THE GOLD AND SILVER INDUSTRIES IN THE WORLD, UNITED STATES AND ARIZONA

SALIENT STATISTICS

TEN-YEAR PERIOD, 1950-1959

Compiled By

ARIZONA DEPARTMENT OF MINERAL RESOURCES

Phoenix, Arizona

From

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THE GOLD INDUSTRY

GOLD IN 1959

Reported by U.S.B.M. in Mineral Market Report No. 3107

"Domestic mine production of gold declined 8 percent in 1959 to 1.6 million ounces valued at $56.1 million, the lowest level of output since 1892, except for the war years 1943-46, according to the Bureau of Mines, United States Department of the Interior. The drop in production resulted principally from strikes at copper mines recovering by-product gold particularly in Arizona and Utah, but output from straight-gold mines, especially placer mines in Alaska and California, also was lower. Of the total production, 50 percent was recovered from precious metal ores, 22 percent from placers, and 28 percent as a by-product of base metal ores.

South Dakota continued to rank as the leading gold-producing State by a wide margin, followed by Utah, Alaska, and California, the same order of rank as in 1958. These four States supplied 71 percent of the total domestic production. As in preceding years the gold output of South Dakota, Alaska, and California came from straight-gold mines; most of the remaining output was recovered as a by-product of base-metal mining.

World gold production in 1959 rose for the sixth successive year with a slight gain over 1958, and reached a record of 42.8 million ounces valued at $1,498 million. The increase was again attributed almost entirely to greater output from South African gold mines which more than offset lower production in the United States and Canada. The estimated free-world gold reserve gained $0.8 billion and reached $40.7 billion at the yearend.

The United States gold reserve dropped about $1 billion to $19.5 billion, as a result of a continued balance-of-payments deficit with foreign countries. The U. S. gold reserve thus was about 48 percent of the total free-world reserve compared with 50 percent at the end of 1958."

MONETARY GOLD STOCKS

Abstracted from article by Dr. M. A. Kriz, First National City Bank of N. Y. in Feb. 1960 Engineering & Mining Journal, pp 98-101

"At the end of 1959, monetary gold reserves held outside the U. S. (and outside Russia) stood at some $21-billion -- twice as high as in December 1949, three months after the devaluation of sterling and many other currencies. Of this increase, $5.0-billion came from the U. S. and the remainder from new gold output, Russia, and other sources. At the same time, foreign countries added over $11-billion to their liquid dollar assets. Altogether, therefore, foreign gold and dollar holdings, now at some $40-billion, have increased by almost $22-billion in the past decade. The United States, which held 70% of world monetary gold stocks 10 years ago, now holds slightly less than one half.

REDISTRIBUTION OF GOLD is a good thing in so far as it measures the success of Europe, where most of the gold has gone, in stabilizing its currencies and rebuilding its industrial power. But in the past two years the build-up of Europe's reserves has involved increased costs to the U. S. evidenced in an external payments deficit of a size that no country, however rich, can afford indefinitely.

This excessive gold and dollar out-flow from the U. S. has brought about an entirely new situation in world finance - and one that calls for a fresh examination of economic and financial policies, domestically as well as internationally. . . .

"Economically and financially developed countries, now that they have attained record levels of output and productivity, are able to contribute increasingly to programs designed to help the poorer parts of the world, and to assume heavier burdens of common defense.

It is worth noting that foreign officials and bankers are witnessing, as the President of the German central bank, Dr. Blessing, noted recently, 'with keen satisfaction . . . the vigorous endeavors to maintain stability that are being made in the United States.' He stressed that maintenance of monetary stability in the U. S. is "of tremendous importance" to other nations, since the dollar is "the leading currency of the world and one of the main pillars of our international currency system." A sound dollar, therefore, is not only a matter of interest to us but also fundamental to maintaining the economic and financial strength of the whole world.

THE DOLLAR, of course, remains a strong and desirable currency. As already noted, foreign bankers, traders, and investors continue to enlarge dollar balances and investments. There has been no "dollar panic." But the willingness of the outside world to hold dollars, rather than gold, must depend in large part on their confidence in our Government, the Federal Reserve System and the American people.

It is sometimes suggested that the gold position of the U. S. has become weak. Nothing of that sort has happened, however. At the end of 1959, gold required as legal cover for currency stood at $11.9-billion, leaving the U. S. with "free" gold of $7.3-billion to cover short-term liabilities to foreigners. These amounted last October to $16-billion, of which $9-billion was on official account and thus eligible for conversion into dollars under a practice that the Treasury established some 25 years ago. The remaining $7-billion was held by banks, businesses, and individuals as working balances and reserves against liabilities to Americans; the privately held dollars cannot be converted into gold unless previously sold to the central bank of the country concerned. The United Kingdom held in December 1959 a gold and convertible currency reserve of some $3-billion. Sterling liabilities stood in June 1959 close to the equivalent of $10-billion; most of these were on official account.

Americans as well as foreigners are aware of the large real resources and the high productivity of our economy. But the economies of other industrial nations are once again strong; and the U. S., which a few years ago was easily able to square its accounts with the rest of the world, has now discovered that it is, like any other nation, subject to the balance-of-payments discipline. This, indeed, is the most striking lesson of world gold trends today."

CONCLUSION

Much can be said in favor of keeping our currency sound by maintaining a stable value for gold, but it does not seem fair or just to penalize gold miners whose costs of production have increased tremendously for the past twenty-five years. A government subsidy to U. S. gold producers based upon a parity of some sort, would obviate the necessity of monkeying with the par value of the dollar, and at the same time encourage production.

TABLE I

GOLD MONETARY STOCKS

YEAR END FOR YEARS 1950-1959

IN BILLIONS OF DOLLARS

	U. S. Monetary Stocks	U. S. % of World	World Monetary Stocks 1/ Estimated By Federal Reserve 2/
End of 1950	$ 22.7	63.4%	$ 35.8
" " 1951	22.7	63.15%	35.95
" " 1952	23.2	64.1%	36.2
" " 1953	22.0	60.8%	36.2
" " 1954	21.7	58.1%	37.35
" " 1955	21.7	58.4%	37.15
" " 1956	21.9	58.1%	37.7
" " 1957	22.85	58.7%	38.9
" " 1958	20.6	51.6%	39.9
" " 1959	19.5	48.0%	40.6

1/ Excluding Russia; but includes International Monetary Fund.

2/ Total world gold reserves are not positively known, since some countries do not report.

Compiled By -
Arizona Department of Mineral Resources

September, 1960

TABLE II

WORLD PRODUCTION OF GOLD

Source: U.S.B.M. Unit: Troy Ounces

	1959	Ten-Year Avg. 1950-1959
Union of So. Africa	20,064,105	14,543,707
Canada	4,483,688	4,414,262
United States	1,603,802	1,884,447
Australia	1,089,574	1,028,952
Ghana	913,200	747,894
Southern Rhodesia	566,883	525,137
Philippines	402,615	412,439
Columbia	397,929	396,106
Belgian Congo	351,086	362,220
Mexico	313,662	386,793
Japan	258,010	223,840
Brazil	180,000	167,850
India	165,383	207,388
Other Free Countries	1,820,063	1,796,965
TOTAL FREE WORLD (Estimate)	32,610,000	27,098,000
U.S.S.R.	10,000,000	9,400,000
N. Korea	130,000	128,500
Yugoslavia	60,000	43,825
TOTAL COMMUNIST CONTROLLED	10,190,000	9,572,000
TOTAL WORLD (Estimate)	42,800,000	36,670,000

Compiled By Arizona Department of Mineral Resources September, 1960

TABLE III

SALIENT STATISTICS OF GOLD IN THE UNITED STATES

BY YEARS, 1950-1959

Source: U.S.B.M.

	1950	1951	1952	1953	1954
Mine Prod. fine ozs.	2,394,231	1,980,512	1,893,261	1,958,293	1,837,310
Ore(dry & siliceous) produced (S.tons)					
Gold ore	3,584,360	2,606,202	2,339,160	2,198,688	2,248,604
Gold-Silver	433,461	368,184	237,211	81,658	46,345
Silver ore	627,349	492,143	502,208	555,050	680,442
Percentage derived from-					
Dry & siliceous ores	43	39	40	40	43
Base-metal ores	31	36	38	39	34
Placers	26	25	22	21	23
Net consumption in industry and arts 1/	2,796	1,985	2,753	2,143	1,270
Imports 1/	4,650	2,322	21,140	1,344	1,083
Exports 1/	15,259	18,010	1,598	1,280	494
Monetary stocks(End of yr.)2/	$22,706	$22,695	$23,186	$22,030	$21,713
Price,avg.,per fine oz. 3/	$ 35.00	$ 35.00	$ 35.00	$ 35.00	$ 35.00
World prod.,fine ozs., (estimated)	33,700,000	33,500,000	34,300,000	33,700,000	35,100,000

	1955	1956	1957	1958	1959
Mine Prod. fine ozs.	1,876,830	1,865,200	1,800,000	1,759,000	1,604,000
Ore(dry & siliceous) produced (S. tons)					
Gold ore	2,234,000	2,255,000	2,359,000	2,411,000	2,289,000
Gold-Silver	120,000	245,000	116,000	107,000	137,000
Silver ore	570,000	687,000	712,000	639,000	597,000
Percentage derived from-					
Dry & siliceous ores	41	42	43	47	50
Base-metal ores	37	39	38	32	28
Placers	22	19	19	21	22
Net consumption in industry and arts 1/	1,300	1,400	1,450	1,833	N.A.
Imports 1/	2,930	3,730	7,701	8,120	8,485
Exports 1/	162	734	4,806	886	50
Monetary stocks(End of yr.)2/	$21,690	$21,949	$22,857	$20,582	$19,507
Price.avg.,per fine oz. 3/	$ 35.00	$ 35.00	$ 35.00	$ 35.00	$ 35.00
World prod.,fine ozs., (estimated)	36,300,000	38,400,000	39,600,000	40,600,000	42,800,000

1/ Thousands of ounces.

2/ Owned by Treasury Dept.; privately held coinage not included- In millions of dollars.

3/ Price under authority of Gold Reserve Act of Jan. 31, 1934.

TABLE IV

PRODUCTION OF GOLD AND SILVER IN ARIZONA IN 1959

By Class of Ore. In Terms of Recoverable Metal

Source	Number of Mines 1/	Material sold or treated (short tons)	Gold (troy ozs.)	Silver (troy ozs.)
LODE ORE:				
Dry gold	13	732	218	1,210
Dry gold-silver	8	68,959	985	19,520
Dry silver	17	57,247	3	12,153
TOTAL	38	126,938	1,206	32,883
Copper	41	53,121,545	96,153	2,724,701
Copper-zinc	5	96,299	74	39,241
Lead	10	4,087	68	28,000
Lead-zinc	5	346,147	26,866	1,066,145
Zinc	1	16,139	27	1,757
TOTAL	62	53,584,217	123,188	3,859,844
OTHER "LODE" MATERIAL:				
Gold mill cleanings		8	21	33
Gold & silver tailings	2	20,018	98	1,665
Copper smelter cleanings		969	36	1,307
Copper precipitates	13	32,685		
Uranium ore			1	2,596
TOTAL	15	53,680	156	5,601
TOTAL "LODE" MATERIAL	101	53,764,835	124,550	3,898,328
Gravel (placer operations)	3		77	8
TOTAL ALL SOURCES	104	53,764,835	124,627	3,898,336

1/ Detail will not necessarily add to totals because some mines produce more than one class of material.

Arizona ranked 5th in gold production and 2nd in silver production in the United States in 1959.

Compiled by Arizona Department of Mineral Resources from U.S.B.M.Reports.

September, 1960

THE SILVER INDUSTRY

There has been considerable discussion* of late concerning the status of the silver industry wherein mine production has been lagging behind consumption at the rate of 67 million ounces per year for the past ten years. Average annual production during this period has averaged 185 million ounces for the free world, and 37.7 million ounces for the United States alone. (Table V) Comparative consumption in the arts and industry plus the silver used for coinage purposes has averaged about 252 million ounces annually, 138.63 million ounces being consumed in the United States alone (99.50 million in the arts and industry and 39.13 million in coinage). (Table VI)

The deficit has had to be made up by the sale of silver from the Treasury's stocks of free silver. At the end of 1959, there were left only 175 million ounces of free silver, with only 35 million ounces remaining due on Lend Lease, which means that our stock will be exhausted in less than three years if we continue at the 1959 deficit rate. When that happens, the stabilizing effects of Treasury sales will cease, and the inexorable law of supply and demand will cause the price to soar. In the meantime, the Treasury has been selling its free silver for 90.5 cents per ounce, even though the New York price averaged 91.2 cents for 1959. This price would have been even higher if the Treasury had not sold its free silver stocks at 90.5 cents per ounce.

** "The Silver Purchase Act of 1946 regulates purchase and sale of silver by the U. S. Treasury. It directs that newly mined domestic silver offered to the Mint be purchased at 90.5¢ per troy ounce and authorizes the sale of silver (at the discretion of the Treasury) from the Treasury's Free Silver stock at not less than 90.5¢ per oz. Actually the Act refers to the acquisition of silver and in theory the bullion is minted and payment made in silver as dollars, after deduction of a toll of three tenths as seignorage.

The silver acquired by the Treasury and used to back all silver certificates is valued on its books at $1.29. This price was established by Act of Congress in 1834 and represents a 16:1 ratio of gold to silver with gold at the pre-1934 price of $20.67 per oz. The price of 90.5¢ is 70 percent of the $1.29 established in 1834. This results in 7 oz. out of 10 being assigned to back silver certificates and 3 oz. going to the Free Silver stock. The Treasury obtains a 30 percent seignorage on its silver certificates and a 53 percent seignorage on the subsidiary coins: halves, quarters, and dimes. - - - -

"The U. S. Treasury, with about 2100 million ounces of silver in reserve in addition to 1300 million oz. in circulation, is the great repository of the world's silver. Of this only the Free Silver stock is readily available to the U. S. market, so that as long as the U. S. Treasury sells at the price of 90.5¢, it largely controls the world price."

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* "Silver in a Time of Change", E. Sampson in "Mining Engineering", July, 1960
"Silver, the Precious Metal With a Future", H. B. Johnson in Paper presented to Colorado Mining Association at Denver, Colo., April 23, 1960.

** E. Sampson in Mining Engineering, July, 1960, p 676B.

In 1959, free world production amounted to 190.0 million ounces, while consumption amounted to 296.0 millions (including 211.8 millions in the arts and industry and 84.2 millions in coinage. United States production figures were 31.2 millions, and consumption was 100.0 millions in arts and industry and 40.7 millions in coinage, total 140.7 million ounces.

Coinage use has increased tremendously in the last few years, due to the popularity of vending machines throughout the world. Industrial use has also developed remarkably. The special properties of silver have greatly widened its use. Of all metals, silver is the best conductor of electricity and heat. Also it imparts desirable properties to solders, making them usable with nearly all metals and also capable of withstanding higher temperatures than common solder. In the U. S. about three-quarters of the industrial silver now consumed is for photographic products, solder, and electrical contacts. And of course there is the age-old use for silverware.

In the photographic field an estimated 28 to 32 million troy ounces of silver is consumed annually in the U. S. and about an equal amount in the rest of the free world.

Silver solders and brazing alloys consume about 24 to 27 million ounces annually.

The third most important and rapidly growing industrial use of silver is the electrical industry for all forms of electrical contacts. An estimated 18 to 20 million troy ounces are used annually in the U. S.

Other uses are in the ceramic industry, in silver-zinc and other type batteries, as a catalyst in chemical reactions, in water sterilization, in aircraft and diesel engine bearings, and in numerous other ways.

CONCLUSION

Congress should stop the Treasury from selling any of its free silver stocks for less than $1.29 per troy ounce.

Congress should provide for the purchase of newly mined U. S. silver at $1.25 per troy ounce.

Arizona Department of Mineral Resources September, 1960

TABLE V

WORLD PRODUCTION OF SILVER

TOTALS FOR YEAR 1959 AND AVERAGE FOR 10 YEAR PERIOD 1950-1959

Source: U.S.B.M. In Thousand Troy Ounces

	1959	Ten Yr.Avg. 1950-1959
Mexico	44,075	46,092
United States	31,194	37,730
Canada	31,927	27,931
Peru	24,768	20,822
Australia	14,800	13,578
Japan	6,598	5,775
Belgian Congo	4,758	4,196
Other Free Countries	31,880	28,876
Total Free World	190,000	185,000
U.S.S.R.	25,000	24,730
China	510	433
N. Korea	320	166
Other Communist	9,170	9,671
Total Communist Controlled	35,000	35,000
TOTAL WORLD	225,000	220,000

TABLE VI

FREE WORLD SILVER CONSUMPTION

Millions of Troy Ounces

	UNITED STATES		REST OF FREE WORLD		TOTAL		GRAND TOTAL
	Arts & Indust.	Coinage	Arts & Indust.	Coinage	Arts & Indust.	Coinage	
1950	120.0	24.6	37.4	19.5	157.4	44.1	201.5
1951	110.0	44.4	51.6	46.1	161.6	90.5	252.1
1952	95.0	57.3	43.6	57.0	138.6	114.3	252.9
1953	105.0	42.7	58.8	32.0	163.8	74.7	238.5
1954	85.0	54.0	67.1	13.3	152.1	67.3	219.4
1955	100.0	8.2	92.8	44.4	192.8	52.6	245.4
1956	100.0	31.2	110.2	25.3	210.2	56.5	266.7
1957	95.0	52.0	118.0	32.2	213.0	84.2	297.2
1958	85.0	36.2	102.4	26.9	187.4	63.1	250.5
1959	100.0	40.7	111.8	43.5	211.8	84.2	296.0
Totals	995.0	391.3	793.7	340.2	1,788.7	731.5	2,520.2
10-Yr. Avg.	99.50	39.13	79.37	34.02	178.87	73.15	252.02

Average Annual Consumption 1950-1959 - 252,020,000 ounces
Average Annual Production 1950-1959 - 185,000,000 ounces
Average Annual Deficiency 1950-1959 - 67,020,000 ounces

Compiled By Arizona Department of Mineral Resources from U.S.B.M. Records, E. & M.J. Annual Reviews, and Colo. Mining Assoc. Papers.

September, 1960

TABLE VII

TREASURY SILVER

Millions of Troy Ounces

	Dec. 31, 1959	Dec. 31, 1950	Change + or -	Avg. Per Yr. (10 Years.)
Held in Treasury				
Securing Silver Certificates:				
Silver bullion	1,741.3	1,578.3	+ 163.0	+ 16.30
Silver dollars	141.1	241.9	- 100.8	- 10.08
Subsidiary coin	2.4	2.6	- 0.2	- 0.02
Free silver bullion	175.1	159.9	+ 15.2	+ 1.52
TOTAL TREASURY STOCKS	2,059.9	1,982.7	+ 77.2	+ 7.72
Outside the Treasury:				
Silver dollars	236.2	139.1	+ 97.1	+ 9.71
Subsidiary coin	1,094.6	739.4	+ 355.2	+ 35.52
TOTAL SILVER OUTSIDE TREASURY ..	1,330.8	878.5	+ 452.3	+ 45.23
TOTAL SILVER	3,390.7	2,861.2	+ 529.5	+ 52.95

Compiled by Arizona Department of Mineral Resources from U.S.B.M. records, Engineering & Mining Journal, and Handy & Harmon.

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