electrical and electronics, 30%; jewelry and silverware, 26%; coins and medals, 12%; photography, 3%; and other, 29%. Other applications for silver include use in antimicrobial bandages, clothing, pharmaceuticals, and plastics; batteries; bearings; brazing and soldering; catalytic converters in automobiles; electroplating; inks; mirrors; photovoltaic solar cells; water purification; and wood treatment. Mercury and silver, the main components of dental amalgam, are biocides, and their use in amalgam inhibits recurrent decay.

Salient Statistics—United States:

Production:
Mine 1,090 1,150 1,030 934 980
Refinery:
Primary 1,530 1,530 1,420 1,420 1,400
Secondary (new and old scrap) 1,100 1,010 1,030 1,050 1,100
Imports for consumption² 5,930 6,160 5,040 4,840 4,700
Exports² 818 289 157 602 300
Consumption, apparent³ 6,590 8,040 7,320 6,090 6,500
Price, average, dollars per troy ounce⁴ 15.72 17.20 17.07 15.75 16.20
Stocks, yearend:
Industry 869 866 490 632 630
Treasury⁵ 498 498 498 498 498
New York Commodities Exchange—COMEX 5,000 5,710 7,570 9,140 9,800
Employment, mine and mill, number⁶ 1,210 1,190 1,010 961 970
Net import reliance² as a percentage of apparent consumption 67 73 72 67 68

Recycling: In 2019, approximately 1,100 tons of silver was recovered from new and old scrap, about 17% of apparent consumption.

Import Sources (2015–18):² Mexico, 48%; Canada, 29%; Peru, 5%; Poland, 4%; and other, 14%.

Tariff: Item Number Normal Trade Relations 12–31–19
Silver ores and concentrates, silver content 2616.10.0040 0.8 ¢/kg on lead content.
Bullion, silver content 7106.91.1010 Free.
Dore, silver content 7106.91.1020 Free.

Depletion Allowance: 15% (Domestic), 14% (Foreign).

Government Stockpile: The U.S. Department of the Treasury maintains stocks of silver (see salient statistics above).

Events, Trends, and Issues: The estimated average silver price in 2019 was $16.20 per troy ounce, 3% higher than the average price in 2018. The price began the year at $15.46 per troy ounce, then decreased to a low of $14.37 per troy ounce on May 28. The price increased to a high of $19.40 per troy ounce on September 4 before trending downward through November.

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SILVER

In 2019, global consumption of silver was estimated to have increased slightly from that of 2018. Coin and bar consumption increased for the third year in a row. Consumption for jewelry and silverware was also estimated to have increased in 2019. Photography and other industrial uses decreased in 2019. Overall, production in the global silver market was estimated to have been greater than consumption in 2019 resulting in an excess supply of silver; however, investor purchases were expected to more than offset the surplus and support the higher silver price.\textsuperscript{8}

World silver mine production increased slightly in 2019 to an estimated 27,000 tons, principally as a result of increased production from mines in Argentina, Australia, Mexico, and Poland. Some silver-producing mines in Chile and Peru experienced reductions in production owing to protestor blockades and worker strikes. Domestic silver mine production increased by 5% in 2019 compared with that in 2018 principally from increased production at mining operations in Alaska.

\textbf{World Mine Production and Reserves}: Reserves for Australia, Peru, and Poland were revised based on new information from official Government sources.

\begin{table}[h]
\centering
\begin{tabular}{|l|c|c|c|}
\hline
 & Mine production & Reserves\textsuperscript{9} & \\
 & 2018 & 2019* & \\
\hline
United States & 934 & 980 & 25,000 \\
Argentina & 1,020 & 1,200 & NA \\
Australia & 1,220 & 1,400 & 10,900,000 \\
Bolivia & 1,190 & 1,200 & 22,000 \\
Chile & 1,370 & 1,300 & 26,000 \\
China & 3,570 & 3,600 & 41,000 \\
Mexico & 6,120 & 6,300 & 37,000 \\
Peru & 4,160 & 3,800 & 120,000 \\
Poland & 1,470 & 1,700 & 100,000 \\
Russia & 2,100 & 2,100 & 45,000 \\
Other countries & 3,730 & 3,600 & 57,000 \\
World total (rounded) & 26,900 & 27,000 & 560,000 \\
\hline
\end{tabular}
\caption{World Mine Production and Reserves.}
\end{table}

\textbf{World Resources}: Although silver was a principal product at several mines, silver was primarily obtained as a byproduct from lead-zinc mines, copper mines, and gold mines, in descending order of production. The polymetallic ore deposits from which silver was recovered account for more than two-thirds of U.S. and world resources of silver. Most recent silver discoveries have been associated with gold occurrences; however, copper and lead-zinc occurrences that contain byproduct silver will continue to account for a significant share of reserves and resources in the future.

\textbf{Substitutes}: Digital imaging, film with reduced silver content, silverless black-and-white film, and xerography substitute for traditional photographic applications for silver. Surgical pins and plates may be made with stainless steel, tantalum, and titanium in place of silver. Stainless steel may be substituted for silver flatware. Nonsilver batteries may replace silver batteries in some applications. Aluminum and rhodium may be used to replace silver that was traditionally used in mirrors and other reflecting surfaces. Silver may be used to replace more costly metals in catalytic converters for off-road vehicles.

\textsuperscript{8}Estimated. NA Not available.
\textsuperscript{1}One metric ton (1,000 kilograms) = 32,150.7 troy ounces.
\textsuperscript{2}Silver content of base metal ores and concentrates, refined bullion, and dore; excludes coinage, and waste and scrap material.
\textsuperscript{3}Defined as mine production + secondary production + imports – exports + adjustments for Government and industry stock changes.
\textsuperscript{4}Engelhard’s industrial bullion quotations. Source: Platts Metals Week.
\textsuperscript{5}Balance in U.S. Mint only; includes deep storage and working stocks.
\textsuperscript{6}Source: U.S. Department of Labor, Mine Safety and Health Administration. Only includes mines where silver is the primary product.
\textsuperscript{7}Defined as imports – exports + adjustments for Government and industry stock changes.
\textsuperscript{8}DiRienzo, Michael, and Newman, Philip, 2019, Release of Metal Focus interim silver market review—Silver to remain in a small surplus in 2019, but improving investor sentiment will help drive the price higher: Silver Institute and Metal Focus, November 19, 2 p.
\textsuperscript{9}See Appendix C for resource and reserve definitions and information concerning data sources.
\textsuperscript{10}For Australia, Joint Ore Reserves Committee-compliant reserves were 25,000 tons.