



# 2007 Minerals Yearbook

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**GOLD [ADVANCE RELEASE]**

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# GOLD

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In 2007, domestic mine production of gold decreased to 238,000 kilograms (kg), down by 6% compared with that of 2006 (tables 1, 2). Production from the major mines in Nevada was lower as a result of lower grade ore, closure of a mine, and companies concentrating on mine development. Many mine projects and expansions have been slow to develop; however, these projects were expected to begin production in 2008. Three new mines began full production in 2007, two in Nevada and one in Alaska. Recent price increases have spurred exploration and development of new gold projects. However, since new mines can take more than 10 years to open, there was a lag in replacement of older mines with new mines. Although gold production in 2007 was lower than that in 2006, higher prices resulted in a 9% increase in gold value. Mines in Nevada accounted for almost 78% of domestic production in 2007. The remaining production came from mines in Alaska, Utah, Colorado, Montana, South Dakota, California, New Mexico, Arizona, and Idaho, in descending order of production. Gold was produced at lode mines, a few large placer mines in Alaska, and numerous small placer mines, mostly in Alaska and the Western States. In addition, domestic gold was produced as a byproduct of processing base metals, principally copper. In the United States, 30 operations yielded 99% of the gold produced.

The 2007 domestic exploration budget increased to \$763 million, a 34% increase compared with that of 2006. Much of the increase in exploration was in Alaska and Nevada and was concentrated on gold projects. Exploration for gold has gone beyond the recent gold-producing States; Michigan, Minnesota, North Carolina, South Carolina, and others have been explored for gold deposits. Worldwide gold exploration expenditures rose by 31% compared with those of 2006 to \$4.2 billion and represented 41% of the worldwide exploration budget for all minerals (Lowrey, 2007; Wilburn, 2008).

Commercial-grade refined gold was produced by about two dozen domestic companies. Of several thousand companies and artisans, a few dozen companies dominated the fabrication of gold into commercial products. U.S. jewelry manufacturing was heavily concentrated in the New York, NY, and Providence, RI, areas, with other manufacturers in California, Florida, and Texas. In 2007, the estimated percentages for end use of gold were jewelry and arts, 82%; dental and other, 10%; and electrical and electronics, 8%.

Trade in refined bullion comprised 67% of U.S. gold imports and 63% of exports; the United States was a net exporter of 279,000 kg of bullion in 2007. The increase in exports was caused by an increase in price and an increase in investments outside the United States. Canada and Mexico provided almost 45% and 15%, respectively, of the refined bullion imported, and Switzerland and the United Kingdom were the destinations for 51% and 37%, respectively, of the refined bullion exported (tables 4, 6).

The price for gold was volatile and rose throughout 2007. Engelhard Corp.'s daily price of gold ranged from a low of \$610.08 per troy ounce on January 10 to a high of \$843.18 per troy ounce on November 8. The annual average price of \$698.95 per troy ounce, 15% above the average gold price in 2006, was the highest annual average price ever.

In 2007, gold held in gold exchange-traded funds (ETFs) and similar products increased by 251 metric tons (t) to 900 t. ETFs were listed on exchanges in 11 countries and some ETFs of larger holdings were the Central Fund of Canada listed on the Toronto [Ontario, Canada] Stock Exchange, the two Gold Bullion Securities listed on the Australian and London [United Kingdom] Stock Exchanges, iShares COMEX Gold Trust listed on the American Stock Exchange, NewGold Gold Debentures listed on the Johannesburg [South Africa] Stock Exchange, and streetTRACKS gold shares listed on the New York Stock Exchange. Domestic gold holdings in ETFs increased by 37%, or 185 t, to 683 t, with streetTRACKS accounting for 92% of domestic gold ETF holdings. Because gold ETFs are essentially paper gold products, with each share representing a physical allotment of gold that is held in trust, they provide an easily accessible investment. Gold ETFs follow the gold prices, with a fee structure to cover administrative and storage costs (CPM Group, 2008, p. 51–57; World Gold Council, 2008, p. 10).

The top 15 mining companies produced about one-half of the gold produced in 2007 and the top 5 were, in descending order, Barrick Gold Corp. (Toronto), AngloGold Ashanti Ltd. (Johannesburg), Newmont Mining Co. (Denver, CO), Gold Fields Ltd. (Johannesburg), and Freeport-McMoRan Copper & Gold Inc. (Phoenix, AZ), which accounted for almost one-third of world gold production.

The gold mining industry continued its unprecedented period of change driven by mergers and acquisitions. On February 27, Kinross Gold Corp. (Toronto), the tenth leading gold mining company, completed the takeover of Bema Gold Corp. (Vancouver, British Columbia, Canada). Gold Fields gained full control of the South African South Deep operations by taking over Western Areas Ltd. (Johannesburg). Yamana Gold Inc. (Toronto) completed a three-way merger with Meridian Gold Corp. (Reno, NV) and Northern Orion Resources Inc. (Vancouver). The companies have several projects in North America and South America, including a 40% interest in the newly opened Rossi/Storm Mine in Nevada. In July, Zijin Mining (Shanghang County, Fujian Province, China), the 15th leading gold mining company, purchased Commonwealth & British Minerals Ltd. (London) (the operator of the Zeravshan Mine in Tajikistan). On June 20, Queenstake Resources Ltd. (Denver) and YGC Resources Ltd. (Vancouver) merged to form Yukon-Nevada Gold Corp. (Vancouver), which operates the Jerritt Canyon Mine in Nevada. Other takeovers in 2007

were Northgate Minerals Corp.'s (Toronto) purchase of Perseverance Corp. Ltd. (Bendigo, Victoria, Australia) and Sino Gold Ltd.'s (Sydney, New South Wales, Australia) purchase of Golden China Resources Corp. (Toronto). Several companies also sold off mines or projects to raise money to invest in the development of other mines or projects (Goldsmith, 2008; Klapwijk and others, 2008, p. 46).

Total world mine production of gold was slightly lower than that of 2006. Mine production in China increased and it became the leading gold producer. Annual output in South Africa decreased for the sixth year in a row because of higher costs, lower grade ore, and labor issues. The leading producers among more than 90 gold-mining nations were, in descending order, China, South Africa, Australia, the United States, and Peru (table 8).

It is estimated that 15% of all gold ever mined was employed in dissipative industrial uses or was unaccounted for or unrecoverable (Thomas and Boyle, 1986, p. 6). Therefore, of an estimated 155,000 t of gold mined historically through 2007, 132,000 t of gold remains in circulation, with 29,000 t held by central banks as official stocks and 103,000 t held privately as bullion, coin, and jewelry.

## Production

Domestic lode mine production data for gold were derived by the U.S. Geological Survey from two separate voluntary surveys of U.S. mining operations—one for monthly production of copper, gold, lead, silver, and zinc from lode mines and the other for lode mine production data surveyed annually. In 2007, one respondent reported that its mine closed. Individual company production and performance data listed in table 3 and cited elsewhere in this report were obtained from published sources, such as company annual reports. For purposes of ranking in this report, Newmont's operations in Eureka County—Carlin East, Deep Post, Gold Quarry, and Pete Mines—were treated as a single operation.

**Alaska.**—The State's Division of Geology and Geophysical Surveys reported that gold output increased to 22,600 kg valued at \$511 million in 2007 from 17,700 kg valued at \$344 million in 2006, or an increase in production of 28% and an increase in value of 49% (Szumigala and Hughes, 2008, p. 12–15).

The Pogo Mine, located 145 kilometers (km) southeast of Fairbanks, was completed in 2006, and was a joint venture between Sumitomo Metal Mining Co. Ltd. (Tokyo, Japan) (51%), Teck Cominco Ltd. (Vancouver) (40%), and Sumitomo Co. (Tokyo) (9%), and operated by Teck Cominco. The company produced 8,090 kg of gold in 2007, well below the planned capacity of 10,600 kg of gold. Gold production has been low owing to construction of new filters and equipment problems at the mine and mill (Teck Cominco Ltd., 2008, p. 46).

The underground Fort Knox gold mine, owned by Kinross, near Fairbanks produced 10,500 kg gold equivalent (includes other metals) in 2007, slightly more than production in 2006, making it the country's eighth ranked gold mine (Kinross Gold Corp., 2008, p. 8). The U.S. Army Corp of Engineers issued the final permit needed to start using large amounts of cyanide in a heap-leaching facility. The mine was originally slated to close

in 2010; however, with this decision, the mine was expected to continue operation until 2014, and the gold production from leach pads, until 2019. The company has been stockpiling low-grade ore and will begin construction of leach pads sometime in summer 2008 (Mining Engineering, 2007).

The Greens Creek Mine, on Admiralty Island near Juneau, was one of the leading silver mines in the country. Ore from the underground mine was milled at the mine site. The smelter produced gold and silver dore, lead, zinc, and bulk concentrates. Greens Creek was a joint venture between Kennecott Greens Creek Mining Co. (70.27%) and Hecla Mining Co. (Coeur d'Alene, ID) (29.73%) and has estimated gold reserves of 27,000 kg. Hecla reported that the mine produced 1,950 kg of gold in 2007, slightly less than production in 2006. Hecla reached an agreement with Rio Tinto plc (London), Kennecott's parent company, to purchase Kennecott's 70.27% share of the mine (Hecla Mining Co., 2008, p. 6, 7, 17).

The Nixon Fork Mine, owned by St Andrew Goldfields Ltd. (Oakville, Ontario, Canada), started production in the first part of 2007; however, the company encountered production problems when the deposit geometry did not match the deposit model. Milling operations were shutdown on August 14, and production was suspended on October 10. In 2007, the mine produced 210 kg of gold, and St Andrew was trying to sell the property (St Andrew Goldfields Ltd., 2008, p. 1–8).

The number of Alaskan placer operations that produced gold decreased to 175 in 2007 from 201 in 2006. Placer production in 2007, which was included in the data reported by the State, decreased by 11% to 1,670 kg from 1,880 kg of gold in 2006. Many new operations were discontinued because operational costs rose faster than the gold price. In 2007, there was only one underground placer operation, Silverado Gold Mines Ltd.'s (Vancouver) Nolan Creek operations in the Brooks Range, which produced 116 kg of gold in 2007. Recreational mining increased owing to higher gold prices and accounted for 59 kg of gold in 2007, a 41% increase as compared with production in 2006 (Szumigala and Hughes, 2008, p. 12–15).

Construction on Coeur d'Alene Mines Corp.'s (Coeur d'Alene) Kensington project continued through 2007; however, construction of the tailings facilities remained suspended pending an appeal filed with the U.S. Federal District Court. The mine has reserves of 42,100 kg of gold (Coeur d'Alene Mines Corp., 2008, p. 5).

NovaGold Resources Inc. (Vancouver) was developing three projects—Big Hurrah, Nome Gold, and Rock Creek—all near Nome on the Seward Peninsula. In 2007, construction continued on the Big Hurrah and Rock Creek projects, although it was delayed because of bad weather, equipment problems, permit challenges, resources constraints, and other factors. The combined probable reserves were estimated to be 15,900 kg of gold. The company planned to commission the operations in 2008, and production capacity was estimated to be 3,000 kilograms per year (kg/yr). The Nome Gold alluvial sand and gravel project had estimated indicated resources of 49,000 kg of gold (NovaGold Resources Inc., 2008, p. 8–11).

In 2007, there were 30 exploration projects that had a total budget of \$1 million or more, and 45 additional projects had exploration budgets of \$100,000 or more. Exploration

expenditures rose by 78% to \$318 million in 2006, with 55% of the exploration in southwestern Alaska. Many of the companies in Alaska were looking for gold or copper-gold deposits (Szumigala and Hughes, 2008, p. 2–3).

Advanced exploration projects were the copper-gold porphyry Pebble project near Iliamna and the Dolin Creek gold project near Aniak. On July 31, Anglo American PLC (London) and Northern Dynasty Minerals Ltd. (Vancouver) became 50% partners in the Pebble copper-gold-molybdenum project. The project, which included high-grade underground Pebble East and open pit Pebble West, was estimated to have inferred resources of 2,550 t of gold, 30 million metric tons (Mt) of copper, and 2.4 Mt of molybdenum (Northern Dynasty Minerals Ltd., 2007; Szumigala and Hughes, 2008, p. 2–3, 7–8).

In 2007, Barrick launched an unsuccessful takeover bid for NovaGold, and NovaGold filed a legal case against Barrick. By November, the two companies had settled their differences and agreed to develop the 50:50 Donlin Creek joint venture. The project has an indicated gold resource of 914,000 kg and was scheduled to commence production by 2015 (Szumigala and Hughes, 2008, p. 2–3, 7–8).

**Arizona.**—In 2007, all gold was recovered as a byproduct from copper mining and processing. Several companies conducted exploration projects. American Bonanza Gold Corp. (Vancouver) completed the second phase of drilling and discovered another gold target at the Copperstone underground gold project in La Paz County (American Bonanza Gold Corp., 2007).

**California.**—According to the California Geological Survey, in 2007, the State produced 603 kg of gold, a 10% decrease as compared with 2006 gold production of 672 kg. Production was from existing leach pads at Western Gold Fields Inc.'s (Toronto) Mesquite Mine and Canyon Resources Corp.'s (Golden, CO) Briggs Mine. These mines ceased operations in 2001 and 2004, respectively, but were still processing stockpiled ore and mine waste in 2007. Gold was also produced by Cal Sierra Development Inc.'s (Marysville, CA) Yuba River gold dredging operations. Other operations produced gold as a secondary product in 2007, mainly from placer sand and gravel mines and several small underground mines that primarily produced specimen gold products (Kohler, 2008).

Western Gold Fields started new mine activities and plans to resume open pit mining at its Mesquite Mine. Production of gold was expected to take place in early 2008, and the company expected full production to be 5,000 kg/yr. Exploration drilling was expected to continue, so the current gold reserves of 87,000 kg of gold could change (Kohler, 2008).

Canyon Resources announced it was beginning a drilling program for its unpermitted Cecil R gold deposit located 6 km north of the Briggs Mine. The company has two more exploration drilling programs near the Briggs Mine. The company planned to restart operations at the fully permitted Briggs Mine in 2008 or 2009. Sutter Gold Mining Inc. (Riverton, WY) concluded phase I and began phase 2 for the proposed Sutter Gold underground mine, which includes the historic Lincoln Gold Mine located along California's Mother Lode belt. Emgold Mining Corp. (Grass Valley, CA) continued the permitting process to reopen the historic Idaho-Maryland

Gold Mine, which has estimated resources of 14,700 kg of gold (Kohler, 2008).

**Colorado.**—In 2007, Colorado remained the fourth ranked gold-producing State in the country, according to the Colorado Geological Survey, although production fell to 8,770 kg, 8% less as compared with production in 2006 (Burnell and Carroll, 2008). The Nation's ninth ranked gold mine, the Cresson Mine [owned by Cripple Creek & Victor Gold Mining Co. (CC&V), of which AngloGold holds a 67% interest and Golden Cycle Gold Corp. (Colorado Springs, CO) holds the remainder] reported that its open pit operation produced 8,770 kg of gold in 2007, slightly less than that of 2006, owing to the vertical height of the leach pads. In 2008, CC&V expected production to increase to between 9,000 and 9,300 kg. AngloGold announced plans to acquire Golden Cycle Gold by the second quarter of 2008, gaining full ownership of CC&V (AngloGold Ashanti Ltd., 2008, p. 96–98).

Global Minerals, Ltd. (Vancouver) started production in 2007 at the Cash Mine, which was the State's only other gold producer, and produced a small amount of gold. LKA International Inc.'s (Gig Harbor, WA) Golden Wonder Mine in the San Juan Mountains stopped producing gold in the second quarter of 2006 and did not produce any gold in 2007. The company planned to restart the small, high-grade underground mine near Lake City, which began limited operations in 1998 (Burnell and Carroll, 2008).

As with other areas, Colorado continued to see an increase in exploration and development. Global Minerals continued to develop the Rex Mines in the Gold Hill district west of Boulder. Wits Basin Precious Minerals Inc. (Minneapolis, MN) possessed active mining and water discharge permits for a 70,000-metric-ton-per-year operation at Bates-Hunter and was investigating the possibility of restarting the mine. Calais Resources Ltd. (Nederland, CO) continued work on its Consolidated Caribou (gold, silver, and base metals) project located within the northeast-trending Colorado mineral belt and identified more than 12,000 kg of gold and 389,000 kg of silver resources (Burnell and Carroll, 2008).

**Idaho.**—Idaho had limited gold production in 2007, and several new mines were in various stages of development. New Jersey Mining Co. (Kellogg, ID) had no fewer than six projects in development in 2007. Many of these were silver or gold-silver deposits in the Coeur d'Alene region in northern Idaho. In addition to New Jersey Mining, there were eight other companies with projects with associated gold in early development stages in 2007 (Gillerman and Bennett, 2008).

**Montana.**—On March 1, the open pit polymetallic Montana Tunnels Mine near Jefferson City recommenced operations and achieved an average production rate of 13,500 metric tons per day of ore. In 2007, the mine, a 50:50 joint venture with Elkhorn Tunnels, LLC (Aspen, CO) and Apollo Gold Corp. (Greenwood Village, CO), produced 1,040 kg of gold, 7,810 kg of silver, 2,540 t of lead, and 5,390 t of zinc. The mine had been closed since October 2005 because of pit wall failures (Apollo Gold Corp., 2008, p. 5).

Barrick's Golden Sunlight Mine produced 6,160 kg of gold, 104% more than the low level in 2006. Production in 2006 was low because of ground instability that limited access to higher

grade ore. Barrick announced that production in 2008 was expected to be lower than that in 2007 because the mine is near the end of its mine life (Barrick Gold Corp., 2008, p. 51).

The State has had a reputation for unprofitable mining because of the ban on cyanide use in open pit mining. Permitting has been slow, but the State has completed permits for many projects and expects more projects in the next 2 years (McCulloch, 2008).

**Nevada.**—Gold production decreased by 5% to 188,000 kg, but Nevada kept its longstanding position as the Nation's leading gold-producing State and trailed only South Africa, China, and Australia based on 2007 world production data. Of the Nation's top 30 gold-producing mines, 21 were in Nevada (table 3). According to the State of Nevada, 22 mines reported gold production in 2007 (Nevada Bureau of Mines and Geology, 2008, p. 3–5, 14–19).

Barrick produced 85,400 kg, or 45% of the State's gold production, with production from its fully owned Bald Mountain, Betze-Post, Meikle, and newly opened Ruby Hill Mines; 60%-owned Cortez Mine (40% owned by Kennecott Gold Corp.); 75%-owned joint-venture Turquoise Ridge Mines (25% owned by Newmont); 50%-owned Smoky Valley Common Operation (50% owned and operated by Kinross); 60%-owned Rossi/Storm (40% owned by Yamana); and 33.33%-owned Marigold Mine [67.67% owned and operated by GoldCorp Inc. (Vancouver)]. Combined production at the Betze-Post and Meikle Mines decreased by 13%, 7,340 kg of gold less than that in 2006, and was a reason for the overall decrease in Nevada's gold production. The decrease was attributed to more waste rock removal for mine development and mining of lower grade ore. In 2007, other Barrick mines were similarly affected by lower ore grades and production decreases, such as at Bald Mountain (production decreased by 56% compared with that of 2006), Marigold (decreased by 6%), Smoky Valley Common Operation (decreased by 15%), and Turquoise Ridge (decreased by 5%). These decreases were partially offset by production from two new mines, Ruby Hill and Rossi/Storm, and a 21% increase in gold production from the Cortez Mine. Barrick spent \$88 million on developing the Cortez Hills Mine in Lander County. The mine was expected to receive the record of decision in 2008 and start production 15 months later. The mine would have production capacity of 30,000 kg/yr of gold and proven and probable reserves of 358,000 kg of gold (Barrick Gold Corp., 2008, p. 16–18).

Newmont produced 72,800 kg, or 39% of Nevada's gold production, from nine open pits and five underground mines. The operations were Lone Tree, Midas, Mule Canyon, Phoenix, Trenton Canyon, Twin Creeks, and Turquoise Ridge (25% share) Mines and the Eastern Nevada Operations (Driesner and Coyner, 2008, p. 5–22). The operations at the Midas Mine were suspended after a fatal accident in June, but the restriction order issued by the Mine Safety and Health Administration was lifted in October, and production was expected to return to normal levels in 2008. Along with the reduction from the Midas Mine, mining was completed at Lone Tree, and lower grade ore was milled at the Eastern Nevada Operations; however, these production losses were partially offset by increased production from the Phoenix and Twin Creeks Mines (Newmont Mining Corp., 2008, p. 18–28, 57).

Yukon-Nevada Gold Corp. decided to extend the care-and-maintenance cycle at the Jerritt Canyon Mine and mill because of historical underinvestment in these areas. The mill was shutdown for an extended period of time, and gold production was down by 28% compared with production in 2006. As of the end of 2007, the proven and probable reserves were 20,900 kg of gold (Yukon-Nevada Gold Corp., 2008, p. 17–20).

In 2007, the Robinson copper mine near Nye, owned by Quadra Mining Ltd. (Vancouver), produced 59,800 t of copper and 3,360 kg of gold. The company projected that production would be 59,000 t of copper and 3,100 kg of gold in 2008 (Quadra Mining Ltd., 2008, p. 1, 7).

The Rochester silver and gold mine, owned by Coeur d'Alene Mines, produced 143,000 kg of silver and 1,570 kg of gold. In August, the company completed mining the existing reserves; however, gold and silver production was expected to continue until 2011. The company planned to continue to explore in and around the Rochester Mine (Coeur d'Alene Mines Corp., 2008, p. 21–23).

Jipangu Inc. (Tokyo) announced that reserves for the Florida Canyon and Standard Mines were increased to 29,700 kg and 12,400 kg, respectively (Jipangu Inc., 2008).

Exploration continued to increase in the State as companies searched for high-grade veins in and around old districts. In 2007, the State of Nevada had almost 213,000 mining claims, an 18% increase compared with those in 2006. At least 119 projects were drilled by 53 junior companies, and 66 projects developed by 11 major or midtier companies were recorded in 2007. Only 16 projects targeted metals other than gold, and most were near existing mines (Muntean and Castor, 2008).

**New Mexico.**—Gold production of 419 kg in 2007 was as a byproduct of copper production at Freeport McMoRan's Ivanhoe concentrator. Several gold projects were under development or being explored (Lucas Kamat S.A., 2008).

**South Dakota.**—Goldcorp owned and Wharf Resources Inc. (Lead, SD) operated the Wharf open pit gold mine near Lead, which produced about 1,790 kg of gold. The company continued exploration near the mine to extend the mine's life (Holm and others, 2008).

**Utah.**—Rio Tinto's Bingham Canyon Mine, which was operated by Kennecott Utah Copper Corp. (Magna, UT), produced 12,300 kg of gold as a byproduct from its copper mining operations near Salt Lake City. Bingham Canyon remained the fourth-ranked gold producer in the Nation and the leading gold-producing mine outside Nevada in 2007 even though gold production decreased by 24% compared with that of 2006. In 2007, Kennecott also operated the nearby Barney's Canyon Mine, which had closed in the first quarter of 2002 but continued gold production from heap-leaching pads that produced 342 kg of gold (Rio Tinto plc, 2008, p. 10).

Exploration for gold and silver continued to increase, and activities were largely focused in the western part of the State. Many copper exploration projects can also produce gold as a byproduct and could add gold resources to the State's total (Bon and Krahulec, 2008).

**Washington.**—Kinross completed 78% of the construction on the underground Buckhorn Mine in the north-central part of the State; the mine was scheduled to start production in October

2008 and would feed the Kettle River Mill adjacent to the closed Kettle River Mine, which was about 76 km from the Buckhorn Mine. The project was to have an estimated production of 777 to 933 kg in 2008, and gold reserves were estimated to be 30,800 kg (Kinross Gold Corp., 2008, p. 29).

## World Review

World gold mine production in 2007 was slightly lower than that in 2006. Mine production of gold decreased by 32,700 kg in Peru, 23,400 kg in South Africa, 19,800 kg in the United States, 6,810 kg in Tanzania, 4,600 kg in Zimbabwe, 3,110 kg in Mali, 2,560 kg in Mongolia, 2,430 kg in Russia, and 2,070 kg in Canada. These decreases were partially offset as gold production increased by 30,000 kg in China, 24,700 kg in Indonesia, 3,380 kg in Ghana, 2,650 kg in the Philippines, 2,060 kg in Guatemala, 2,000 kg in Kazakhstan, and 1,680 kg in Mauritania. In 2007, the top 11 gold producing countries—China, South Africa, Australia, the United States, Peru, Russia, Indonesia, Canada, Uzbekistan, Ghana, and Papua New Guinea (in descending order)—accounted for 76% of global production. The next 10 leading gold producing countries accounted for another 15%, while the remaining 71 countries made up the last 9% of global gold production in 2007.

According to its annual review of world gold supply and demand, Gold Fields Mineral Services Ltd. (GFMS) calculated that the total global supply of gold in 2007 was 3,910 t compared with the revised 2006 total supply of 3,980 t. GFMS also reported decreases in old scrap production (15%) and mine production (less than 3%), no net producer hedging, and no implied net disinvestment for sales of bars and coins by private investors. Official sector sales increased by 30% in 2007 compared with 2006 official sector sales (Klapwijk and others, 2008, p. 7).

On the consumption side, GFMS reported that total fabrication in 2007, including the use of scrap, was 3,070 t, 5% higher than that of 2006. In 2007, gold consumption in jewelry fabrication was 2,400 t, 5% higher than that of 2006. The top five gold jewelry manufacturing countries—in descending order, India (688 t), China (327 t), Turkey (277 t), Italy (218 t), and the United States (180 t)—represented 55% of the world's jewelry production. In 2007, China, Turkey, and India increased production by 21%, 14%, and 8%, respectively, compared with production in 2006. In contrast, the North American and European markets were down by 13% and 5%, respectively, because of the reduction of jewelry manufacturing in Italy, the United Kingdom, and the United States, which was attributed to increased gold prices. In 2007, coin fabrication was 137 t, up by 6% compared with that of 2006. In 2007, the U.S. Mint sales of the Buffalo and Eagle gold coins were 48% and 24%, lower, respectively, compared with sales in 2006. Higher coin sales in China and South Africa, however, were more than enough to balance the reductions in the United States.

The amount of gold used in electronics rose slightly to 311 t, which reflected a growth in electronic applications in Japan, the Republic of Korea, Singapore, and Taiwan, and was offset by a 13% contraction of the United States market in 2007. Gold used in dentistry declined for the fourth year in a row to

58 t in 2007, owing to a reduction in use in the United States because of higher gold prices. Other industrial and decorative uses increased by 2%. Gold used in medals and for imitation coins increased by 24% because of the popularity of inexpensive gold pieces in India (Klapwijk and others, 2008, p. 78–106).

**Australia.**—Australian gold production in 2007 decreased slightly to 246,000 kg as production from new or restarted mines replaced some of the lower production from older mines. The View Resources Ltd.'s (West Perth, Western Australia) Bronzewing Mine restarted in the second quarter of 2007 (Gooch, 2007). Monarch Gold Mining Ltd.'s (West Perth) Davyhurst Mine commenced mine operations in June (Monarch Gold Mining Ltd., 2008, p. 3). The Laverton Mine, owned by Crescent Gold Ltd. (Perth, Western Australia), poured the first gold bar on March 21 (Crescent Gold Ltd., 2007, p. 9). Mercator Gold Plc. (London) began production at its Meekatharra Mine in October (Mercator Gold Plc., 2008, p. 3–5). GBS Gold International Inc. (Toronto) commenced commercial production on April 1 at the Union Reefs Operations and produced 2,490 kg of gold (GBS Gold International Inc., 2008, p. 1–2).

In 2007, Barrick had nine operations in Australia. The Granny Smith and Kanowna Mines produced 4,320 kg and 4,480 kg, respectively, less gold in 2007 compared with production in 2006 because of a transition to underground mining. Other Barrick mines produced less gold in 2007 compared with 2006 production—Plutonic decreased by 902 kg, Darlot decreased by 529 kg, Kalgoorlie Joint Venture decreased by 529 kg, and Henty decreased by 62 kg. The Cowal Mine, which began production in 2006, had a full year of production and produced 7,470 kg of gold in 2007, a 3,670-kg increase from 2006 production. The remaining mines, Osborne and Lawlers, produced 373 kg and 156 kg more gold, respectively, in 2007 than in 2006 (Barrick Gold Corp., 2008, p. 44–45).

In 2007, AngloGold's Sunrise Dam Gold Mine produced 18,700 kg of gold, an increase of 29% compared with 2006 gold production. The mine consists of an open pit and an underground mine, and in 2007, ore produced from the pit was a higher grade than anticipated (AngloGold Ashanti Ltd., 2008, p. 74–75).

Newcrest Mining Ltd. operated four mines in 2007. The Cadia Hill Mine produced 11,600 kg of gold, a 107% increase compared with 2006 production. The Ridgeway and Telfer Mines produced 10% and 6% more gold, respectively, and 70%-owned Cracow produced 8% more gold compared with gold produced in 2006 (Newcrest Mining Ltd., 2007a–c; 2008).

**Canada.**—Canada ranked eighth in world gold production, because its output decreased slightly to 101,000 kg, the lowest level in 20 years (table 8). Goldcorp operated three mines in Ontario—the Musselwhite, Porcupine, and Red Lake Mines. In 2007, the Red Lake Mine produced 21,800 kg of gold in 2007, a 5% increase compared with 2006 production, and the Porcupine Mine produced about the same as 2006. On December 21, Goldcorp acquired Kinross's 32% interest and became the sole owner of the Musselwhite Mine, which in 2007 produced about 7,000 kg of gold (Goldcorp Inc., 2008, p. 8).

In 2007, Barrick's Eskay Creek Mine produced 2,120 kg of gold, 40% lower than that in 2006, and Barrick's and Teck Cominco's Hemlo joint operation produced 10,500 kg of gold,

an 18% drop compared with 2006 production (Barrick Gold Corp., 2008, p. 42).

Other mines that had reduced production in 2007 compared with that in 2006 were Agnico-Eagle Mines Ltd.'s (Toronto) LaRonde Mine (6% lower), IAMGOLD Corp.'s (Toronto) Doyon Mine (14% lower), Inmet Mining Corp.'s (Toronto) Troilus Mine (6% lower), and NorthGate Minerals Corp.'s (Vancouver) Kemess South (21% lower) (Agnico-Eagle Mines Ltd., 2008, p. 9–11; IAMGOLD Corp., 2008, p. 46; Inmet Mining Corp., 2008, p. 22–23; Northgate Minerals Corp., 2008, p. 8). These reductions were partially offset by a first full year of production from Aurizon Mines Ltd.'s (Vancouver) Casa Berardi Mine, which started production in December 2006 and produced 7,190 kg of gold in 2007 (Aurizon Mines Ltd., 2008, p. 7–8).

**China.**—With a 12% increase in gold production in 2007, China was the leading gold producer in the world. In 1990, China first produced more than 100,000 kg of gold, and since that time, annual production has only declined once—in 1999. In 2007, China's gold production has grown by 175% compared with production in 1990, and the trend was projected to continue in 2008 (China Metal Market, 2008, p. 1–2).

China was not only a major producer of gold, but in 2007, the country became the second leading jewelry consumer in the world, following India and overtaking the United States. In 2007, China consumed 327,000 kg of gold, up by 26% compared with 2006 consumption figures (World Gold Council, 2008).

**Fiji.**—The country's only commercial gold mine was placed on care-and-maintenance status in late 2006 and produced very little gold in 2007; however, the company planned to recommission the mine. On March 30, Emperor Mines Ltd. sold the Vatukouli Mine to Westech International Inc. (Sydney) (World Gold Council, 2007).

**Ghana.**—The first full year of production from Newmont's Ahafo Mine resulted in a significant increase in Ghana's gold production to 77,300 kg. Other gold operations had lower production because of power shortages owing to drought conditions and lower grades (Klapwijk and others, 2008, p. 39).

**Guatemala.**—In 2007, Guatemala's only gold producing mine, Goldcorp's Marlin Mine, produced 7,100 kg of gold, 41% more than 2006 gold production (Goldcorp Inc., 2008, p. 12).

**Indonesia.**—In 2007, gold production rose to 118,000 kg, a 26% increase compared with revised 2006 gold production. The two leading gold producers, which were copper mines that produced byproduct gold, Freeport McMoRan's Grasberg and Newmont-operated Batu Hijau Mines represented 58% and 14% of gold production in 2007, respectively, and production increased by 27% and 22% compared with that of 2006, respectively (Freeport-McMoRan Copper & Gold Inc., 2008, p. 15; Newmont Mining Corp., 2008, p. 21–22). Other mines were Newcrest Mining Ltd.'s (Melbourne, Victoria, Australia) Gosowong, Straits Resources Ltd.'s (West Perth) Mt Muro, PT Antam Tbk's (Jakarta, Indonesia) Pongkor, and Avocet Mining Plc.'s (London) North Lanut Mines.

**Mali.**—AngloGold (Johannesburg) had interests in three gold mines in Mali—Morila, owned with Randgold Resources (St. Helier, Jersey Island, United Kingdom) (40%) and the Government of Mali (20%); Sadiola owned with IAMGOLD

(38%), the Government of Mali (18%), and International Finance Corporation (6%); and Yatela, owned with IAMGOLD (40%) and Government of Mali (20%). In 2007, these mines produced 34,800 kg of gold, accounting for more than 70% of the total gold mined in Mali; this was an 18% decrease from gold produced in 2006. Lower grade ore from Morila in the early part of the year resulted in an overall decrease in production. In the first quarter of 2007, the plant at Sadiola was optimized to improve recovery rates from sulfide ore. The company stockpiled high-grade sulfide ore until the optimization was completed. The ore was exhausted from the main pit at the Yatela Mine in July, after which lower grade stockpiles were used as feedstock (AngloGold Ashanti Ltd., 2008, p. 88–91).

**Mauritania.**—New production from Red Back Mining Inc.'s (Vancouver) Tasiast project and the first full year of production from First Quantum Minerals Ltd.'s (Vancouver) Guelb Moghrein copper-gold operations increased the gold production to 2,000 kg in 2007 (Klapwijk and others, 2008, p. 40).

**Papua New Guinea.**—Production from Papua New Guinea mines decreased slightly in 2007 compared with that of 2006. Barrick purchased 20% more of the Porgea Mine to bring its ownership to 95%. Production at the mine was down slightly because the mine was closed for 10 days and underwent remediation of the west pit wall (Barrick Gold Corp., 2008, p. 32, 45). In 2007, Lihir Gold Ltd. produced 21,800 kg of gold, 8% more than that of 2006 (Lihir Gold Ltd., 2008, p. 13).

**Peru.**—In 2007, production of gold in Peru decreased by 16% to 170,000 kg compared with revised production of 203,000 kg in 2006 and remained the fifth ranked gold producing country in the world. The Newmont and Compañía de Minas Buenaventura S.A.A. (Lima) jointly owned Yanacocha Mine in the Cajamarca District produced 48,700 kg of gold, 40% less than that in 2006. The lower production was a result of processing lower grade ore and increasing stripping ratios (Newmont Mining Co., 2008, p. 19–26). In 2007, Barrick's Peru operations, Lagunas Norte and Pierina, produced 50,000 kg of gold, slightly more than that in 2006 (Barrick Gold Corp., 2008, p. 43–44). Compañía de Minas Buenaventura S.A.A. owned five mines that produced 12,600 kg in 2007, about the same as 2006 (Compañía de Minas Buenaventura S.A.A., 2008, p. 31).

**Philippines.**—In 2007, production rose by 7% compared with that of 2006 because of increased production from Philex Mining Corp.'s (Pasig City) Padcal copper mine; however, some of the increases were partially offset by production losses from some of the large-scale gold mines (Klapwijk and others, 2008, p. 44).

**Russia.**—Russian gold production in 2007 decreased to 157,000 kg, 2% lower than 2006 production. The leading gold producer in Russia was Polyus Gold Mining Co. (Moscow) with 37,800 kg of production, up slightly compared with 2006 production of 37,300 kg. As of December 31, Polyus's proven and probable gold reserves were 2,130 t (reported as 68.6 million troy ounces) (Polyus Gold Mining Co., 2008, p. 4–10).

In 2007, Peter Hambro Mining Plc. (London) accounted for 9,880 kg of gold, up by 14% compared with production in 2006. Much of the production increases were from the Pokrovskiy Rudnik, which in 2007 increased production by 15%. The company also owned one mine and was involved in several

joint-venture mines (Peter Hambro Mining Plc., 2008, p. 15–20).

Production from JSC Polymetal's (St. Petersburg) four gold-silver mines dropped by 6% to 7,500 kg in 2007 compared with production in 2006. Polymetal announced that the proven and probable reserves from these four producing mines were 112,000 kg of gold (JSC Polymetal, 2008, p. 5, 26).

**South Africa.**—In 2007, three companies operated mines that accounted for more than 75% of South African gold production. They were, in descending order, AngloGold, Harmony Gold Mining Co. Ltd. (Randfontein, South Africa), and Gold Fields. Overall in 2007, South Africa's gold production of 252,000 kg decreased by 7% from that in 2006 owing to the higher production costs and processing lower ore grade, which dropped by an average of 10%. In addition, mine production was reduced because of temporary closure of shafts owing to mine accidents and implementation of new safety procedures. In 2007, 221 miners were killed, 11% more than 2006 fatalities. Authorities determined that many of the accidents were caused by operations not adhering to established safety procedures. Companies faced problems of finding and retaining enough trained labor force and competition with illegal miners. Throughout 2007, there were illegal and legal work stoppages over working conditions, safety, and pay, which also hampered gold production (Klapwijk and others, 2008, p. 37; CPM Group, 2008, p. 88–90).

**Tanzania.**—In 2007, production declined by 14% to 40,200 kg compared with revised 2006 production. Barrick's production was 22% lower in 2007 compared with 2006 production. Gold production at Bulyanahulu and North Mara was 26% and 36% lower, respectively; at Tulawaka, gold production was up by 28% in 2007 as compared with production in 2006. The combined effect of mining lower grade of ore and heavy rainfall in 2007, which caused pit wall instability, was responsible for the lower gold production at North Mara. Bulyanahulu production was down because of low ore grade and lower mining rates, which were affected by equipment availability, as well as labor disruptions (Barrick Gold Corp., 2008, p. 46).

AngloGold's Geita Mine produced 10,200 kg of gold in 2007, a 6% increase compared with production in 2006. However, production was still well below production of 19,100 kg in 2005 (AngloGold Ashanti Ltd., 2008, p. 94–95).

**United Kingdom.**—A first in almost two millennia, Galantas Gold Corp. (Toronto) opened a new gold mine in Northern Ireland; however, it only produced approximately 29 kg of gold in 2007. The gold produced was used in specialty Irish jewelry (Galantas Gold Corp., 2008).

**Uzbekistan.**—In 2007, gold production from Uzbekistan was estimated to have remained unchanged. In December, the Uzbek Government and Oxus Gold plc (London) Amantaytau joint venture announced the approval of an expansion project (Klapwijk and others, 2008, p. 45).

## Outlook

Worldwide consolidation of the gold industry was expected to continue as gold producers seek to secure their assets, increase gold reserves, cut costs, and exploit higher gold prices.

With the sixth straight year of price increases, exploration and development funding has increased. Several new mines were expected to open, and older mines could reopen or expand production in 2008. Even with new exploration and development during the past 5 years, new mines can take decades to begin operation at increased production costs. Current gold mines were expected to operate at higher production cost and lower ore grade. Gold production still was expected to remain relatively stable and may take years to significantly increase.

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

		2003	2004	2005	2006	2007
United States:						
Production:						
Mine:						
Quantity	kilograms	277,000	258,000	256,000	252,000	238,000
Value	thousands	\$3,250,000	\$3,400,000	\$3,670,000	\$4,910,000	\$5,350,000
Gold recovered by cyanidation:						
Extracted in vats, tanks, closed containers <sup>2</sup>	kilograms	89,000	9,940	W	W	W
Leached in open heaps or dumps <sup>3</sup>	do.	174,000	234,000	229,000	217,000 <sup>r</sup>	207,000
Refinery:						
Concentrates and dore	do.	194,000	222,000	195,000	181,000	176,000
Recycled materials (new and old scrap)	do.	89,100	91,700	81,300	89,100	135,000
Exports, refined	do.	220,000	114,000	182,000	228,000	392,000
Imports for consumption, refined	do.	152,000	139,000	105,000	136,000	113,000
Net deliveries from foreign stocks in Federal Reserve Bank of New York						
	do.	55,000	3,000	--	--	189,000
Stocks, December 31:						
Industry <sup>4</sup>	do.	3,590	1,080	2,040	2,000	1,140
Gold exchange traded funds holdings, United States only	do.	--	94,900	285,000	498,000	683,000
Commodity Exchange (COMEX) <sup>5</sup>	do.	97,100	180,000	211,000	234,000	229,000
U.S. Department of the Treasury	metric tons	8,140	8,140	8,140	8,140	8,140
U.S. Gold Futures Trading <sup>6</sup>	do.	38,000	46,500	49,400	49,500	77,900
Consumption:						
American Buffalo Gold Bullion Coin, minted <sup>7</sup>	kilograms	--	--	--	10,500	4,250
American Eagle Gold Bullion Coin, minted <sup>7</sup>	do.	15,500	15,800	13,800	9,770	12,800
In industry and the arts	do.	183,000	185,000	183,000	185,000	180,000
Price, average <sup>8</sup>	dollars per troy ounce	364.80	410.52	446.20	605.83	698.95
Employment, mine and mill only <sup>9</sup>		7,300	7,550	7,910	8,350	9,130
World:						
Production, mine	kilograms	2,540,000 <sup>r</sup>	2,420,000 <sup>r</sup>	2,480,000 <sup>r</sup>	2,370,000 <sup>r</sup>	2,340,000 <sup>e</sup>
Official bullion reserves <sup>10</sup>	metric tons	31,800	31,400	30,800	30,400	29,900

<sup>6</sup>Estimated. <sup>7</sup>Revised. do. Ditto. W Withheld to avoid disclosing company proprietary data. -- Zero.

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

<sup>2</sup>May include small quantities recovered by gravity methods.

<sup>3</sup>May include tailings, waste-ore dumps, and previously mined ore at some inactive mines.

<sup>4</sup>Unfabricated refined gold held by refiners, fabricators, dealers, and the U.S. Department of Defense.

<sup>5</sup>Commodity Exchange (COMEX) Division of the New York Mercantile Exchange.

<sup>6</sup>COMEX only.

<sup>7</sup>Data from U.S. Mint.

<sup>8</sup>Engelhard Corp. industries quotation.

<sup>9</sup>Data from the Mine Safety and Health Administration.

<sup>10</sup>Held by central banks, governments, and international monetary organizations. Data from the International Monetary Fund.

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

(Kilograms)

State	2006	2007
Nevada	206,000	186,000
Other States <sup>2</sup>	45,800	52,400
Total	252,000	238,000

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

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

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

Rank	Mine	County and State	Majority owner	Quantity (kilograms)
1	Eastern Nevada Operations <sup>2</sup>	Eureka, NV	Newmont Mining Corp.	41,100
2	Betze-Post	do.	Barrick Gold Corp.	37,800
3	Smoky Valley Common Operation	Nye, NV	Kinross Gold Corp.	18,300
4	Cortez	Lander, NV	Barrick Gold Corp.	16,700
5	Twin Creeks	Humboldt, NV	Newmont Mining Corp.	15,200
6	Meikle	Elko, NV	Barrick Gold Corp.	12,900
7	Bingham Canyon <sup>3</sup>	Salt Lake, UT	Kennecott Utah Copper Corp.	12,300
8	Fort Knox <sup>4</sup>	Fairbanks North Star, AK	Kinross Gold Corp.	10,500
9	Cresson	Teller, CO	Cripple Creek & Victor Gold Mining Co.	8,770
10	Pogo	Southeast Fairbanks, AK	Teck Cominco Inc.	8,080
11	Turquoise Ridge	Humboldt, NV	Barrick Gold Corp.	7,810
12	Golden Sunlight	Jefferson,, MT	do.	6,160
13	Lone Tree	Humboldt, NV	Newmont Mining Corp.	5,690
14	Phoenix	Lander, NV	do.	5,640
15	Ruby Hill	Eureka, NV	Barrick Gold Corp.	4,440
16	Marigold	Humboldt, NV	Goldcorp Inc.	4,380
17	Bald Mountain	White Pine, NV	Barrick Gold Corp.	3,920
18	Jerritt Canyon	Elko, NV	Yukon-Nevada Gold Corp. <sup>5</sup>	3,790
19	Robinson	White Pine, NV	Quadra Mining Ltd.	3,360
20	Midas	Elko, NV	Newmont Mining Corp.	2,460
21	Greens Creek	Juneau, AK	Kennecott Greens Creek Mining Co.	2,120
22	Wharf	Lawrence, SD	Wharf Resources Inc.	1,800
23	Rochester	Pershing, NV	Coeur d'Alene Mines Corp.	1,570
24	Montana Tunnels	Jefferson, MT	Apollo Gold Corp.	1,040
25	Florida Canyon	Pershing, NV	Jipangu Inc.	993
26	Rossi/Storm	Elko, NV	Barrick Gold Corp.	881
27	Mule Canyon	Lander, NV	Newmont Mining Corp.	698
28	Denton-Rawhide	Mineral, NV	Kennecott Minerals Co.	610
29	Standard	Pershing, NV	Jipangu Inc.	367
30	Barney's Canyon	Salt Lake, UT	Kennecott Minerals Co.	342

do. Ditto.

<sup>1</sup>Data are rounded to no more than three significant digits; the mines on this list accounted for more than 99% of U.S. mine production in 2007.

<sup>2</sup>Includes Carlin East, Deep Post, Gold Quarry, and Pete Mines.

<sup>3</sup>Quantity refers to total quantity of gold produced in concentrates.

<sup>4</sup>Quantity refers to gold equivalent produced (that is, includes value of associated metals).

<sup>5</sup>Queenstake Resources Ltd. merged with YGC Resources Ltd. to form Yukon-Nevada Gold Corp. on June 20, 2007.

Sources: Company annual reports, company 10-K reports submitted to the Securities and Exchange Commission, company news releases, and Nevada Bureau of Mines and Geology.

TABLE 4  
U.S. EXPORTS OF GOLD, BY COUNTRY<sup>1,2</sup>

Year and country	Ores and concentrates <sup>3</sup>		Dore and precipitates		Refined bullion <sup>4</sup>		Total	
	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)
2006	2,690	\$31,800	159,000	\$2,670,000	228,000	\$4,380,000	389,000	\$7,090,000
2007:								
Australia	152	1,750	--	--	2,320	53,600	2,470	55,400
Austria	73	726	--	--	--	--	73	726
Bahamas, The	1	15	--	--	--	--	1	15
Bahrain	1	7	--	--	--	--	1	7
Belgium	99	1,150	--	--	59	801	158	1,950
Brazil	--	--	--	--	1	15	1	15
Cambodia	--	--	--	--	3	36	3	36
Canada	2	16	28	376	9,180	205,000	9,210	205,000
China	--	--	--	--	10	153	10	153
Costa Rica	--	--	--	--	390	5,580	390	5,580
Dominican Republic	113	1,470	--	--	14	209	127	1,680
France	1	12	--	--	--	--	1	12
Germany	474	6,510	--	--	189	3,500	664	10,000
Guatemala	48	567	--	--	145	2,070	194	2,640
Hong Kong	139	1,610	--	--	1,040	21,900	1,170	23,500
India	73	1,010	--	--	16,900	373,000	17,000	374,000
Indonesia	--	--	--	--	94	1,550	94	1,550
Ireland	130	1,160	--	--	5	67	135	1,230
Japan	16	165	--	--	498	10,800	514	10,900
Korea, Republic of	154	1,530	--	--	--	--	154	1,530
Latvia	24	236	--	--	--	--	24	236
Malaysia	--	--	--	--	980	16,300	980	16,300
Mexico	573	6,200	18	243	5,300	95,500	5,890	102,000
New Zealand	--	--	--	--	(5)	4	(5)	4
Oman	--	--	--	--	29	533	29	533
Pakistan	--	--	--	--	18	365	18	365
Qatar	--	--	--	--	7	112	7	112
Saudi Arabia	--	--	--	--	1,010	20,300	1,010	20,300
Singapore	18	143	--	--	6	135	24	278
Spain	1	13	--	--	--	--	1	13
Switzerland	775	7,890	123,000	2,740,000	142,000	3,200,000	266,000	5,940,000
Thailand	--	--	--	--	1,330	28,500	1,330	28,500
Trinidad and Tobago	--	--	--	--	19	377	19	377
Turkey	--	--	--	--	--	--	--	--
United Arab Emirates	2	21	--	--	20,000	428,000	20,000	428,000
United Kingdom	285	1,500	42	663	190,000	4,230,000	191,000	4,230,000
Vietnam	30	351	--	--	13	200	42	551
Total	3,180	34,100	123,000	2,740,000	392,000	8,700,000	519,000	11,500,000

-- Zero.

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

<sup>2</sup>Ash and residues data were zero for listed years.

<sup>3</sup>Includes base-metal ores, concentrates, and matte destined for refining.

<sup>4</sup>Bullion also moves in both directions between U.S. markets and foreign stocks on deposit in the Federal Reserve Bank. Monetary gold is excluded.

<sup>5</sup>Less than ½ unit.

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

Year and country	Waste and scrap		Metal powder		Gold compounds	
	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)
2006	567,000	\$1,270,000	1,320	\$25,400	1,460,000	\$28,100
2007:						
Armenia	--	--	183	3,640	--	--
Australia	--	--	2	17	--	--
Austria	2	48	--	--	35	4
Belgium	19,600	9,860	--	--	--	--
Brazil	--	--	1	9	--	--
Canada	235,000	1,250,000	59	1,110	447,000	8,040
China	--	--	(2)	4	509,000	9,700
Colombia	--	--	13	121	--	--
Cote d'Ivoire	--	--	--	--	17,900	322
Czech Republic	--	--	1	6	--	--
Denmark	--	--	--	--	1,210	22
Dominican Republic	--	--	17	379	122,000	2,180
France	--	--	12	156	--	--
Germany	156,000	152,000	72	1,470	8,900	125
Guatemala	688	7,040	--	--	--	--
Hong Kong	202	37	2	23	15,100	277
India	--	--	2	10	3,250	59
Indonesia	18	9	--	--	325	6
Ireland	--	--	--	--	7,410	133
Israel	--	--	2	37	46,900	844
Italy	2,860	525	(2)	7	--	--
Japan	547	11,000	24	359	6,230	112
Korea, Republic of	--	--	4	92	4,680	84
Malaysia	73	522	--	--	37,800	681
Mexico	50	9	7	94	102,000	1,830
Netherlands	--	--	--	--	4,690	84
New Zealand	--	--	--	--	2,940	54
Qatar	3,810	699	--	--	--	--
Singapore	--	--	48	654	688,000	13,400
Spain	102	19	2	25	--	--
Sweden	--	--	1	3	--	--
Switzerland	--	--	2	30	16,400	296
Taiwan	--	--	5	66	85,100	1,530
Trinidad and Tobago	--	--	--	--	3,760	27
Turkey	--	--	604	12,500	2,400	43
United Arab Emirates	--	--	3	65	--	--
United Kingdom	198,000	53,400	1,770	28,000	15,800	285
Total	616,000	1,480,000	2,840	48,900	2,150,000	40,100

-- Zero.

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

<sup>2</sup>Less than ½ unit.

Source: U.S. Census Bureau.

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

Year and country	Ores and concentrates <sup>2</sup>		Dore and precipitates		Refined bullion <sup>3</sup>		Total	
	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)
2006	1,090	\$12,600	125,000	\$1,990,000	136,000	\$2,550,000	263,000	\$4,550,000
2007:								
Armenia	--	--	--	--	4	87	4	87
Australia	34	354	7	114	37	678	79	1,150
Austria	--	--	--	--	4	47	4	47
Belgium	--	--	--	--	2	21	2	21
Bolivia	--	--	61	1,320	12	236	73	1,560
Brazil	--	--	--	--	2,210	50,300	2,210	50,300
Cameroon	--	--	--	--	20	358	20	358
Canada	411	2,010	154	1,100	76,600	1,710,000	77,200	1,720,000
Chile	--	--	14,400	251,000	3,980	86,800	18,400	337,000
Colombia	--	--	6,810	147,000	2,840	54,300	9,650	201,000
Costa Rica	--	--	598	6,460	10	99	608	6,560
Dominican Republic	--	--	11	141	16	220	27	361
Ecuador	--	--	2,070	41,200	--	--	2,070	41,200
El Salvador	--	--	--	--	131	1,580	131	1,580
Germany	--	--	7	70	39	854	46	924
Ghana	(4)	4	4	62	40	501	44	567
Guatemala	352	3,870	2,070	42,700	619	13,300	3,040	59,900
Guinea	--	--	--	--	55	838	55	838
Guyana	--	--	90	1,940	253	4,140	343	6,080
Honduras	4	42	3,840	69,400	49	1,130	3,900	70,600
Hong Kong	--	--	5	75	110	2,310	115	2,390
India	--	--	--	--	(4)	12	(4)	12
Israel	--	--	--	--	(4)	4	(4)	4
Italy	--	--	--	--	4	87	4	87
Jamaica	--	--	--	--	14	192	14	192
Korea, Republic of	--	--	--	--	24	570	24	570
Mali	--	--	--	--	4	41	4	41
Mexico	44	1,140	7,670	128,000	17,200	345,000	24,900	474,000
Netherlands Antilles	--	--	433	8,830	264	5,180	697	14,000
Nicaragua	--	--	1,440	23,500	146	2,270	1,590	25,700
Panama	--	--	642	8,400	215	3,090	857	11,500
Peru	--	--	15,500	305,000	3,810	83,700	19,300	388,000
Russia	--	--	--	--	6	172	6	172
Sweden	--	--	--	--	49	1,010	49	1,010
Switzerland	--	--	--	--	660	16,200	660	16,200
Tanzania	--	--	--	--	6	75	6	75
Turkey	--	--	--	--	17	386	17	386
United Arab Emirates	--	--	--	--	(4)	18	(4)	18
United Kingdom	--	--	191	1,090	3,960	51,200	4,150	52,300
Uruguay	--	--	--	--	22	465	22	465
Zaire	--	--	1	19	--	--	1	19
Total	845	7,420	56,000	1,040,000	113,000	2,440,000	170,000	3,490,000

-- Zero.

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

<sup>2</sup>Includes base-metal ores, concentrates, and matte destined for refining.

<sup>3</sup>Bullion also moves in both directions between U.S. markets and foreign stocks on deposit in the Federal Reserve Bank. Monetary gold is excluded.

<sup>4</sup>Less than ½ unit.

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

Year and country	Waste and scrap		Metal powder		Gold compounds	
	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)
2006	43,000	\$448,000	1,460	\$13,600	122,000	\$2,450
2007:						
Argentina	--	--	1	8	--	--
Aruba	4	41	--	--	--	--
Australia	--	--	3	10	--	--
Belgium	1	15	--	--	--	--
Bermuda	1	13	--	--	--	--
Brazil	--	--	--	--	118,000	2,060
Canada	2,740	29,500	60	667	7	6
Central African Republic	--	--	1	12	--	--
China	71	450	--	--	--	--
Colombia	7,840	132,000	--	--	--	--
Costa Rica	2,350	18,900	--	--	--	--
Czech Republic	1	8	--	--	--	--
Dominican Republic	10,700	137,000	45	357	--	--
Ecuador	131	1,330	--	--	--	--
El Salvador	1,350	11,100	--	--	--	--
France	1	8	(2)	9	--	--
Germany	17	146	51	580	9,160	271
Ghana	(2)	12	1	5	--	--
Guatemala	335	2,860	--	--	--	--
Guinea	--	--	6	50	--	--
Honduras	2,290	23,800	--	--	--	--
Hong Kong	4	31	--	--	--	--
India	10	233	--	--	--	--
Indonesia	--	4	--	--	--	--
Israel	2	40	125	1,700	--	--
Italy	96	889	5	54	--	--
Japan	2	28	(2)	6	4,860	241
Korea, Republic of	56	663	(2)	2	--	--
Liberia	--	--	8	102	--	--
Malaysia	301	3,500	--	--	--	--
Mali	--	--	3	27	--	--
Mexico	11,100	89,000	548	6,060	9,160	165
Netherlands	--	--	1	15	17,300	361
Netherlands Antilles	109	1,340	--	--	--	--
New Zealand	--	--	--	--	664	2
Nicaragua	407	4,150	--	--	--	--
Panama	1,200	14,600	--	--	--	--
Peru	13	50	--	--	--	--
Philippines	28	360	--	--	--	--
Sierra Leone	--	--	183	1,680	--	--
Singapore	201	3,580	--	--	--	--
South Africa	141	1,510	40	716	--	--
Spain	19	302	--	--	--	--
Switzerland	--	--	31	168	--	--
Taiwan	436	8,640	--	--	--	--
Thailand	62	753	--	--	--	--
Trinidad and Tobago	--	--	3	10	--	--
United Arab Emirates	(2)	7	--	--	--	--
United Kingdom	524	3,310	5	45	2,860	66
Venezuela	1	20	--	--	--	--
Total	42,600	490,000	1,120	12,300	162,000	3,170

-- Zero.

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

<sup>2</sup>Less than ½ unit.

Source: U.S. Census Bureau.

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

(Kilograms)

Country	2003	2004	2005	2006	2007 <sup>e</sup>
Algeria	365	597	697	377	236 <sup>3</sup>
Argentina	29,749	28,466	27,904	44,131 <sup>r</sup>	45,000
Armenia	1,800	2,100	1,400	1,400	1,400
Australia	282,000	259,000	262,000	247,000 <sup>r</sup>	246,000
Belize <sup>e</sup>	--	--	--	5 <sup>r,3</sup>	5
Benin <sup>e</sup>	20	20	20	20	20
Bolivia	9,362	6,951	8,871 <sup>r</sup>	9,628 <sup>r</sup>	10,000
Botswana	9 <sup>e</sup>	162	2,770	2,800 <sup>e</sup>	2,800
Brazil <sup>4</sup>	40,416	47,596	38,293 <sup>r</sup>	40,075 <sup>r</sup>	40,100 <sup>p</sup>
Bulgaria	2,142	2,431	3,868	3,818 <sup>r</sup>	3,000
Burkina Faso	770	1,125	1,397	1,571	1,600
Burma <sup>e</sup>	90 <sup>3</sup>	90	90	100 <sup>r</sup>	100
Burundi	2,855	3,229	3,905	4,313 <sup>r</sup>	2,423 <sup>3</sup>
Cameroon <sup>e</sup>	700 <sup>3</sup>	1,500	1,500	1,500	1,500
Canada	140,861	129,478	119,549	103,513 <sup>r</sup>	101,440 <sup>3</sup>
Central African Republic <sup>e</sup>	7 <sup>3</sup>	7 <sup>3</sup>	7	10 <sup>r</sup>	10
Chad <sup>e</sup>	150	150	150 <sup>r</sup>	150 <sup>r</sup>	150
Chile	38,954	39,986	40,447	42,100	41,527 <sup>3</sup>
China <sup>e</sup>	205,000	215,000	225,000	245,000	275,000
Colombia	46,515	37,738	35,783	15,680 <sup>r</sup>	15,480 <sup>p,3</sup>
Congo (Brazzaville) <sup>e</sup>	75	60	20	10	20
Congo (Kinshasa) <sup>e</sup>	8,900 <sup>r</sup>	10,500 <sup>r</sup>	9,000 <sup>r</sup>	10,000 <sup>r</sup>	10,000
Costa Rica <sup>e</sup>	110	150	424 <sup>r,3</sup>	1,210 <sup>r,3</sup>	712 <sup>3</sup>
Cote d'Ivoire	1,313	1,219	1,335 <sup>r</sup>	1,324 <sup>r</sup>	1,300
Cuba <sup>e</sup>	500	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>r</sup>	--
Ecuador <sup>5</sup>	4,819	5,128	5,338	5,168 <sup>r</sup>	3,186 <sup>3</sup>
Equatorial Guinea <sup>e</sup>	100	150	200	150	100
Eritrea	9	33	30	30 <sup>e</sup>	30
Ethiopia <sup>6</sup>	3,875	3,443	4,376	4,028	3,300
Fiji	3,519	3,731	2,793	1,430 <sup>e</sup>	16
Finland	5,409	5,004	5,000 <sup>e</sup>	5,000 <sup>e</sup>	5,000
France	1,470 <sup>r</sup>	1,312 <sup>r</sup>	1,500 <sup>r</sup>	1,500 <sup>r,e</sup>	1,500
French Guiana	3,296	2,773	1,955	2,000 <sup>e</sup>	2,000
Gabon <sup>e,7</sup>	70	300	300	300	300
Georgia <sup>e</sup>	2,000	2,000	2,000	2,000	2,000
Ghana	70,749	63,139	66,852	69,817 <sup>r</sup>	77,349 <sup>3</sup>
Guatemala	--	--	741	5,036	7,100
Guinea	16,622	11,100	25,097 <sup>r</sup>	18,147 <sup>r</sup>	18,000
Guyana	11,707	11,148	8,166 <sup>r</sup>	6,406 <sup>r</sup>	7,658 <sup>3</sup>
Honduras	4,494 <sup>r</sup>	3,683 <sup>r</sup>	4,438 <sup>r</sup>	4,100 <sup>r,e</sup>	4,000
India <sup>8</sup>	3,200	3,700	3,100	2,400 <sup>r</sup>	3,000
Indonesia <sup>9</sup>	141,019	91,710	130,620	93,176 <sup>r</sup>	117,851 <sup>3</sup>
Iran	203	195	200 <sup>e</sup>	200 <sup>e</sup>	200
Italy <sup>e</sup>	250 <sup>r</sup>	200 <sup>r</sup>	150 <sup>r</sup>	200 <sup>r,3</sup>	450
Jamaica	131	20 <sup>e</sup>	--	--	--
Japan	8,143	8,021	8,318	8,904	8,869 <sup>3</sup>
Kazakhstan <sup>e</sup>	17,000 <sup>r</sup>	19,261 <sup>r,3</sup>	18,062 <sup>3</sup>	20,000 <sup>r</sup>	22,000
Kenya	1,543	567	616	432 <sup>r</sup>	460
Korea, North <sup>e</sup>	--	2,000	2,000	2,000	2,000
Korea, Republic of	166	233	266	277 <sup>r</sup>	162 <sup>3</sup>
Kyrgyzstan <sup>e</sup>	22,476 <sup>3</sup>	22,000	16,700	10,721 <sup>3</sup>	10,636 <sup>3</sup>

See footnotes at end of table.

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

(Kilograms)

Country	2003	2004	2005	2006	2007 <sup>e</sup>
Laos	8,879	6,760	7,058	6,088 <sup>r</sup>	4,161 <sup>3</sup>
Liberia	20 <sup>e</sup>	110	27 <sup>r</sup>	11 <sup>r</sup>	11
Madagascar	10	5	5	5 <sup>e</sup>	5
Malaysia	4,739	4,221	4,250	3,497	4,000
Mali	45,535 <sup>r</sup>	37,911 <sup>r</sup>	44,230 <sup>r</sup>	51,957 <sup>r</sup>	48,850 <sup>3</sup>
Mauritania	--	--	--	322	2,000
Mexico	20,406	21,818	30,356	38,961 <sup>r</sup>	39,000
Mongolia	11,119	19,240	24,120	22,561	20,000
Morocco	1,863	1,200	1,200 <sup>e</sup>	1,200 <sup>e</sup>	1,200
Mozambique	63	56	63	85 <sup>r</sup>	90
Namibia	2,508	2,205	2,703	2,900 <sup>e</sup>	3,000
New Zealand	9,300	10,151	10,583	10,618 <sup>r</sup>	10,500
Nicaragua	3,439 <sup>r</sup>	4,315 <sup>r</sup>	3,674 <sup>r</sup>	3,595 <sup>r</sup>	3,000
Niger	30	684	4,962 <sup>r</sup>	2,615 <sup>r</sup>	2,600
Nigeria <sup>c</sup>	50	30	30	40	40
Oman	31 <sup>r</sup>	211 <sup>r</sup>	384 <sup>r</sup>	144 <sup>r</sup>	100
Papua New Guinea	67,832	73,670	68,483	58,349 <sup>r</sup>	58,000
Peru <sup>10</sup>	172,619	173,224	208,002 <sup>r</sup>	202,822 <sup>r</sup>	170,128 <sup>3</sup>
Philippines	37,844	35,464	37,490	36,141 <sup>r</sup>	38,792 <sup>3</sup>
Poland	356	527	530 <sup>r</sup>	500	500
Romania <sup>c</sup>	500	500	500	500	400
Russia <sup>11</sup>	170,068	163,148	164,186	159,340	156,912 <sup>3</sup>
Rwanda <sup>e</sup>	2 <sup>3</sup>	--	--	--	--
Saudi Arabia	8,769	8,268	7,456	5,200 <sup>r,e</sup>	4,500
Senegal <sup>c</sup>	600	600	600	600	600
Serbia	400 <sup>12</sup>	400 <sup>12</sup>	500 <sup>12</sup>	500	500
Sierra Leone	6	27	53	71	70
Slovakia	50 <sup>r</sup>	50 <sup>r</sup>	109 <sup>r</sup>	100	100
Solomon Islands <sup>c</sup>	100	10 <sup>3</sup>	10	10	--
South Africa	373,300	337,223	294,671	272,128	252,344 <sup>p,3</sup>
Spain	5,362	5,248	5,300 <sup>e</sup>	5,300 <sup>e</sup>	5,300
Sudan	5,106	5,000 <sup>e</sup>	3,625	3,158	2,700
Suriname	300 <sup>e</sup>	8,513	10,619	9,362 <sup>r</sup>	10,000
Sweden <sup>c</sup>	4,300	5,300 <sup>3</sup>	5,100	5,100	5,000
Tajikistan <sup>c</sup>	2,700	3,000	3,000	3,000	3,000
Tanzania	48,018	48,178	52,276 <sup>r</sup>	47,000 <sup>r</sup>	40,193 <sup>3</sup>
Thailand	4,269	4,500	4,400	3,500 <sup>r</sup>	2,400
Turkey <sup>c</sup>	6,500	4,500	5,000	4,500 <sup>r</sup>	5,000
Uganda	40	1,447	1,700	1,600 <sup>e</sup>	1,600
United States	277,000	258,000	256,000	252,000	238,000 <sup>3</sup>
Uruguay	1,500	2,334	3,151	3,200	3,200 <sup>p</sup>
Uzbekistan <sup>c</sup>	90,000	93,000	90,000	85,000	85,000
Venezuela <sup>e</sup>	7,900	9,666 <sup>3</sup>	10,000	12,400 <sup>r</sup>	12,500
Vietnam <sup>e</sup>	2,000	2,000	2,138 <sup>r,3</sup>	2,500 <sup>r</sup>	3,000
Zimbabwe	12,564	21,330	14,023	11,354	6,750 <sup>3</sup>
Total	2,540,000 <sup>r</sup>	2,420,000 <sup>r</sup>	2,480,000 <sup>r</sup>	2,370,000 <sup>r</sup>	2,340,000

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

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

<sup>2</sup>Table includes data available through August 7, 2008.

<sup>3</sup>Reported figure.

<sup>4</sup>Officially reported figures are as follows, in kilograms: Major companies: 2003—26,066; 2004—28,508; 2005—29,941; 2006—40,075 (revised); and 2007—35,200 (estimated). Garimpos: 2003—14,350; 2004—19,088; 2005—8,351; 2006—9,889; and 2007—11,600 (estimated).

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

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<sup>5</sup>Includes undocumented artisanal production.

<sup>6</sup>Year ending July 7 of that stated.

<sup>7</sup>Undocumented artisanal production.

<sup>8</sup>Refinery output.

<sup>9</sup>Excludes production from so-called people's mines, which may be as much as 20,000 kilograms per year, but includes gold recovered as byproduct of copper mining.

<sup>10</sup>Includes documented production from placer artisanal production.

<sup>11</sup>Mine output including gold recovered as a byproduct, but excludes secondary gold production, which for Russia, in kilograms, was 2003—6,835; 2004—4,884; 2005—4,882; 2006—4,981; and 2007—5,867.

<sup>12</sup>Montenegro and Serbia formally declared independence in June 2006 from each other and dissolved their union.