

SILVER

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

Domestic Production and Use: Silver, produced by about 76 mines in 16 States, had an estimated value of \$338 million in 1998. Nevada was the largest producer, followed by Alaska, Arizona, and Idaho. Precious metal ores accounted for approximately one-half of domestic silver production; the other one-half was recovered as a byproduct from processing of copper, lead, and zinc ores. There were 22 principal refiners of commercial-grade silver with an estimated output of approximately 3,600 tons. About 30 fabricators accounted for more than 90% of the silver consumed in arts and industry. The remainder was consumed mostly by small companies and artisans. Aesthetic uses of silver for decorative articles, jewelry, tableware, and coinage were overshadowed by industrial and technical uses. Industrial and technical uses include photographic materials, electrical products, catalysts, brazing alloys, dental amalgam, and bearings.

<u>Salient Statistics—United States:</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998^e</u>
Production: Mine	1,490	1,560	1,570	2,150	2,100
Refinery: Primary	1,810	NA	NA	2,200	1,900
Secondary	1,700	NA	NA	1,360	1,700
Imports for consumption ²	2,600	3,250	3,010	2,540	2,600
Exports ²	967	2,890	2,950	3,080	3,800
Shipments from Government stockpile excesses	186	220	232	109	250
Consumption, apparent	NA	NA	NA	4,980	5,240
Price, dollars per troy ounce ³	5.29	5.15	5.19	4.89	5.10
Stocks, yearend: Treasury Department ⁴	882	520	402	484	400
COMEX, CBT ⁵	10,400	6,290	4,550	3,430	3,500
Department of Defense	15	13	10	—	—
Employment, mine and mill, ⁶ number	1,000	1,200	1,400	1,550	1,600
Net import reliance ⁷ as a percent of apparent consumption	NA	NA	NA	E	E

Recycling: About 1,700 tons of silver was recovered from old and new scrap in 1998.

Import Sources² (1994-97): Canada, 26%; Mexico, 24%; Germany, 9%; Peru, 8%; and other, 33%.

Tariff: No duties are imposed on imports of unrefined silver or refined bullion.

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

Government Stockpile:

	Stockpile Status—9-30-98⁸				
Material	Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 1998	Disposals FY 1998
Silver	1,092	—	1,092	280	133

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Events, Trends, and Issues: The price of silver increased sharply in the first quarter of 1998 following the disclosure that a U.S.-based investment firm had accumulated more than 4,000 tons of silver, the equivalent of 16% of world fabrication demand in 1997. The firm began purchasing large volumes of silver on July 25, 1997, when silver closed at \$4.32 per ounce. Only 5 months later the price rose to a 9-year high of \$6.27 per ounce. Thereafter, however, the price of silver began to fluctuate and the trend was down for the remainder of the year.

The Government continued to dispose of the silver held in the National Defense Stockpile, using it primarily for the production of commemorative coins and the Eagle silver bullion coins. During the past 16 years, from 1982 through September 30, 1998, the Government has reduced the quantity of silver held in the Stockpile from nearly 4,300 tons to about 1,100 tons.

Photographic demand accounts for about 28% of total silver demand, and digital imaging is considered to be a potential threat to the silver market. In contrast to the use of silver halide film in conventional photography, digital technology converts images directly into electronic form, thereby avoiding the need for silver. Silver halide pictures may also be scanned into electronic form, which necessitates the use of silver in taking and printing the picture but eliminates the need for silver halide technology in further processing. The major advantage of using digital cameras is the ability to immediately capture a digital picture that can be manipulated on a personal computer using readily available software. The major disadvantage is that digital cameras are expensive and produce poorer picture quality compared to conventional cameras.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves ⁹	Reserve base ⁹
	1997	1998 ^e		
United States	2,150	2,100	33,000	72,000
Australia	1,106	1,100	29,000	33,000
Canada	1,222	1,200	37,000	47,000
Mexico	2,679	2,700	37,000	40,000
Peru	2,077	1,900	25,000	37,000
Other countries	<u>7,170</u>	<u>7,200</u>	<u>120,000</u>	<u>190,000</u>
World total (may be rounded)	16,400	16,200	280,000	420,000

World Resources: World reserves of minable silver at current prices total about 280,000 tons. Approximately two-thirds of world silver resources are associated with copper, lead, and zinc deposits, often at great depths. The remaining one-third is in vein deposits in which silver is the most valuable metallic component. Although most recent discoveries have been primarily gold and silver deposits, significant future reserves and resources are expected from major base metal discoveries that contain byproduct silver. Even though the price of silver and improved technology may appear to increase sharply the quantity of minable reserves, the extraction of silver from these resources will depend on the salability of the primary base metals.

Substitutes: Aluminum and rhodium can be substituted for silver in mirrors and other reflecting surfaces. Tantalum can be used in place of silver for surgical plates, pins, and sutures. Stainless steel is an alternate material used widely in the manufacture of table flatware. Nonsilver batteries being developed may replace silver batteries in some applications. Silverless black and white film, film with reduced silver content, and xerography are alternatives to some uses of silver in photography.

^eEstimated. E Net exporter. NA Not available.

¹One metric ton (1,000 kilograms) = 32,150.7 troy ounces.

²Refined bullion, plus silver content of ores, concentrates, precipitates, and doré; excludes coinage, waste, and scrap material.

³Handy & Harman quotations.

⁴Balance in Mint only.

⁵COMEX: Commodity Exchange Inc., New York. CBT: Chicago Board of Trade.

⁶Source: Mine Safety and Health Administration.

⁷Defined as imports - exports + adjustments for Government and industry stock changes.

⁸See Appendix C for definitions.

⁹Includes silver recoverable from base metal ores. See Appendix D for definitions.