

WORLD

SILVER SURVEY



THE SILVER INSTITUTE

1993

WORLD SILVER SURVEY 1993

THE SILVER INSTITUTE

A WORLDWIDE ASSOCIATION OF
MINERS, REFINERS, FABRICATORS AND MANUFACTURERS

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The **WORLD SILVER SURVEY** has been published by The Silver Institute since 1990. Copies of the 1990, 1991 and 1992 editions are available by contacting The Silver Institute at the address and telephone number on the front inside cover.

ISSN 1059-6992

ISBN 1 - 880936-01-1

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PREFACE

The Silver Institute is pleased to release the 1993 edition of its *WORLD SILVER SURVEY*, the fourth annual report in this series.

In past reports, separately researched sections were devoted to India and other growing markets in the Far East. This year the basic report was expanded to include more extensive coverage of this area of the world and summaries are included for South Korea, Thailand, Taiwan and Hong Kong as well as India.

Additionally, information on some of the smaller national markets in Europe has been included, with the Netherlands joining Italy, Germany, the United Kingdom and France in this report's European demand coverage. Statistics on silver demand in other countries in Europe and the rest of the world have also been elaborated on in this report.

This raises to 12 the number of countries for which detailed demand statistics now are available. Our research is continuing and in future reports, additional countries may be added. Ongoing improvements are being made with the statistics of the seven major countries already included in past *WORLD SILVER SURVEYS*.

This year's report is divided into three sections. The first reviews supply and demand. The second section reports on fabrication demand in specific countries. The third is a statistical appendix with additional information on the silver market.

The Silver Institute has two purposes in undertaking the *WORLD SILVER SURVEY* program: a broader dissemination of reliable statistics and analysis on silver supply and demand, and the improvement of the statistics and information available on silver. We believe this year's *WORLD SILVER SURVEY* fulfills both of these objectives.

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SUMMARY

Market Balance

1. Fabrication demand exceeded total new supply of silver by 88.6 million ounces in 1992. This is the third consecutive year in which the silver market has relied on a drawdown of inventories to meet fabrication requirements. In 1990 the deficit of new supply relative to fabrication demand has been revised to 41.9 million ounces, followed by a revised deficit of 85.8 million ounces in 1991. The revisions reflect improved measurement of silver fabrication demand, particularly in Asia, which has been understated in previous reports.

2. The deficit is projected to widen to 143.2 million ounces in 1993.

Supply

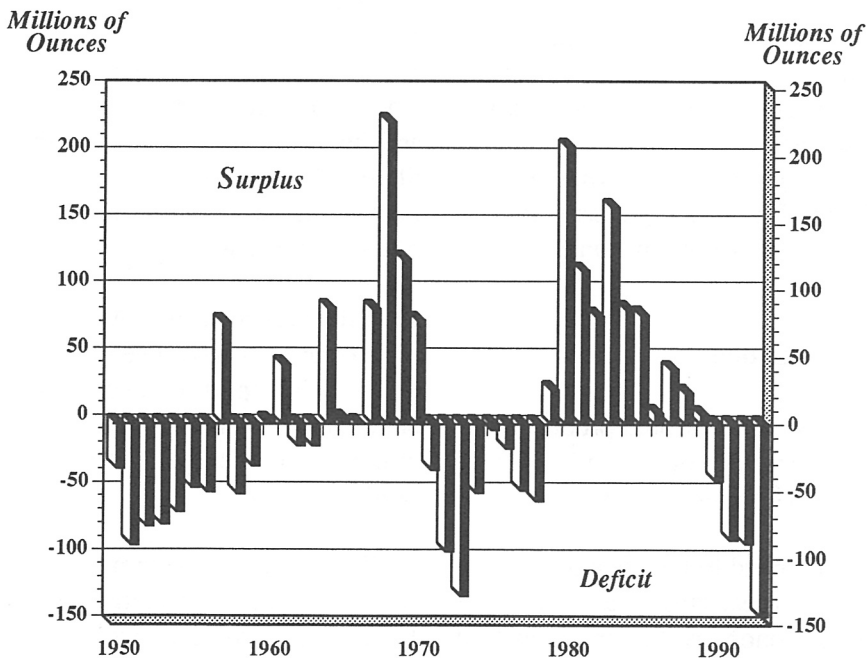
3. Total silver supply rose 1.8% in 1992, to 501.7 million ounces from 493.0 million ounces in 1991.

4. In 1993 silver supply is projected to drop 4.0%, to 481.8 million ounces, as mine production falls in several major producing nations.

5. Mine production rose an estimated 1.3% to 362.8 million ounces in 1992.

Long-Term Silver Supply / Fabrication Demand Balance

(Annual data on pages 12 - 13)



Production fell sharply in the major producing nations of Peru and Canada, but rising output in Mexico and several smaller producing nations offset the declines. In 1993, mine production is projected to fall 6.3%, with further declines being registered in Peru and Canada, and lower production in the United States and other countries.

6. Secondary and other supplies of silver — from scrap recovery, government inventories, and the transitional economies of Eastern Europe — rose 3.0% in 1992. The major increase was a 10.6% rise in silver recovery from old scrap, primarily photographic materials. Silver recovery from coins fell in 1992, as did Indian scrap recovery, government silver disposals (through coin programs), and net exports from Eastern Europe.

7. Silver supplies from secondary and other sources are projected to rise a further 2.2% in 1993, to 142.0 million ounces. The major increase is expected to be in old scrap recovery once again, while exports from Eastern Europe are projected to drop sharply, from 5.6 million ounces to 3.0 million ounces.

Fabrication Demand

8. Silver use in fabricated products rose 2.0% to 590.3 million ounces in 1992, from a revised 578.8 million ounces in 1991.

9. Silver demand fell in the major industrialized countries, largely as a result of their weak economies. Silver use in East Asia rose meanwhile, offsetting the de-

cline in the United States, Japan, and Western Europe.

10. Fabrication demand for silver is projected to rise 5.9% to 625.0 million ounces in 1993. Reviving economic activity in the United States and some other industrialized nations will contribute to this growth, as will rising demand in the newly industrializing countries. A major circulating bi-metallic silver coin program in Mexico also will increase demand for silver this year.

11. Silver use in India rose 29.9% in 1992, to 57.8 million ounces from 44.5 million ounces in 1991. Demand rose most sharply in the jewelry and silverware sectors in India, while industrial usage rose 6.3%.

12. Detailed statistics on silver use by industrial sector for five additional countries have been added to this year's World Silver Survey. The five countries are Thailand, South Korea, Taiwan, Hong Kong, and the Netherlands. They join the United States, Japan, India, Italy, Germany, France, and the United Kingdom in a separate special section.

13. Silver use in the four Asian nations for which statistics have been developed for this year's report totaled 53.7 million ounces in 1992, more than double the 24.2 million ounces these countries used as recently as 1990.

14. The Mexican government began using silver in 10-Peso circulating coins in late 1992. This program used 4.0 million ounces last year. In 1993, 20-Peso coins

also are being minted. Mintage of the two coins, which contain one-sixth and one-quarter ounce of silver respectively, is projected by the government to absorb 23.0 million ounces in 1993. The silver is being purchased in the domestic Mexican market.

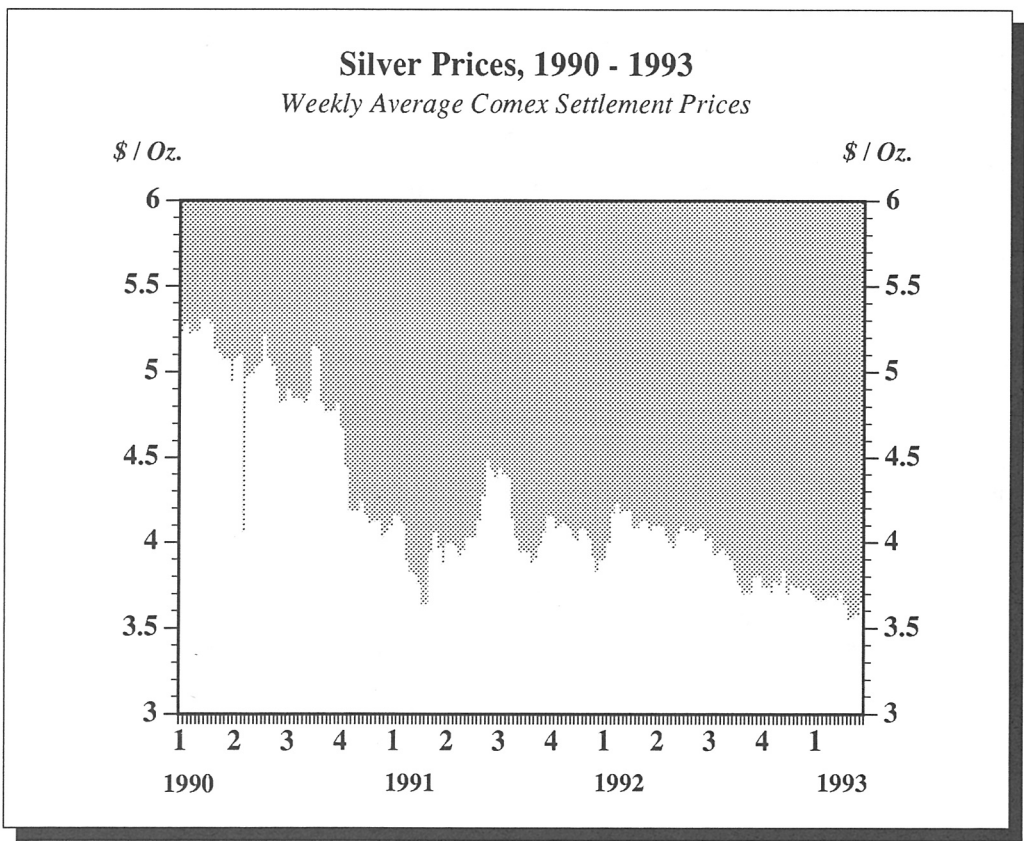
Investment Demand

15. Investors continued to sell silver on a net basis in 1992. Estimated sales totaled 59.9 million ounces, down from 85.3 million ounces in 1991. Between 1989 and 1992 investors sold an estimated 233.9 million ounces of silver from long-term holdings.

16. Investor purchases of bullion coins revived in the final four months of 1992, after being low earlier in the year. For the full year, silver use in coins (excluding the Mexican 10 Pesos) totaled 25.4 million ounces, down from 27.7 million ounces in 1991.

Prices

17. Silver prices averaged \$3.93 in 1992, 2.8% lower than the \$4.03 average in 1991. The low for the year was \$3.64, in the fourth quarter of 1992; and the high was \$4.32 in January.



Silver Statistical Position

Million Troy Ounces

	1977	1978	1979	1980	1981	1982	1983	1984
Mine Production								
Mexico	47.0	50.8	49.4	47.3	53.2	49.8	55.0	63.9
United States	38.2	39.4	37.9	32.3	40.7	40.2	43.4	44.6
Peru	39.1	37.0	41.9	44.8	42.6	54.4	55.6	53.3
Canada	42.2	40.7	36.9	34.4	36.3	42.2	38.7	42.0
Other	96.8	98.9	105.9	107.6	110.4	111.5	120.9	120.8
Total	263.3	266.8	272.0	266.5	283.2	298.0	313.6	324.5
<i>% Change Year Ago</i>	—	1.3	1.9	-2.0	6.3	5.2	5.2	3.5
Secondary and Other Supply								
Secondary	182.0	168.0	233.0	320.0	196.0	156.0	215.5	151.6
<i>% Change Year Ago</i>	—	-7.7	38.7	37.3	-38.8	-20.4	38.1	-29.7
TOTAL SUPPLY	445.3	434.8	505.0	586.5	479.2	454.0	529.1	476.1
<i>% Change Year Ago</i>	—	-2.4	16.1	16.1	-18.3	-5.3	16.5	-10.0
Fabrication Demand								
Photography	129.6	142.9	146.1	123.8	128.1	133.3	138.3	144.2
Jewelry & Silverware	91.0	91.9	79.1	47.9	43.5	50.2	42.1	41.3
Electronics	78.7	79.3	80.4	71.2	62.2	61.7	60.4	62.3
Other Uses	87.5	84.0	82.5	66.6	61.8	58.1	57.4	65.3
Other Countries, Total	73.1	54.3	60.1	54.8	59.8	58.1	58.3	63.6
Coinage	34.5	39.5	31.0	15.0	9.5	12.0	10.2	13.7
Total	494.4	491.9	479.2	379.3	364.9	373.4	366.7	390.4
<i>% Change Year Ago</i>	—	-0.5	-2.6	-20.8	-3.8	2.3	-1.8	6.5
NET SURPLUS/DEFICIT	-49.1	-57.1	25.8	207.2	114.3	80.6	162.4	85.7
Additional Statistics								
Changes in Reported Stocks	10.5	-15.3	-7.8	2.8	-15.7	12.7	52.2	-8.0

Notes: Totals may not equal the sum of categories due to rounding. Excludes transitional economies, except for net exports into the market. Photography, jewelry and silverware, electronics, and 'other' industrial use includes U.S., European, and Japanese demand.

p — projections.

Source: CPM Group

1985	1986	1987	1988	1989	1990	1991	1992	1993p	
									Mine Production
69.2	69.4	69.8	70.0	70.0	67.9	62.7	65.0	65.0	Mexico
39.2	34.2	39.8	53.4	60.8	66.5	61.0	61.0	56.0	United States
54.9	59.9	63.6	47.7	56.8	55.6	56.9	48.0	45.0	Peru
38.5	35.0	38.1	44.1	41.3	44.4	40.6	36.2	34.2	Canada
128.0	121.8	126.9	128.8	129.4	135.8	136.9	152.5	139.6	Other
329.9	320.3	338.2	344.0	358.4	370.1	358.1	362.8	339.8	Total
1.7	-2.9	5.6	1.7	4.2	3.3	-3.1	1.3	-6.3	% Change Year Ago
									Secondary and Other Supply
152.9	124.9	164.0	158.1	153.2	135.0	134.9	138.9	142.0	
-0.5	-18.3	31.3	-3.6	-3.1	-11.9	-0.1	3.0	2.2	% Change Year Ago
482.8	445.2	502.2	502.1	511.6	505.1	493.0	501.7	481.8	TOTAL SUPPLY
1.4	-7.8	12.8	0.0	1.9	-1.9	-2.3	1.8	-4.0	% Change Year Ago
									Industrial Demand
148.2	153.3	164.1	176.3	177.1	186.0	187.0	185.6	186.6	Photography
47.5	61.3	66.0	69.3	75.8	81.0	85.4	84.9	88.0	Jewelry & Silverware
64.7	66.4	61.1	65.3	70.6	70.6	65.2	62.2	62.0	Electronics
63.8	61.7	68.8	69.8	75.8	79.2	81.9	77.3	75.0	Other Uses
63.8	67.1	70.6	72.5	78.7	99.4	131.6	150.9	162.7	Other Countries, Total
13.4	26.8	30.4	25.3	26.3	29.8	27.7	29.4	50.7	Coinage
401.4	436.9	461.0	478.5	504.3	546.5	578.8	590.3	625.0	Total
2.8	8.8	5.5	3.8	5.4	8.4	5.9	2.0	5.9	% Change Year Ago
81.4	8.4	41.2	23.5	7.3	-41.9	-85.8	-88.6	-143.2	NET SURPLUS/DEFICIT
									Additional Statistics
37.8	-38.6	2.9	16.2	51.1	33.1	4.6	5.5		Changes in Reported Stocks

Detailed statistics are available on these pages:

- Mine Production, p. 25
- Secondary & Other Supply, p. 26
- Fabrication Demand by Sector, p. 44-45
- Coinage, p. 46
- Fabrication Demand by Country, p. 102-103

World Silver Supply and Fabrication Demand

Million Troy Ounces

Year	Supply				Demand		
	Mine Output	Secondary	Other	Total	Industrial	Coinage	Total
1950	169.5	—	—	169.5	158.8	44.1	202.9
1951	165.5	—	—	165.5	164.6	90.5	255.1
1952	180.6	—	—	180.6	142.1	114.3	256.4
1953	184.7	—	—	184.7	168.3	90.8	259.1
1954	178.6	—	—	178.6	160.8	83.4	244.2
1955	187.7	—	10.3	198.0	192.8	52.6	245.4
1956	189.8	30.5	3.7	224.0	218.1	56.6	274.7
1957	194.6	25.0	3.8	223.4	214.8	84.2	299.0
1958	202.3	17.0	1.3	220.6	193.0	79.5	272.5
1959	195.6	33.4	42.0	271.0	216.0	86.4	302.4
1960	201.8	52.0	90.0	343.8	237.8	103.9	341.7
1961	203.9	65.0	181.0	449.9	269.6	136.0	405.6
1962	210.8	69.0	107.0	386.8	275.5	127.6	403.1
1963	214.0	68.0	147.0	429.0	278.9	166.4	445.3
1964	211.5	86.0	374.0	671.5	318.2	267.1	585.3
1965	218.4	103.0	426.0	747.4	358.5	385.1	743.6
1966	225.2	105.0	217.0	547.2	417.1	129.5	546.6
1967	214.7	126.0	252.0	592.7	401.9	105.3	507.2
1968	230.2	227.0	232.0	689.2	373.9	89.3	463.2
1969	248.7	174.0	119.0	541.7	386.3	32.7	419.0
1970	258.5	127.0	91.0	476.5	376.0	23.4	399.4
1971	247.3	127.0	9.0	383.3	389.5	27.8	417.3
1972	248.9	112.0	14.0	374.9	431.4	38.1	469.5
1973	254.0	122.0	47.0	423.0	522.5	28.5	551.0
1974	236.6	192.0	22.0	450.6	470.0	31.6	501.6
1975	239.0	177.0	21.0	437.0	407.7	33.4	441.1
1976	242.9	235.0	19.0	496.9	484.7	30.0	514.7
1977	263.3	169.0	13.0	445.3	459.9	34.5	494.4
1978	266.8	152.0	16.0	434.8	452.4	39.5	491.9
1979	272.0	216.0	17.0	505.0	448.2	31.0	479.2
1980	266.5	302.0	18.0	586.5	364.3	15.0	379.3
1981	283.2	184.0	12.0	479.2	355.4	9.5	364.9
1982	298.0	155.0	1.0	454.0	361.4	12.0	373.4
1983	313.6	197.5	18.0	529.1	356.5	10.2	366.7
1984	324.5	165.6	-14.0	476.1	376.7	13.7	390.4
1985	329.9	140.9	12.0	482.8	388.0	13.4	401.4
1986	320.3	129.3	-4.4	445.2	410.0	26.8	436.9
1987	338.2	137.9	26.1	502.2	430.6	30.4	461.0
1988	344.0	143.9	14.2	502.1	453.3	25.3	478.6
1989	358.4	136.2	17.0	511.6	478.0	26.3	504.3
1990	369.6	118.0	17.0	504.6	516.7	29.8	546.5
1991	358.1	117.6	17.3	493.0	551.1	27.7	578.8
1992	362.8	125.2	13.7	501.7	560.9	29.4	590.3
1993p	339.8	129.0	13.0	481.8	574.3	50.7	625.0

Notes: Base year for real prices is 1950.

Surplus(+) or Deficit(-)	Annual Prices Dollars per Ounce		Year
	Real (Base=1950)	Nominal	
-33.4	0.74	0.74	1950
-89.6	0.83	0.89	1951
-75.8	0.77	0.85	1952
-74.4	0.77	0.85	1953
-65.6	0.76	0.85	1954
-47.4	0.80	0.89	1955
-50.7	0.80	0.91	1956
-75.6	0.78	0.91	1957
-51.9	0.74	0.89	1958
-31.4	0.75	0.91	1959
2.1	0.74	0.91	1960
44.3	0.74	0.92	1961
-16.3	0.86	1.08	1962
-16.3	1.00	1.28	1963
86.2	1.00	1.29	1964
3.8	0.99	1.29	1965
0.6	0.96	1.29	1966
85.5	1.12	1.55	1967
226.0	1.48	2.15	1968
122.7	1.40	2.14	1969
77.1	1.10	1.77	1970
-34.0	0.92	1.55	1971
-94.6	0.97	1.68	1972
-128.0	1.39	2.56	1973
-51.0	2.30	4.71	1974
-4.1	1.97	4.42	1975
-17.8	1.84	4.35	1976
-49.1	1.84	4.62	1977
-57.1	1.99	5.40	1978
25.8	3.68	11.09	1979
207.2	6.02	20.63	1980
114.3	2.78	10.52	1981
80.6	1.98	7.95	1982
162.4	2.76	11.44	1983
85.7	1.89	8.13	1984
81.4	1.37	6.14	1985
8.4	1.20	5.47	1986
41.2	1.48	7.01	1987
23.5	1.33	6.53	1988
7.3	1.07	5.50	1989
-41.9	0.90	4.82	1990
-85.8	1.31	4.03	1991
-88.6	1.40	3.93	1992
-143.2	—	—	1993p

p — projections.

Sources: CPM Group, industry sources

SUPPLY

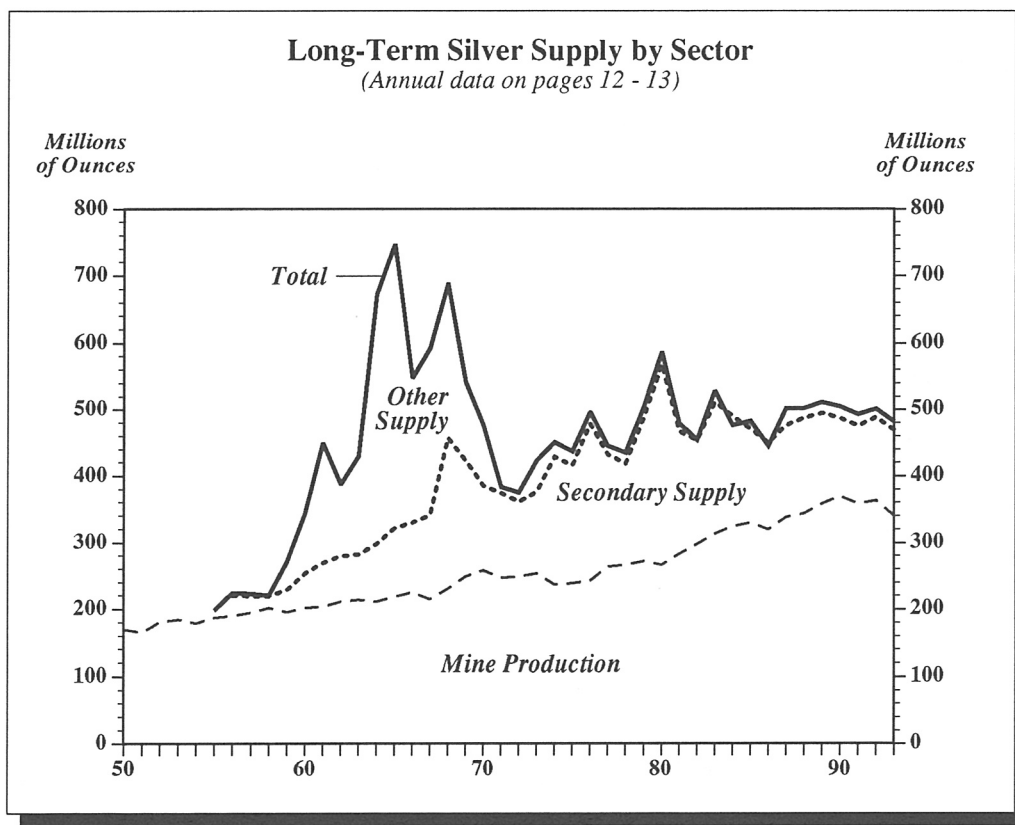
The availability of newly refined silver rose 1.8%, or 8.7 million ounces, in 1992 to 501.7 million ounces from 493.0 million ounces in 1991. The increase was due to higher mine production and increased secondary recovery. The flow of silver from other supply outlets declined.

While supplies of old scrap are expected to keep growing this year, mine output is forecast to fall sharply. Silver from government disposals could rise, but net exports from the transitional economies of Eastern Europe and the former Soviet Union could shrink even further.

Total supply is projected to decline 4.0% in 1993, to 481.8 million ounces, the lowest level since 1987. In light of these projections, and the higher estimates for fabrication demand discussed later in this report, the new supply might fall 143.2 million ounces short of fabrication demand requirements in 1993, a sharply wider gap than the 88.6 million ounce deficit in 1992.

Mine Production

A series of production cutbacks in the United States, Peru, and Canada were offset by higher mine output in Mexico,



Chile, Australia, Papua New Guinea, and several other smaller producing nations last year, raising mine production 1.3% to 362.8 million ounces.

Market economy mine output could decline 6.3% or more this year, to 339.8 million ounces. In the first few months of 1993, two U.S. nonferrous metals producers announced major closures, and Peruvian output is expected to fall even further.

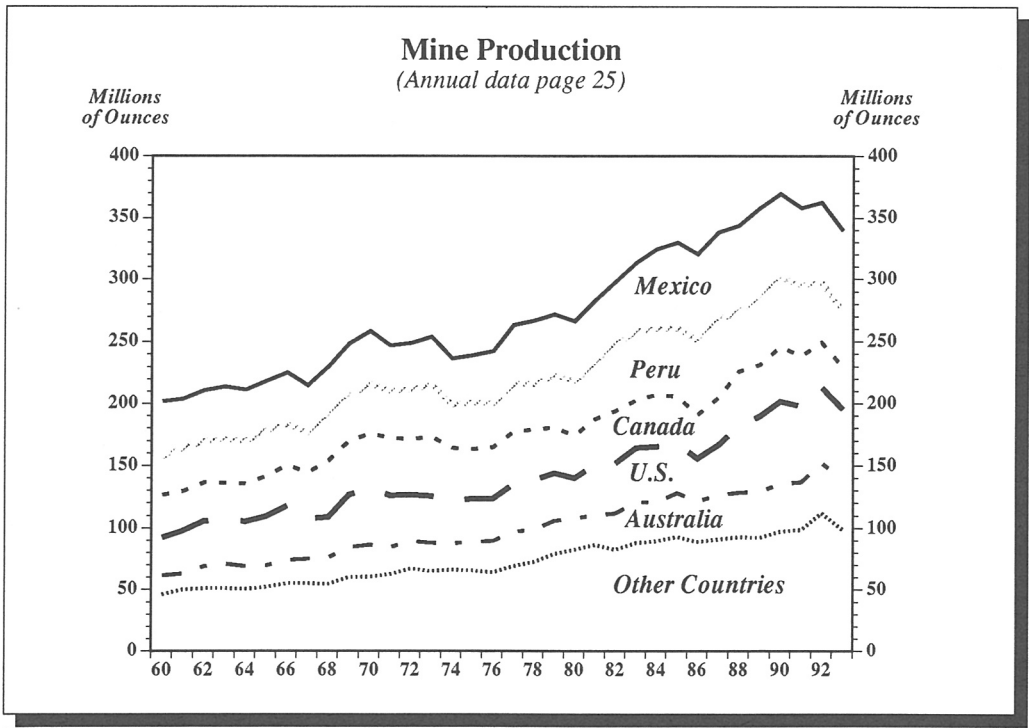
Mexico

Mexican mine production rebounded in 1992, rising 3.7% to 65.0 million ounces from 62.7 million ounces the previous year. Despite some reports suggesting sharp curtailments, Mexico is expected to produce a similar amount of silver this

year. A few mines have closed in Mexico, and some others are threatened with closure due to low metal prices and declining ore reserves. Still, Mexico remains the largest silver producing country in the world. New silver deposits and some gold mines with by-product silver capacity are being developed. By-product at copper mines has increased as well, and may increase further in 1993.

The United States

U.S. production, meanwhile, was level at 61.0 million ounces in 1992. Asarco's production was off nearly 25%, mainly due to the closure of the Galena silver mine, which produced around 1.7 million ounces the previous year. Asarco also reported lower recovery of silver at its Southwest



copper mines and produced 8.4 million ounces in 1992, compared with 11.1 million ounces in 1991. Nerco reduced its output 2.0 million ounces to 3.0 million ounces. Hecla, Pegasus, and Amax Gold all produced less silver as well, and Sunshine Mining continued to operate at 50% of capacity, or 2.6 million ounces annually.

Cominco resolved operating problems at its Red Dog property, more than doubling its by-product output to 2.4 million ounces from 1.1 million ounces in 1991. Echo Bay produced 7.5 million ounces of silver in 1992, one third more than the 5.6 million ounces it produced in 1991. Battle Mountain increased its silver output 46% to 1.4 million ounces. By-product silver production at most copper mines was stable to slightly higher.

Conditions in U.S. silver producing mines will be radically different in 1993. Asarco is scheduled to close its Troy silver and copper mine in the first quarter of 1993, citing low silver prices in its decision. Troy produced around 3.0 million ounces in 1992. During the first quarter, Kennecott announced the closure of its Greens Creek lead, zinc, and silver mine because of low prices for all three metals. In 1992, Greens Creek mined nearly 7.0 million ounces of silver. The shutdown was expected to be completed by the middle of April. Additionally, copper producers in the southwest suffered record rainfall and flooding in January and February, with the loss of some mine production. Meanwhile, a cut-back or closure at the Red Dog mine cannot be ruled out this year, in view of current

low lead, zinc, and silver prices. A combination of all of these factors could reduce U.S. silver mine output by five million ounces, to 56.0 million ounces or less in 1992.

Peru

Peruvian miners were battered by poor economic conditions, political upheaval, and low silver prices last year. Mine production in Peru declined more than 15%, to 48.0 million ounces from 56.9 million ounces in 1991. There is evidence that this downward trend will continue. This year Peru may produce 45.0 million ounces of silver. Only one large silver producer in the country is breaking even, and that company is profitable only because of the amount of by-product gold recovered from its ore.

Guerrilla attacks on mine sites have eased considerably, and the government efforts to immobilize the Shining Path movement appear to be succeeding. A nationwide strike called by the Shining Path's splintered leadership in early 1993 attracted few participants. However, the Peruvian government does not have much popular support and has been unable to improve economic conditions. In November 1992, the Fujimoro government briefly went into hiding following a failed military coup.

Even though disruptions by Shining Path adherents have waned, a large number of well-armed guerrillas continue to threaten the country and miners have not been able to lower their guard. Much of the money producers have saved through cost-cutting

measures has gone to fund large private armies to protect workers, property, and equipment.

Peru's silver miners continue to be hurt by low U.S. dollar silver prices and a deteriorating dollar/sol exchange rate. They must finance their operations with short-term loans at high domestic interest rates. Peruvian banks are charging 15% - 17% for dollar-denominated loans. Long and medium-term financing simply is not available.

Despite repeated pledges of government aid, there has been no substantive help from the public sector. On the contrary: Peruvian miners must pay income taxes in advance, and most often receive only a portion back even if a loss is shown. Miners also are burdened with a 2% tax on the value of their mineral assets. It should be noted that companies accounting for upwards of 45% of Peruvian silver mine capacity have sought government permission to close their operations. Some small and medium-sized operations simply have curtailed operations without official approval, a trend that could accelerate over the next year or so.

Canada

Canada has entered a period of lower silver mine production as well. Output fell 10.8% in 1992, to 36.3 million ounces from 40.6 million ounces in 1991. About 13 small and medium-sized base metals mines with by-product silver were closed in 1991, but the effect of these closures were not fully felt until 1992. Last year

reserves continued to fall sharply at the Equity Silver mine, and reserves were depleted at the Samostum mine.

This trend could continue next year, with output falling a further 2.1 million ounces to 34.2 million ounces. Equity Silver's reserves continue to erode, and more lead and zinc mines with by-product silver are expected to cut back or close. Total Canadian production is expected to decline this year, and then stabilize for several years.

Other Countries

Australian mine production rose to 41.0 million ounces in 1992, from 38.0 million ounces in 1991. Output in Australia could be flat to somewhat higher this year. All of Australian silver production is by-product at gold, copper, lead, and zinc operations. As several new mines came into operation in 1992, silver production rose.

Last year production from other market economies rose 13.5 million ounces to 112.4 million ounces, up 13.7% from 98.9 million ounces in 1991.

Chilean silver mine output jumped 53%, to 33.1 million ounces from 21.7 million ounces in 1992, as production at the huge La Coipa mine reached its peak. Silver mine production in Papua New Guinea rose 215,000 ounces to 3.5 million ounces.

Output also rose in Sweden, Portugal, and India. Brazilian output rose five-fold, to 5.0 million ounces, according to preliminary estimates.

These gains more than offset lower output in the Philippines and central Africa. We disagree with Philippine government statistics which show silver output rising slightly from 1991. With copper and gold production both down sharply last year, the silver production figure used in this report shows a sharp decrease since most Philippine silver output is a by-product of gold and copper mining. The flow of silver from these countries is expected to ebb in 1993, possibly drifting down to 99.9 million ounces. La Coipa, in Chile, is seen as producing 12.6 million ounces this year, down from 16.0 million ounces in 1992. Production in Papua New Guinea could fall nearly 1.0 million ounces, with sharply lower by-product output at the Misima and Porgera gold mines. The mining picture in the Philippines is showing signs of worsening, and the flow of silver from Zaire, Zambia, and Zimbabwe looks set to be lower this year.

Mine production in Yugoslavia has been revised downward in light of new data, to 3.4 million ounces in 1990, and 2.9 million ounces in 1991. Production held up well in 1992. The bulk of silver production is in Serbia, where economic activity has not been too greatly disrupted by warfare.

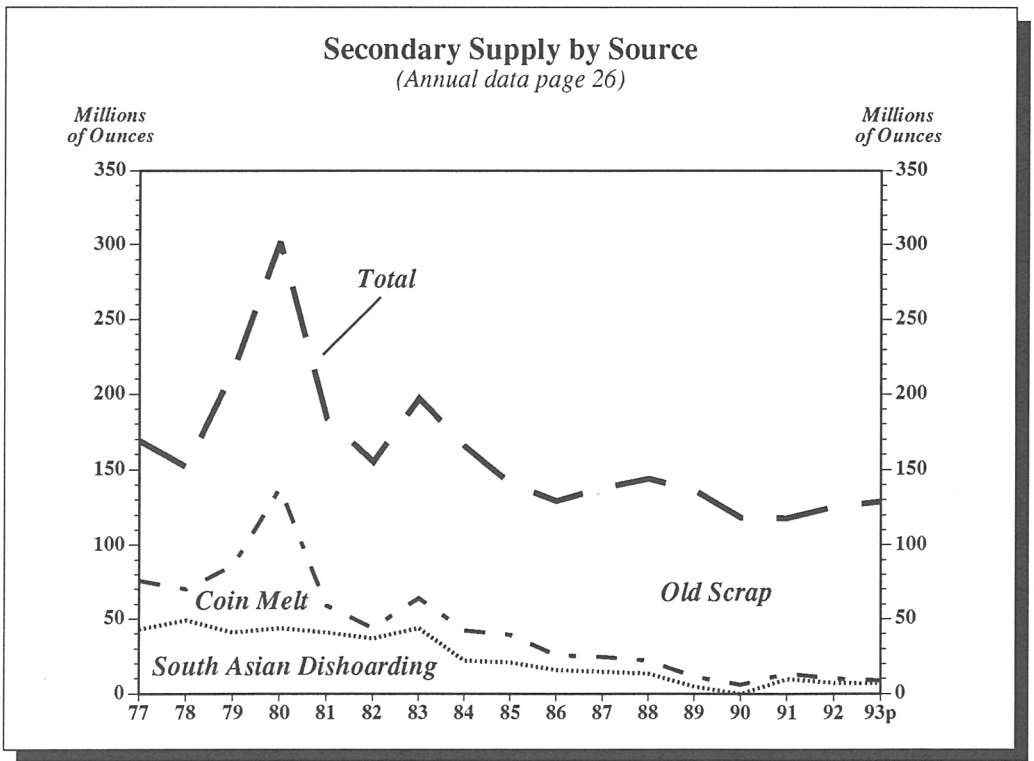
Secondary Supply

Secondary supply increased significantly in 1992, to 125.2 million ounces from 117.6 million ounces in 1991. The rise was due to greater recovery from old scrap. Worldwide recovery of old scrap was up 10.6 percent, expanding to 115.0 million ounces from 104.0 million ounces in 1991. The major sources of old scrap include used photographic materials, obsolete electrical equipment, spent chemical catalysts, old jewelry and sterlingware. Additional small amounts are recovered from old coins, and from jewelry and decorative objects in India. These two segments formerly were important sources of silver, but in recent years they have supplied only a few million ounces.

The flow of old scrap could increase a further 5.0 million ounces in 1993, to 120.0 million ounces. This could boost total secondary recovery 3% to 129.0 million ounces.

Most of the silver is recovered from spent photographic products. The amount of silver reclaimed from electronics continues to decline. Much of this silver-bearing material is now designated hazardous waste; few refineries are licensed to handle it, and others are reluctant because of stringent environmental regulations and possible legal implications.

Coinage, meanwhile, continues to fade as a source of secondary silver. In 1992, only 3.0 million ounces of silver were recov-



ered from coins, down from 4.0 million ounces the previous year. This year perhaps 2.0 million ounces of silver will come out of coinage.

Even Mexico's re-introduction of silver-bearing circulating coinage should do little to change this trend. In theory some of these coins, which are expected to use 23.0 million ounces of silver this year, could eventually become part of the secondary supply stream. Two factors minimize that possibility, however. First, the silver content of the coins is low – one-sixth of an ounce in each 10-peso coin and one-quarter of an ounce for each 20-peso coin. The possibility of the silver value of these coins exceeding their circulating value appears remote at this point. The coins are worth US\$3 and US\$6, respectively. More important, the coins are bi-metallic, which poses technical challenges on the refining level. This could make recovering silver from this potential source uneconomical for the foreseeable future.

South Asian disharding, historically in the form of sales of decorative items and jewelry in India, appears to be an ongoing component of supply again in that country, after several years of dwindling importance. The flow of silver from domestic scrap declined 25% in 1992 to 7.2 million ounces. However, the 1991 figure has been revised sharply upward, from 3.2 million ounces to 9.6 million ounces, because of new data from Indian trade sources.

Scrap recovery in India may be flat in 1993. Interestingly, the flow of scrap may be increasing from the industrial sector.

Most Indian scrap still comes from decorative items and jewelry, however, so that the increase in industrial materials is having a relatively small effect on total Indian scrap recovery rates.

Illegal imports of silver into India, which constitute the largest source of this country's silver supply, jumped to 48.2 million ounces last year from 32.6 million ounces in 1991. Another 4.8 million ounces were seized by government officials; of that, 1.3 million ounces were sold to domestic fabricators. Additionally, the State Bank of India imported 1.4 million ounces of silver for sale to Indian jewelry manufacturers in 1992.

Meanwhile, the Indian government in early 1993 relaxed its ban on silver imports. Each resident Indian and non-resident Indian returning to India from abroad now is allowed to carry into the country as much as 100 kilograms of silver twice a year, with a duty of 500 rupees, or \$16.70, per kilogram. While some silver is coming into the country under the new regime, smuggling continued at a fair pace during the first months of this program. The domestic silver price remained significantly higher than the international price at around \$8.00 per ounce in February, after the policy was announced. The duty and related costs for legally imported silver come to around 50 cents per ounce.

Other Supply

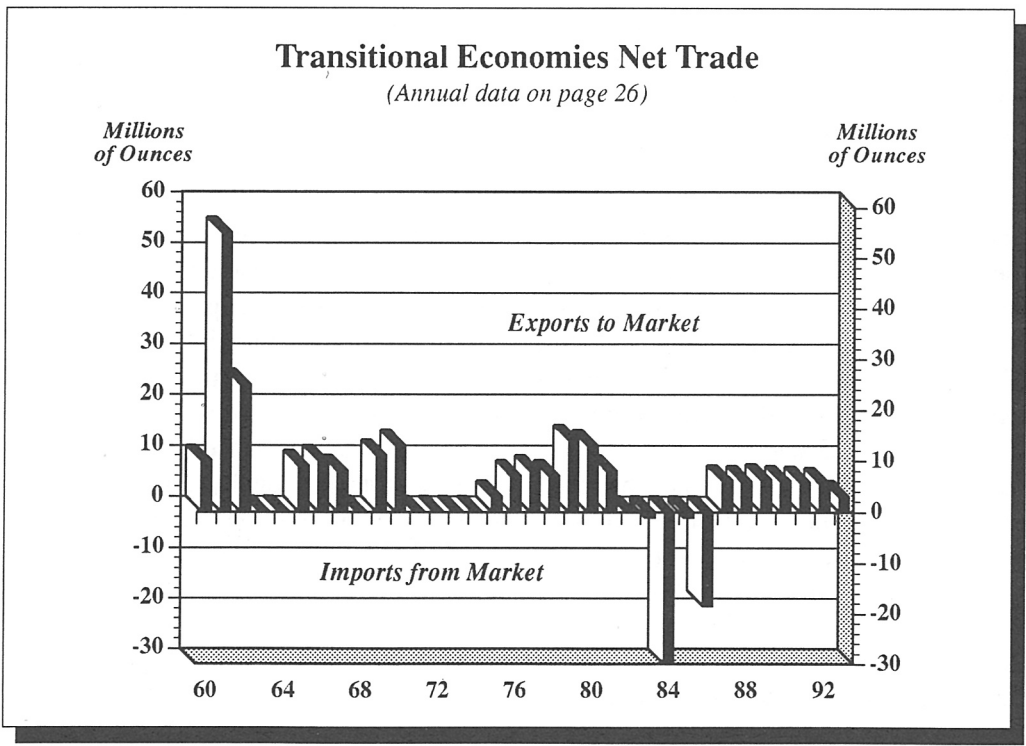
Silver supplies are derived from government disposals and net exports from the 'transitional economies' of Eastern Europe, Asia, and the former Soviet Union. The flow of silver into the market from these sources declined 21% last year, to 13.7 million ounces from 17.3 million ounces in 1991. These sources are expected to provide even less silver to the market this year, 13.0 million ounces.

The U.S. government continued to dispose of silver in the national defense stockpile through coinage programs. While Congress approved the massive disposal of other materials in the stockpile through auctions, a "special rule" was included in

the legislation requiring silver disposals to occur only through coinage. A target of 12.0 million ounces per year was set.

In 1991, 8.1 million ounces of U.S. stockpile silver was used in minting all U.S. silver-containing coins. This means that nearly one-third of world coinage requirements were fulfilled out of government stocks rather than being sourced from newly refined silver in the market.

It also should be noted that Mexican government stocks have remained stable in recent years, despite market rumors to the contrary. From the early 1980s into the 1990s, Banco de Mexico, the central bank, was responsible for buying domestic silver production, and supplying silver to domes-



tic users. As a result of these market transactions, from time to time silver inventories in the possession of the Banco de Mexico would fluctuate.

These stocks were segregated from the bank's long-term or official metal reserves, which remained stable throughout this period. Also, from time to time the bank will use official reserves on a temporary basis in its coinage programs, replacing these stocks through new purchases within a short time. Silver for the 10-Peso and 20-Peso coin programs is being sourced from new Mexican silver mine production, not from government stocks.

Production in Transitional Countries

Net exports of silver from transitional economies appear to be caught in a downward trajectory. Since 1989 the flow of this silver has declined more than 11%, to 5.6 million ounces in 1992 from 6.3 million ounces in 1989. Transitional economy silver coming into the market economies could decline 2.6 million ounces or more this year. The day when transitional economies as a whole become significant net importers of silver is fast approaching. Indeed, China, the most vibrant of these economies, already is a large net importer of silver.

Because of the lack of accurate data on demand for silver within transitional countries, the only statistic that factors into overall world supply/demand balance is the net export figure.

Revisions to transitional economy mine production continue to be made as more reliable data become available. Mine output for Bulgaria has been increased sharply beginning in 1986, for example, reflecting the start-up of several new mines. Bulgarian mine production now is shown at 2.3 million ounces in 1986; 2.5 million ounces in 1987; 2.7 million ounces in 1988; 3.1 million ounces in 1989; 3.2 million in 1990; and 3.1 million ounces per year in 1991 and 1992.

Romanian mine output has been revised downward, to 386,000 ounces in 1990 and 1991. Silver production in Romania was flat last year.

Meanwhile, Czechoslovakian output declined 30,000 ounces in 1992, to 550,000 ounces, with lower lead and copper production reported.

Poland produced slightly more silver last year, 28.94 million ounces compared with 28.90 million ounces in 1991. All of this silver was by-product of copper mining.

Mine output in the Commonwealth of Independent States, the former Soviet Union, fell 20% in 1992, to 39.0 million ounces from 48.7 million ounces in 1991. Despite the introduction of profit-sharing, cash incentives, and other benefits, production in Kazakhstan, the most important C.I.S. silver producer, was off 15% - 20% last year. Silver is produced as a by-product of zinc and lead in this central Asian country. In Russia, where silver also is produced as a by-product of nonferrous ore, lead production declined 13%, zinc

output was off 25%, and copper production was down 50%.

China produced more silver in 1992, with output possibly rising 6.7%, to 6.4 million ounces. Chinese precious metals production (and demand) figures are unreliable; production remains a state secret. While the numbers used in this report are the best estimates available based on Asian trade sources, there are indications that by-product silver output, especially from lead and zinc mines, may not be as high as reported.

Mine Production of Silver, 1960-1992

Million Troy Ounces

	Australia	Canada	Mexico	Peru	United States	Other Market Economies	Total Market Economies	Soviet Union	Other Transitional Economies	Total
1960	15.2	34.0	44.5	30.8	30.8	46.5	201.8	25.0	8.5	235.3
1961	13.1	31.4	40.3	34.2	34.8	50.1	203.9	25.0	8.0	236.9
1962	17.6	30.7	41.2	33.1	36.8	51.4	210.8	27.0	8.0	245.8
1963	19.6	29.8	42.8	35.2	35.2	51.4	214.0	28.0	8.0	250.0
1964	18.4	29.9	41.7	34.4	36.3	50.8	211.5	29.0	8.0	248.5
1965	17.3	32.3	40.3	36.5	39.8	52.2	218.4	31.0	8.0	257.4
1966	18.9	32.8	42.0	32.8	43.7	55.0	225.2	33.0	8.5	266.7
1967	19.8	37.2	38.3	32.1	32.3	55.0	214.7	35.0	8.5	258.2
1968	21.3	45.0	40.0	36.4	32.7	54.8	230.2	35.0	9.5	274.7
1969	24.5	43.5	42.9	35.9	41.9	60.0	248.7	37.0	10.0	295.7
1970	26.0	44.3	42.8	39.8	45.0	60.6	258.5	41.8	12.1	312.4
1971	21.8	46.0	36.7	38.4	41.6	62.8	247.3	43.3	13.1	303.7
1972	21.9	44.8	37.5	40.2	37.2	67.3	248.9	44.8	16.3	310.0
1973	22.7	47.5	38.8	42.0	37.8	65.2	254.0	46.4	17.2	317.6
1974	21.5	42.8	37.5	34.9	33.8	66.1	236.6	48.0	19.1	303.7
1975	23.3	39.7	38.0	37.5	34.9	65.6	239.0	49.8	21.1	309.9
1976	25.0	41.2	42.6	35.6	34.3	64.2	242.9	49.8	25.3	318.0
1977	27.5	42.2	47.0	39.1	38.2	69.3	263.3	49.8	28.0	341.1
1978	26.1	40.7	50.8	37.0	39.4	72.8	266.8	49.8	31.4	348.0
1979	26.7	36.9	49.4	41.9	37.9	79.2	272.1	49.8	30.5	352.4
1980	25.0	34.4	47.3	44.8	32.3	82.6	266.5	49.8	32.3	348.6
1981	23.9	36.3	53.2	42.6	40.7	86.5	283.2	50.5	28.1	361.8
1982	29.2	42.2	49.8	54.4	40.2	82.3	298.0	51.0	28.4	377.4
1983	33.2	38.7	55.0	55.6	43.4	87.7	313.6	51.4	29.2	394.3
1984	31.3	42.0	63.9	53.3	44.6	89.5	324.5	51.4	32.1	408.0
1985	34.9	38.5	69.2	54.9	39.4	93.1	329.9	52.1	35.1	417.1
1986	32.9	35.0	69.4	59.9	34.2	88.9	320.3	52.4	36.9	409.6
1987	35.9	38.1	69.8	63.6	39.8	91.0	338.2	52.5	37.1	427.8
1988	35.8	44.1	70.0	47.7	53.4	93.0	344.0	53.0	45.1	442.1
1989	37.3	41.3	70.0	56.8	60.8	92.2	358.4	54.0	45.7	458.2
1990	37.8	44.4	67.9	55.6	66.5	97.5	369.6	51.3	38.1	458.9
1991	38.0	40.6	62.7	56.9	61.0	98.9	358.1	48.7	40.5	447.3
1992	40.1	36.3	65.0	48.0	61.0	112.4	362.8	39.0	41.0	442.7

Notes: Totals may not equal the sums of countries due to rounding.

Sources: *U.S Bureau of Mines, American Bureau of Metals Statistics, Statistics Canada, The Silver Institute, Andean Report, Consejo de Recursos Minerales Mexico, Australian Bureau of Mineral Resources, government agencies, trade sources, CPM Group*

Secondary and Other Supplies

Million Troy Ounces

	Secondary				Other		Total Secondary and Other	U.S. Treasury Sale	U.S. Treasury Coinage	Total
	Old Scrap	Demone- tized Coin	Indian Scrap used Domestically	South Asian Exports	Gov't. Disposals	Net Exports from T.E.				
1960	40	10	2	0	12	10	74	22	46	142
1961	43	20	2	0	7	55	127	63	56	246
1962	47	20	2	0	4	25	98	1	77	176
1963	50	15	3	0	10	0	78	25	112	215
1964	54	20	12	0	20	0	106	151	203	460
1965	57	30	16	0	17	9	129	80	320	529
1966	61	28	16	0	10	10	125	143	54	322
1967	59	35	15	17	5	8	139	195	44	378
1968	75	50	16	86	15	0	242	180	37	459
1969	80	50	16	28	0	11	185	89	19	293
1970	55	25	16	31	10	13	150	67	1	218
1971	68	20	16	23	7	0	134	—	—	134
1972	73	15	13	11	12	0	124	—	—	124
1973	72	15	13	22	46	0	168	—	—	168
1974	82	35	15	60	21	0	213	—	—	213
1975	90	20	13	54	15	3	195	—	—	195
1976	92	72	18	53	11	7	253	—	—	253
1977	93	33	18	25	5	8	182	—	—	182
1978	82	21	21	28	9	7	168	—	—	168
1979	130	45	23	18	3	14	233	—	—	233
1980	164	94	23	21	5	13	320	—	—	320
1981	125	18	27	14	4	8	196	—	—	196
1982	111	7	23	14	3	0	158	—	—	158
1983	133	20	23	21	21	-1	217	—	—	217
1984	124	20	21	1	18	-30	154	—	—	154
1985	102	18	21	0	13	-1	153	—	—	153
1986	103	10	16	0	14	-18	125	—	—	125
1987	113	10	15	0	20	6	164	—	—	164
1988	122	9	13	0	8	6	158	—	—	158
1989	125	6	5	0	11	6	153	—	—	153
1990	112	6	0	0	11	6	135	—	—	135
1991	104	4	10	0	12	6	136	—	—	136
1992	115	3	7	0	8	6	139	—	—	139
1993p	120	2	7	0	10	3	142	—	—	142

Note: Government Disposals includes silver used in coins from stocks and bullion sales from governments other than the United States for the years through 1970. The U.S. Treasury bullion sales and the use of silver from the U.S. Treasury stocks in coins during the 1960s are separated. After 1970, U.S. government bullion sales and use of government stocks in coinage are included in the Government Disposals category.

p — projections.

Sources: U.S. Bureau of Mines; Handy & Harman; Samuel Montagu; The Silver Institute; trade sources; CPM Group

FABRICATION DEMAND

The use of silver in fabricated products totaled 590.3 million ounces 1992. This was 2.0% more than the 578.8 million ounces used in 1991.

Silver use is projected to rise more vibrantly in 1993, possibly increasing 5.9% to 625.0 million ounces.

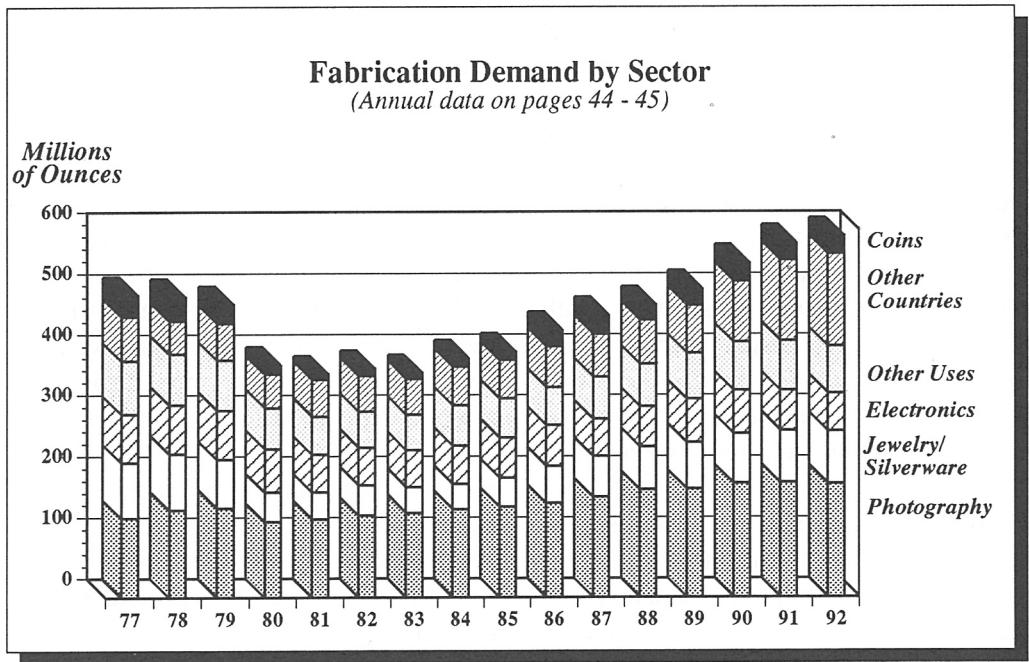
In 1992 silver use declined in most important end uses in the major industrialized countries of Europe, the United States, and Japan. Demand rose sharply in India, accounting for much of the increase in demand.

Total demand rose 11.5 million ounces in 1992. Indian use rose 13.3 million ounces, while Thai silver use rose 4.1 million

ounces. Silver use in Mexico rose 8.3 million ounces, mainly due to the introduction of the silver-bearing 10-Peso circulating coins and higher bullion coin sales. Declining silver use in the United States (where use was off less than one million ounces, or 0.6%), Japan, Germany, and France offset some of these increases.

Total fabrication demand statistics for 1990 and 1991 have been revised upward as a result of research conducted over the past year designed to better measure silver use in Taiwan, South Korea, Thailand, Hong Kong, and other countries.

The estimate for silver demand in 1991 was increased 6.9% or 37.5 million ounces, to 578.8 million ounces from the



541.3 million ounces reported previously. This reflected a sharp increase in silver use in Thailand of 19.4 million ounces, from 11.0 million ounces in 1990 to 30.4 million ounces in 1991. This increase alone accounted for a large part of the revision in 1991 data. Additionally, Indian silver use for 1991 was revised upward 5.9 million ounces. Overall, rising demand in Asian developing countries was responsible for the revision.

As a result of these revisions, total silver use in 1991 is estimated to have risen 5.9% from 1990 levels. Earlier estimates had shown a 0.1% decline in silver use in 1991 over 1990 levels, which would have been the first decline in world total fabrication demand since 1983.

The total silver use figures for 1990 was raised 0.8% to 546.3 million ounces from the 542.1 million ounces shown in last year's *WORLD SILVER SURVEY*.

Detailed discussions of silver use in the three major industrial applications — photography, jewelry and sterlingware, and electronics and electrical contacts — in the major industrialized countries are presented on the following pages, along with a discussion on silver use in other countries. Discussions and statistics on silver use in 12 major countries are presented in a separate section later in this report.

As part of an ongoing effort to improve the available statistical portrait of the silver market, this report has expanded its research program to include five additional

countries: The Netherlands, Thailand, South Korea, Taiwan and Hong Kong.

This project has taken on added importance over the past two years as fabrication demand for silver has risen strongly in newly industrializing countries in Asia, even as the major industrialized economies have been mired in recession. As a result of these divergent trends, silver users in East Asia have gained market share at the expense of the six major industrialized nations.

In 1991, silver use in the six major industrialized countries fell 4.6 million ounces from the year before, at 395.7 million ounces. World total silver use rose 5.9%, however, fueled by strong increases in silver use in India, Thailand, and South Korea.

In 1992, silver use fell 2.6% in the six major industrial countries. This was more than offset by a 19.9% rise in silver demand elsewhere.

As recently as 1990, the six major countries accounted for 73.2% of world total silver use. Including India, the share of total world demand in 1990 rises to 81.5%. The five countries for which statistics now have been developed accounted for 4.7% of world demand in 1990.

By 1992, the six major countries accounted for 53.2% of world demand; with India the share was 75.1%. The five new countries' share of silver demand had risen to 9.3%.

Photography

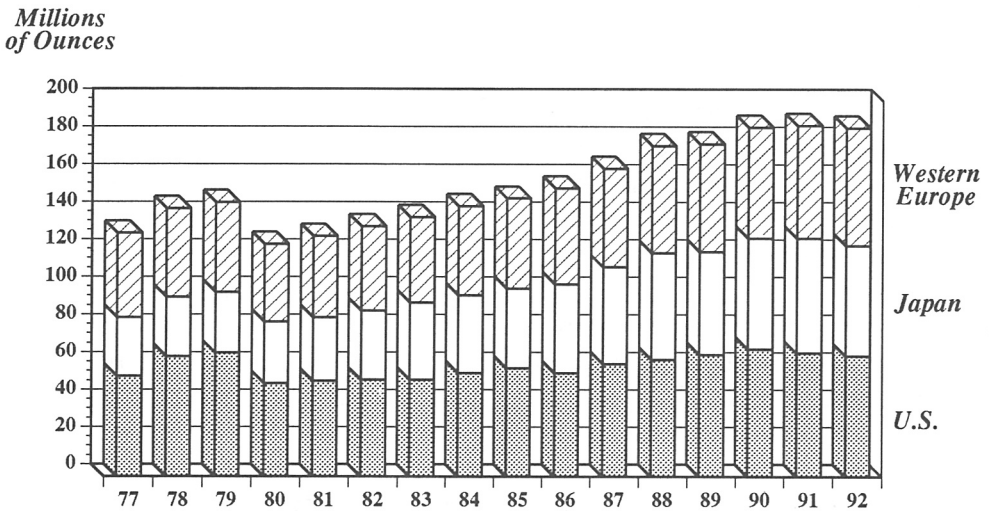
Silver use in photography in Western Europe, Japan, and the United States totaled 185.6 million ounces in 1992. This was about 1.4 million ounces, or 0.7%, less than photography used in 1991. Photographic use of silver rose in Europe, but fell in both the United States and Japan.

Silver use in photography in the United States decreased 2.4%, or 1.6 million ounces, from 66.0 million ounces in 1991 to 64.4 million ounces in 1992. The bulk of the decline was in commercial photography, although the medical and other x-ray segments also suffered, along with photo products used in graphic arts, publishing, and advertising.

Silver use in Western Europe rose 4.0%, from 60.0 million ounces in 1991 to 62.4 million ounces in 1992, surpassing Japanese silver use in this industry for the first time since 1989.

Growth was not homogenous in the European photographic industry, however. Germany, the largest user, experienced a 4.8% decline in its silver use, from 16.7 million ounces in 1991 to 15.9 million ounces last year. The United Kingdom meanwhile saw a 4.0% increase, from 12.5 million ounces to 13.0 million ounces. France, the third largest user of silver in photographic products in Europe, saw a rise of 3.7%, from 10.9 million ounces to 11.3 million ounces. Italian silver use in this industry is smaller, with only one com-

Photographic Demand for Silver
(Annual data pages 44 - 45)



pany involved, and rose 8.7%, from 2.3 million ounces to 2.5 million ounces.

One reason for the discrepancy between the contraction in Germany and the increase in the U.K. and France had to do with currency market conditions: The higher Deutschemark and weaker British Pound and French Franc helped silver nitrate manufacturers in Britain and France compete against German counterparts in the export market.

The data here measures silver use in the manufacture of chemicals used in photography, regardless of where the chemicals ultimately are used. In most cases the chemicals are used in the same countries in which they are produced, but some are produced in France, the United Kingdom, and Germany, and then exported to photographic product manufacturers in Belgium, the Netherlands, and other countries. Thus, the currency market fluctuations can have an effect on silver use in this sector.

Japanese silver use in photography fell 3.6%, from 61.0 million ounces in 1991 to 58.8 million ounces in 1992. This 2.2 million-ounce decline was the largest of the three regional markets.

Silver use fell most sharply in Japanese commercial photography. Consumption for x-rays used in medical, dental, and industrial applications appears to have held flat in 1992 on a total basis, although different manufacturers reported sharply varying conditions in this market. Silver use in industrial graphics declined slightly.

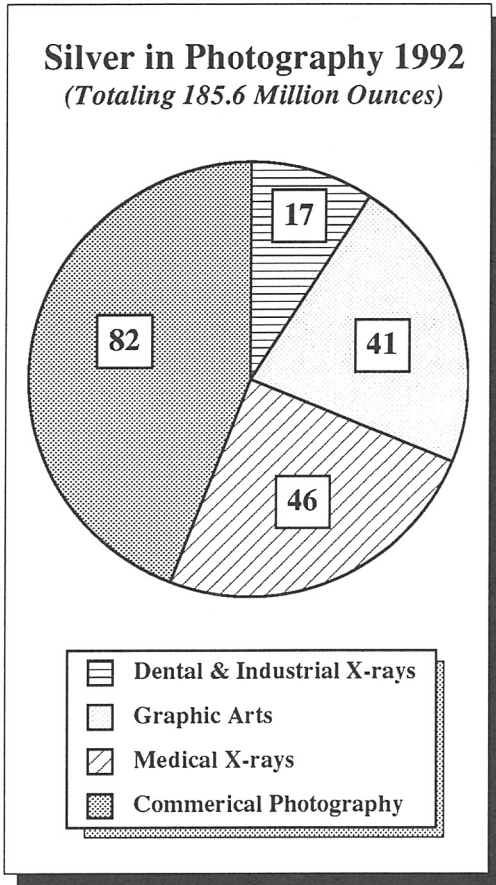
Small amounts of silver were used in other countries, including Australia, India, and Mexico, but accurate historical statistics are not available. Indications are that silver use in photochemical products outside of the three major industrial regions covered in these statistics total less than 10.0 million ounces per year. Around 6.0 million ounces are used annually in Mexico, while Indian use in photography has declined from a peak of 5.6 million ounces in 1990 to 2.6 million ounces per year in both 1991 and 1992.

Commercial Photography

Commercial photography is defined in this report to include amateur and professional photography, using standard films and papers, including both black and white and color.

This sector is the largest segment of the photographic market in terms of silver use. In 1992 an estimated 81.7 million ounces of silver were used in commercial photography in the United States, Japan, and Western Europe. This represented 44% of total silver demand for photographic applications, down from 45% in 1991. Commercial use was 3.0% less than the 84.2 million ounces estimated to have been used in this sector in 1991.

Photographic companies reported mixed conditions in silver demand during 1992, although most of them reported flat to lower silver requirements. Japanese photo product manufacturers experienced the weakest conditions, along with German manufacturers. Companies involved in in-



silver rose 2.4%, or 1.5 million ounces, from 61.7 million ounces in 1991 to 63.2 million ounces in 1992.

The x-ray market itself can be divided into subsections, namely, medical, dental, and industrial applications. Medical x-rays are the largest sector. In 1992 medical x-rays used an estimated 46.2 million ounces of silver. This was up 2.9% from 1991's 44.9 million-ounce level. It represented 25% of total silver use in photography.

The growing use of sophisticated medical diagnostic equipment such as CAT-scans and nuclear magnetic resonance continues to stimulate increased use of x-ray films for recording these images. However, recessionary economic conditions and insurance company constraints on medical expenditures and practices limited the expansion in 1992.

X-ray films also are used in dental examinations and in industrial applications, for example in examining the integrity of welds in heavy construction and testing for metal fatigue in aircraft.

Silver use in these applications rose 1.2% in 1992 to 17.0 million ounces, from 16.8 million ounces in 1991. Dental and industrial x-rays account for around 9% of photographic silver requirements.

stant photography and disposable cameras generally experienced better demand for their products in 1992 than did their counterparts in standard films and papers. Nonetheless, the growth in disposable cameras was less vibrant than it had been in 1991.

X-rays

X-ray films used more silver last year than they did in 1991, in contrast to silver use trends in commercial photography and graphic arts applications. Total x-ray use of

Graphic Arts

Another 40.7 million ounces of silver were used in graphic arts applications in 1992, including photographic materials used in the production of magazines, newspapers,

and advertisements. This was off 1.0% from 41.1 million ounces in 1991. These industrial applications accounted for 22% of silver use in overall photography last year, down 1% from 23% of photography's silver use the year before.

Trends in Photographic Silver Use

Possibly the most notable development in the photographic market in 1992 has been the emergence of Eastman Kodak's Photo CD technology. Kodak has begun marketing a program in which standard film is used in taking the initial pictures. When the film is developed at participating photo finishing outlets, the consumer has the option of receiving a compact disc with the pictures digitally stored on it in addition to the traditional paper prints. Consumers can then purchase a Photo CD player that attaches to their television, allowing them to view their still photos on the television, as well as having the hard copies.

This product line only now is beginning to be marketed, and it is too early to judge either consumer acceptance of the technology or its likely impact on the photographic market. Kodak has said that it expects the advent of Photo CDs and other electronically stored photo media to increase consumer use of photo products, and consequently lead to an increase in silver use in commercial photography. Other industry specialists are less optimistic for Photo CDs, and believe this technology will have a minimal impact on consumer photo use trends and photo use of silver.

Other efforts at electronic imaging appear to have been down-graded by manufacturers, in part because of consumer resistance to their expense, bulkiness, technical difficulty, and poor resolution.

Another area of innovation and engineering research in recent years has been in alternatives to silver-based chemistry in some medical x-ray technologies. Several efforts to launch alternate chemistries were attempted in the late 1980s and early 1990s. As of early 1993, manufacturers have reported poor reception on the part of the medical profession for these products.

Jewelry and Silverware

In 1992 a total of 84.9 million ounces of silver were used in jewelry and silverware in Western Europe, the United States and Japan. Of this total, the vast majority was used in Western Europe, where 71.8 million ounces of silver were used in the manufacture of these products.

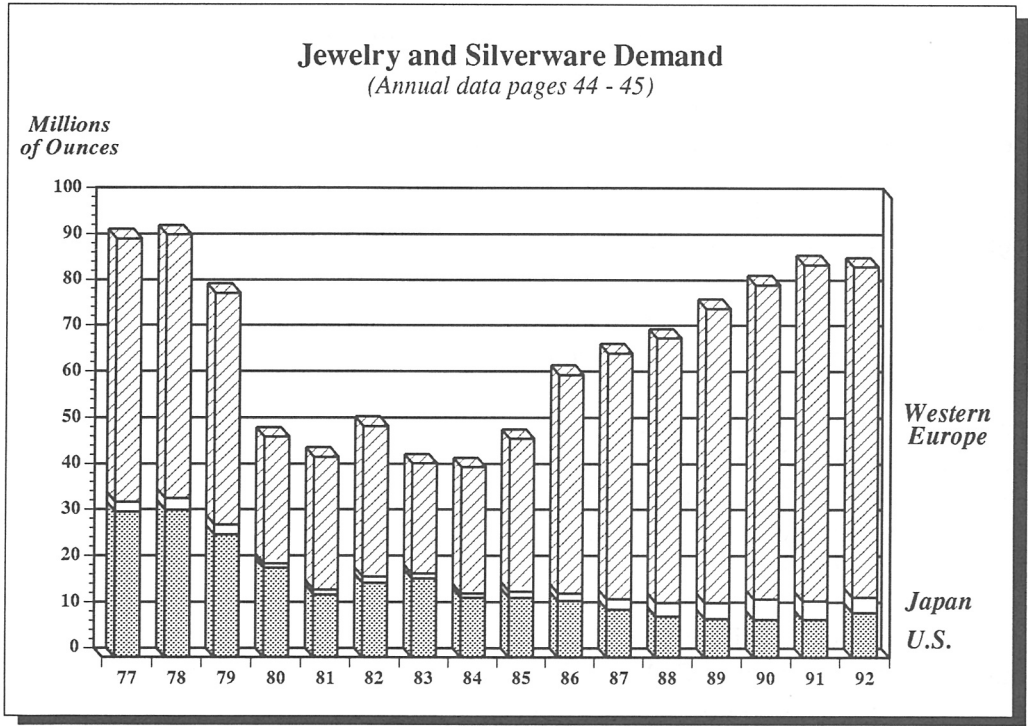
This sector of the silver market may be divided into three subsections: jewelry, sterlingware, and silverplated decorative items. Sterlingware is the largest user of silver.

Within Europe, Italy is by far the largest consumer of silver in these applications. Italian demand for silver is mostly for the manufacture of sterlingware where use to-

taled 38.6 million ounces in 1992, up from 37.0 million ounces the year before. Much of the sterlingware manufactured in Italy is exported, with strong markets in the United States, other European countries, Latin America and some Asian countries.

Italian jewelry use of silver meanwhile totaled 5.5 million ounces in 1992, unchanged from 1991. Little silver is used in silverplate in Italy, due to domestic consumer distaste for the products and lack of export markets. Silverplate demand was unchanged at 600,000 ounces in 1992.

Silver use in these industries in the rest of Europe pales in comparison to Italian demand. Germany is the next largest manufacturer. In 1992, German silver use in jewelry and sterlingware combined totaled



13.5 million ounces. This was 6.9% less than in 1991. French silver use in both sterlingware and jewelry totaled only 2.3 million ounces last year, 8.0% lower than the 2.5 million ounces used in these industries in 1991. Silver use in jewelry and sterlingware in the United Kingdom was basically unchanged at 1.5 million ounces in 1992, after a drop from 2.1 million ounces in 1990 to 1.5 million ounces in 1991.

United States demand for silver use in these applications totaled 9.8 million ounces in 1992, up 18% from 8.3 million ounces in 1991. Consumer demand for sterling silver decorative and gift items has been strong in the United States, as has demand for silver jewelry. Use of silver in sterlingware is estimated to have risen 11.4% to 3.9 million ounces from 3.5 million ounces in 1991. Jewelry use of silver rose an estimated 50%, to 3.0 million ounces from 2.0 million ounces the year before. Silver use in silverplate, which has a greater acceptability in the United States, rose slightly, from 2.8 million ounces in 1991 to 2.9 million ounces in 1992.

Japanese silver use in these applications never has been high relative to demand in Europe and the United States. In 1992 economic conditions continued to limit consumer demand for silver jewelry and decorative objects. Silver use fell 17.5%, from 4.0 million ounces in 1991 to 3.3 million ounces in 1992.

Additional amounts of silver used in these industries has been identified in other countries. As discussed elsewhere in this

report, research this year shows significant demand for silver in these applications in various Asian countries.

India used 16.1 million ounces in jewelry last year, and another 14.4 million ounces in sterling decorative objects. Combined, these uses accounted for 52.8% of India's total demand. Silver use in jewelry rose 67.7%, from 9.6 million ounces in 1991, the first year for which data was available to divide jewelry from silverware. Silver use in decorative silverware products rose 56.5%, from 9.2 million ounces in 1991.

Thailand, as discussed in the country survey in the next section of this report, used an estimated 31.0 million ounces of silver in jewelry last year, and another 3.4 million ounces in silverplated decorative items such as cigarette cases, lighters, and picture frames. Another 4.8 million ounces were used in South Korea for silverplated and sterling objects. Sterling silver chopsticks and spoons are especially popular children's gifts in Korea, making this the largest end-use for silver in that country.

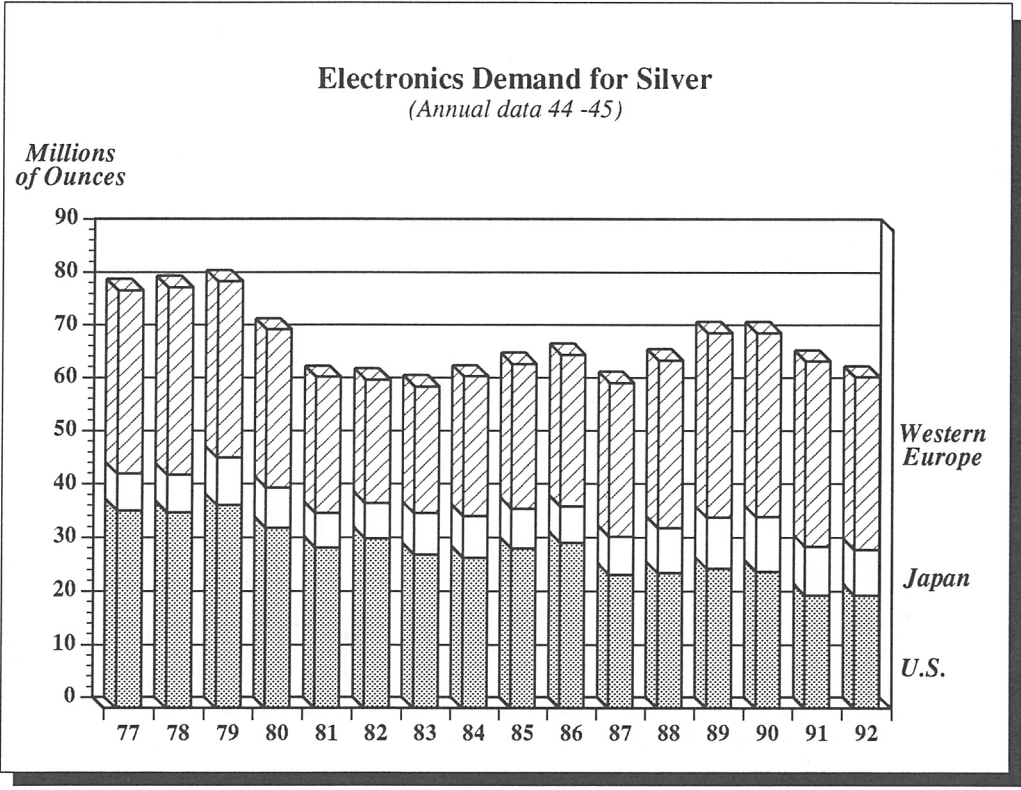
Electronics

Silver in electronic connectors, electrical contacts, and batteries in the major industrial markets fell 4.6%, to 62.2 million ounces in 1992 from 65.2 million ounces the year before. The decline in 1992 followed a 7.6% drop in 1991 and zero growth in silver use in these applications in 1990.

The extended weakness in demand for silver is a direct result of recessionary conditions in the international electronics and electrical appliance industry. It also reflects, to a lesser extent, a shift away from use in these industries in the major six industrial economies toward silver use in emerging industrial economies. For ex-

ample, silver use in Taiwan in electroplating, primarily for electronic applications, rose from 1.6 million ounces in 1990 to 2.3 million ounces last year. In Korea silver use in electronics rose from virtually nothing — 3,200 ounces in 1989 and 8,000 ounces in 1990 — to 643,000 ounces in 1991.

Despite shifts in location, silver remains an important raw material in several electrical and electronic components. Silver has lost some market share to gold in electronic applications, as gold prices have declined in the past few years. Even so, most manufacturers continue to use silver in their electrical appliances.



Other Industrial Uses

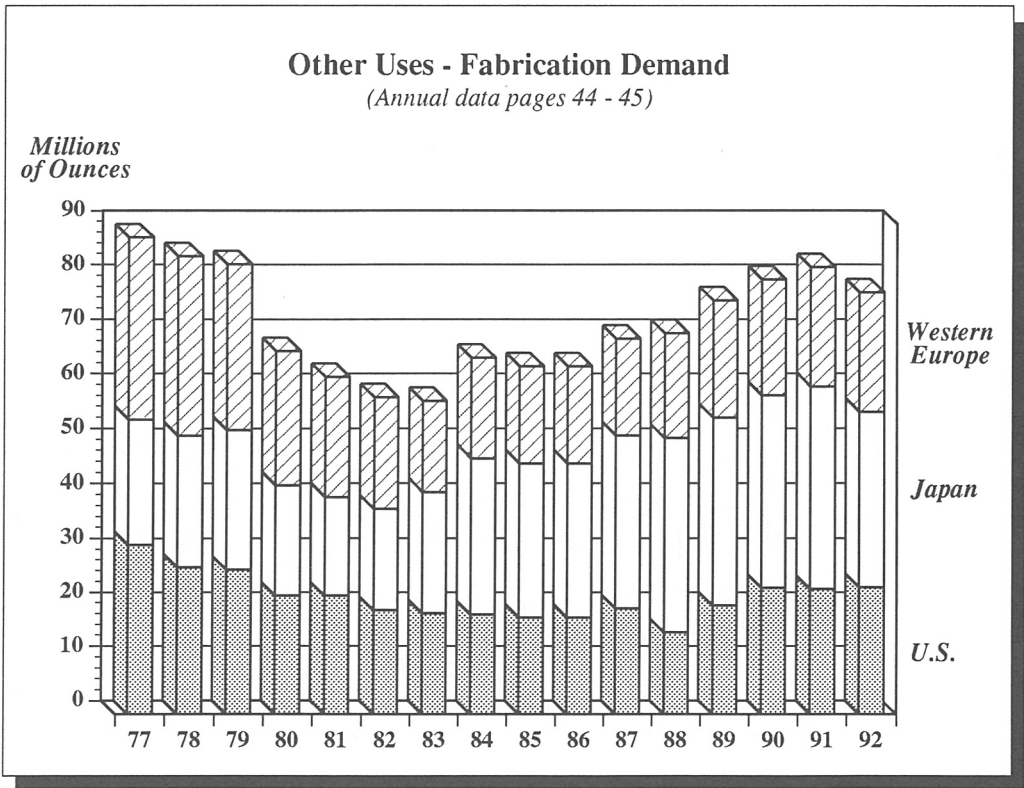
Another 13.7% of total silver demand was used in a variety of smaller applications in the six major industrialized economies. These uses include brazing alloys, mirrors and catalysts. In 1992 silver demand in this category totaled 77.3 million ounces, down 5.6% from 81.9 million ounces in 1991.

In the United States, 23.3 million ounces of silver were used in these sectors. This was up 300,000 ounces from 23.0 million ounces in 1991. In Japan these applications used 32.1 million ounces of silver in 1992, down 13.5% from 37.1 million ounces the year before. In the four major Western European markets silver use in these indus-

tries totaled 21.9 million ounces last year, up slightly from 21.8 million ounces in 1991.

Brazing alloys and solders used 4.5 million ounces of silver in Japan in 1992. Another 10.5 million ounces are used in Western Europe. This was down slightly from 1991 levels. Statistics are not available on U.S. silver use in solders, but consumption is estimated at around 5.0 million ounces per year.

Another 3.0 million ounces per year were used in the manufacture of mirrors. About 1.2 million ounces were used in the United States, and 1.8 million ounces in Europe.



U.S. manufacturers used an estimated 3.8 million ounces of silver in the manufacture of silver catalysts, primarily used in the manufacture of ethylene oxide, in 1992. This was up from 3.3 million ounces the year before.

Statistics for Japanese demand do not distinguish between silver use in mirrors, catalysts, and other applications using similar chemicals. Japanese statistics report non-photographic use of caustic silver, which includes these various uses. In this area Japanese demand was 8.0 million ounces in 1992, down from 9.0 million ounces in 1991 and 10.1 million ounces in 1990.

Slightly more than 1.1 million ounces of silver are used in dental applications in Europe each year. Another 2.8 - 3.0 million ounces are used in the United States in dental alloys annually, although detailed statistics are not available.

Other Countries

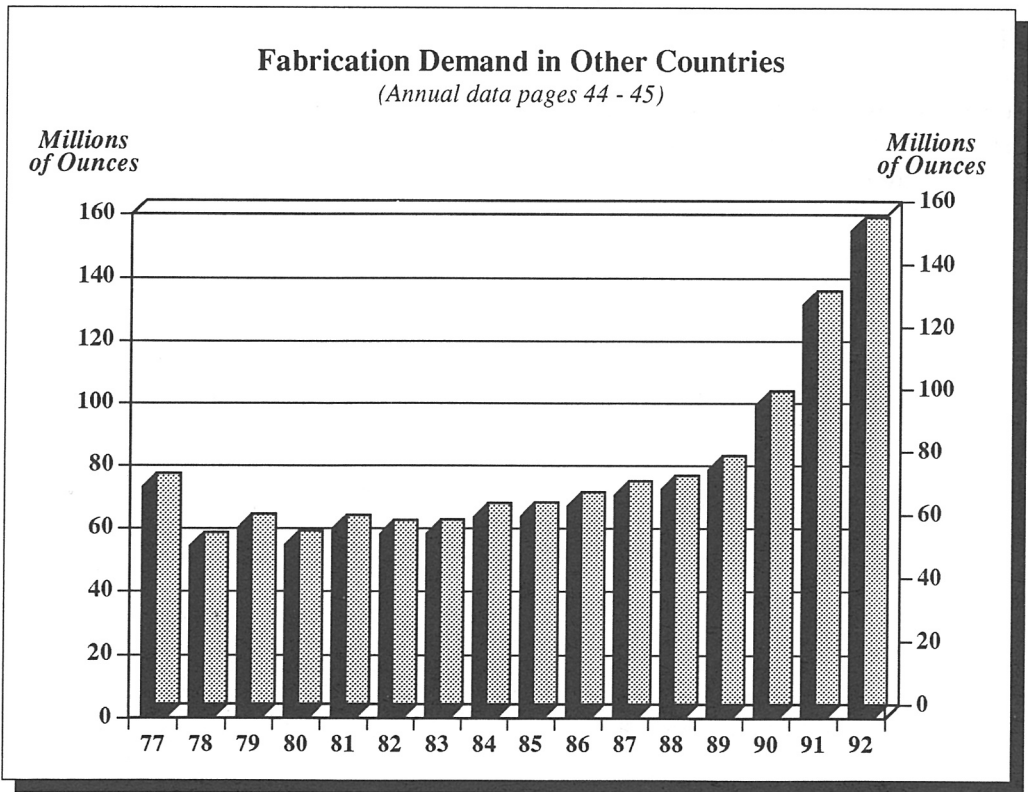
In addition to the silver demand by industrial sector measured in the major consuming nations, another 150.9 million ounces of silver was used in numerous other countries. This was 19.3 million ounces, or 14.7%, higher than the 134.9 million ounces used in these countries and regions in 1991.

Silver use in India accounted for 13.3 million ounces of this increase. Mexican silver use rose 4.3 million ounces (not counting the 4.0 million ounces used in 10-Peso coins), while silver demand in Thailand was 4.1 million ounces higher than in 1991.

The next section of this report reviews silver demand by country. In addition to the four largest European consuming nations, Japan, the United States and India, this year's survey provides detailed statistics on silver use by industrial sector in the Netherlands, Thailand, South Korea, Taiwan and Hong Kong. Combined, these five countries used 55.0 million ounces of silver last year, mostly in electronics, jewelry, and silver decorative items.

Asia

Looking at the four Asian countries for which better data now are available, it can be seen that silver use in these countries rose sharply in 1991. In 1990 these four



countries used a combined 24.2 million ounces of silver. In 1991 their silver requirements almost doubled, reaching 48.0 million ounces. Last year demand in these countries rose a further 5.7 million ounces, 11.9%, to 53.7 million ounces.

Further research is underway to delineate demand trends in other countries in Europe, Asia, Latin America and Oceania. Current research indicates that silver use outside of those countries now delineated totaled around 15.0 million ounces in 1992, up from 14.3 million ounces in 1991.

Europe

Outside of the major four European national markets – Italy, Germany, France and The Netherlands – approximately 40.1 million ounces of silver are estimated to have been used in 1992.

Probably the fifth largest silver user in Europe is Belgium, where most of the silver consumed is used in photographic products. Around 20.0 - 22.2 million ounces are used annually in Belgium. Apart from photographic applications, extremely small amounts are converted into chemicals for use in manufacturing mirrors, chemical process catalysts, and batteries. Equally small amounts are converted into sheet and other milled products for use in sterlingware and jewelry within Belgium.

The statistics in this report measure silver where it is used, as opposed to where silver products are sold. For example, silver

made into semi-manufactured products in Germany for use by Belgian silversmiths would appear as German demand for silver in this report. Similarly, silver converted to chemicals for application to photo films and papers in Belgium, the Netherlands, or other countries would show up in France, Germany, or whatever country was the site of the initial use of silver bullion in the manufacture of silver bearing photochemicals.

Spanish silversmiths and jewelers are world renown for the quality of their products. Initial research points to silver use in Spain on the order of 6.0 to 8.0 million ounces per year. The overall production of jewelry and sterling in Spain is higher than this, but much of the silver used is fabricated into milled shapes in the United States, and thus appears in U.S. statistics. The Spanish silver market has had a difficult time in the past two years, with some contraction in this market.

Swiss silver use is estimated to be on the order of 4.0 or 5.0 million ounces per year. While a tremendous amount of silver passes through Switzerland each year, little appears to be used within the country for fabrication purposes.

The Netherlands used 1.3 million ounces of silver last year, as outlined in the **Country Reports** section of this survey.

Combined silver use in Austria, Portugal, Greece and the Scandinavian countries is believed to be less than 6.0 million ounces per year.

Mexico

Silver use in Mexico for industrial purposes and jewelry was around 14.7 million ounces in 1992, in the official market. Slightly more than half of this was used in the manufacture of photographic films and papers. The next largest use was in jewelry and decorative objects. There does not appear to be much demand for sterling-ware in Mexico, although efforts are under way by at least three groups to stimulate such a consumer market. Finally, a small amount of silver was converted into chemicals for use in electronics and electrical contacts in Mexico.

Additional amounts of silver are used in an 'indigenous' market, in which old scrap is melted and reused in remote local markets. Neither the amount of scrap supply nor the amount of demand met by such supply is included in statistics for the international market.

One of the most dynamic developments in the international silver market is occurring in 1992 and 1993 in Mexico. In late 1992 the Banco de Mexico began minting and issuing silver-bearing circulating coins. Initially the Mint issued 10-Peso coins (worth around US\$3) each containing one-sixth ounce of silver. In 1992 the Mint used 4.0 million ounces of silver in these coins. In 1993 it expects to use another 7.0 million ounces making 10-Peso coins. Additionally, the Mint began striking 20-Peso coins in January 1993, for issuance beginning in the middle of the year. Each 20-Peso coin will contain one-quarter ounce of silver. The Mint expects to use 16.0

million ounces of silver in this program during 1993.

The Mexican government's use of 4.0 million ounces of silver in 10-Peso coins in 1992, increased total Mexican silver use in 1992 to 14.7 million ounces. In 1993 the Mint will use 7.0 million ounces of silver in 10-Peso coins and 16.0 million ounces in 20-Peso coins. Industrial use of silver in Mexico is projected to be stable around 14.7 million ounces this year, so that total silver use in Mexico, including the new circulating coinage, will be 33.7 million ounces.

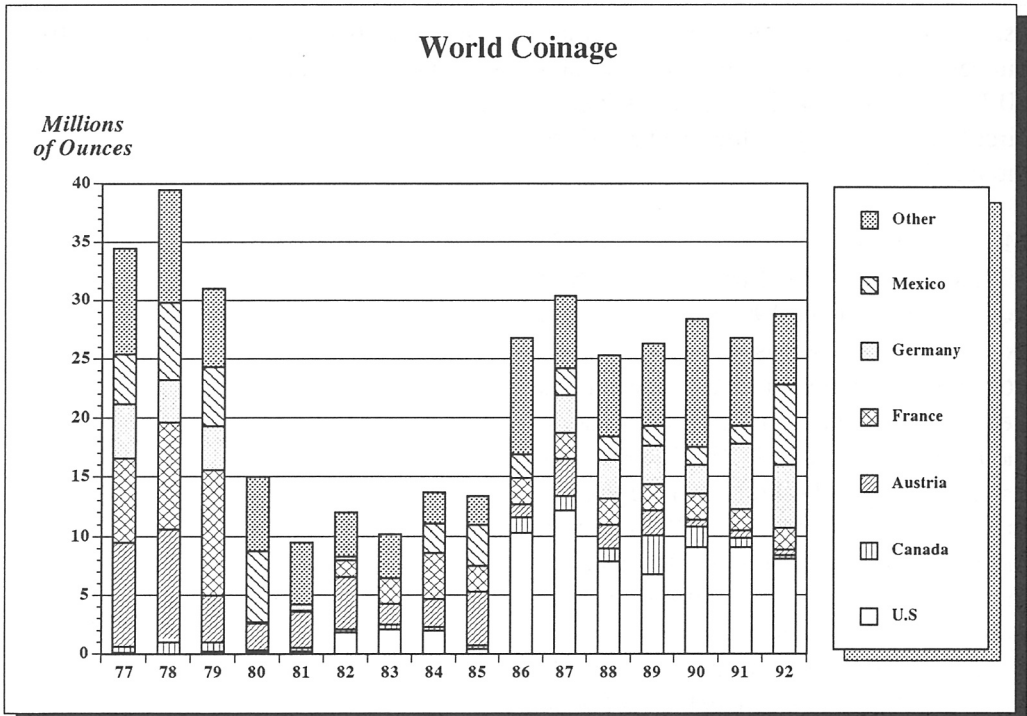
Coinage

Silver use in coinage totaled 29.4 million ounces in 1992, up 6.1% from 27.7 million ounces in 1991. This was due to the use of 4.0 million ounces of silver in the new 10-Peso circulating coins in Mexico. Without these coins, silver use in coinage would have been 25.4 million ounces in 1992, down from the year before.

Mexico continues to produce the 10-Peso coins in 1993, and is adding a 20-Peso coin. Combined these two programs are projected to use 23.0 million ounces of silver. These Mexican coin programs, and a revival in investor demand for bullion coins, is expected to boost 1993 coin use of silver to 50.7 million ounces.

Investors abstained from coin purchases for the first half of 1992, then started returning to the market in September. Purchases rebounded significantly in the final quarter, and remained at higher, although by no means record levels, in early 1993.

Demand for American Eagle bullion coins declined for the second year in a row in 1992. These coins declined 20.3% to 5,544,000 ounces, from 6,952,000 ounces the previous year; proof Eagles rose 6%, to 503,828 ounces. Total Eagle sales tumbled 18.6% in 1992, to 6,047,928 ounces from 7,428,928 ounces in 1991. In the second half of 1992, however, demand for uncirculated Eagles jumped 43% to 3,418,000 ounces, up 43.7% from 1,924,000 ounces in the same period a year



"Other" includes transitional economies for 1990 - 1992.

earlier. Sales continued at higher levels in the first two months of 1993, with sales totaling 1,675,000 ounces, up 43% from 1,171,000 ounces.

Use of silver in U.S. Mint commemorative coins did not hold up to 1991 levels, totaling 1,305,112 ounces, compared with 1,645,499 ounces. However, the Mint sold 792,040 ounces in its newly introduced proof coin sets. All coinage programs combined used 8,145,080 ounces of silver last year, 10% less than 1991.

Mexico was the second largest user of silver for coinage in 1992. The Libertad bullion coin tallied 2.8 million ounces in sales. Meanwhile, the first minting of the 10-Peso bi-metallic coin used 4.0 million of silver in late 1992, bringing total silver usage in Mexican coins to 6.8 million ounces. Introduction of the 10-Peso and 20-Peso coins mark the return of silver to circulating currency for the first time since the late 1970s.

Minting of the Royal Canadian Mint's 1992 silver Maple Leaf was disrupted by a lengthy strike in late 1991 and early 1992, as well as an emphasis on higher-margin gold coin programs. In 1992, silver Maple Leaf sales amounted to 300,000 ounces, the lowest level since 1985. However, interest in the silver bullion coin rose sharply in fourth quarter 1992; the RCM simply did not have sufficient coins to meet demand, and minting schedules did not permit additional coin fabrication. There are signs that 1993 sales of the silver Maple Leaf could surpass 1991's 800,000 ounces. However, there are continued con-

straints on mintage, as the RCM remains more committed to gold bullion and commemoratives series.

Meanwhile, sales of Australian bullion coins and medallions rose to 2.1 million ounces in 1992, from 500,000 ounces in 1991. Investors switched to the Kookaburra from the Maple Leaf. Sales of the Australian coin could level off somewhat this year.

German coin demand softened last year, dropping to 5.3 million ounces from 5.5 million ounces. Silver use in coins was flat in France and Austria, at 1.8 million ounces and 600,000 ounces, respectively. Silver coinage in other countries is estimated to have fallen 500,000 ounces to 6.0 million ounces, while transitional economies used 600,000 ounces, down from 900,000 ounces, based on preliminary evidence.

Annual Fabrication Demand
Million Troy Ounces

	1977	1978	1979	1980	1981	1982	1983
Photography							
United States	53.7	64.3	66.0	49.8	51.0	51.8	51.8
Japan	31.2	31.4	32.2	32.6	33.9	36.6	40.9
Western Europe	44.7	47.2	47.9	41.4	43.2	44.9	45.6
<i>Subtotal</i>	<i>129.6</i>	<i>142.9</i>	<i>146.1</i>	<i>123.8</i>	<i>128.1</i>	<i>133.3</i>	<i>138.3</i>
% of Total	26.2	29.1	30.5	32.6	35.1	35.7	37.7
<i>% Change Year Ago</i>	—	10.3	2.2	-15.3	3.5	4.1	3.8
Jewelry & Silverware							
United States	31.6	32.0	26.6	19.4	13.7	16.2	17.1
Japan	2.2	2.5	2.2	1.0	1.1	1.3	1.1
Western Europe	57.2	57.4	50.3	27.5	28.7	32.7	23.9
<i>Subtotal</i>	<i>91.0</i>	<i>91.9</i>	<i>79.1</i>	<i>47.9</i>	<i>43.5</i>	<i>50.2</i>	<i>42.1</i>
% of Total	18.4	18.7	16.5	12.6	11.9	13.4	11.5
<i>% Change Year Ago</i>	—	1.0	-13.9	-39.4	-9.2	15.4	-16.1
Electronics & Batteries							
United States	37.1	36.8	38.1	33.8	30.2	31.9	28.9
Japan	6.9	7.0	8.9	7.6	6.4	6.6	7.7
Western Europe	34.7	35.5	33.4	29.8	25.6	23.2	23.8
<i>Subtotal</i>	<i>78.7</i>	<i>79.3</i>	<i>80.4</i>	<i>71.2</i>	<i>62.2</i>	<i>61.7</i>	<i>60.4</i>
% of Total	15.9	16.1	16.8	18.8	17.0	16.5	16.5
<i>% Change Year Ago</i>	—	0.8	1.4	-11.4	-12.6	-0.8	-2.1
Other Uses							
United States	31.2	27.1	26.6	21.8	21.8	19.1	18.5
Japan	22.9	24.0	25.5	20.3	18.2	18.7	22.4
Western Europe	33.4	32.9	30.4	24.5	21.8	20.3	16.5
<i>Subtotal</i>	<i>87.5</i>	<i>84.0</i>	<i>82.5</i>	<i>66.6</i>	<i>61.8</i>	<i>58.1</i>	<i>57.4</i>
% of Total	17.7	17.1	17.2	17.6	16.9	15.6	15.7
<i>% Change Year Ago</i>	—	-4.0	-1.8	-19.3	-7.2	-6.0	-1.2
Other Countries	73.1	54.3	60.1	54.8	59.8	58.1	58.3
% of Total	14.8	11.0	12.5	14.4	16.4	15.6	15.9
<i>% Change Year Ago</i>	—	-25.7	10.7	-8.8	9.1	-2.8	0.3
Coinage	34.5	39.5	31.0	15.0	9.5	12.0	10.2
% of Total	7.0	8.0	6.5	4.0	2.6	3.2	2.8
<i>% Change Year Ago</i>	—	14.5	-21.5	-51.6	-36.7	26.3	-15.0
TOTAL	494.4	491.9	479.2	379.3	364.9	373.4	366.7
<i>% Change Year Ago</i>	—	-0.5	-2.6	-20.8	-3.8	2.3	-1.8

Notes: Totals may not equal the sums of the categories due to rounding. Industrial demand excludes transitional economies; transitional economy coinage included from 1990 onward.

Source: CPM Group

1984	1985	1986	1987	1988	1989	1990	1991	1992
55.3	57.9	55.4	60.2	62.5	65.2	68.0	66.0	64.4
41.3	42.2	47.0	51.3	56.8	54.8	59.0	61.0	58.8
47.6	48.1	51.1	52.6	57.0	57.1	59.0	60.0	62.4
<u>144.2</u>	<u>148.2</u>	<u>153.5</u>	<u>164.1</u>	<u>176.3</u>	<u>177.1</u>	<u>186.0</u>	<u>187.0</u>	<u>185.6</u>
36.9	36.9	35.1	35.6	36.8	35.1	34.0	32.3	31.4
4.3	2.8	3.6	6.9	7.4	0.5	5.0	0.5	-0.7
13.0	13.0	12.3	10.5	9.0	8.5	8.3	8.3	9.8
1.0	1.4	1.7	2.2	3.0	3.5	4.4	4.0	3.3
27.3	33.1	47.3	53.3	57.3	63.8	68.3	73.1	71.8
<u>41.3</u>	<u>47.5</u>	<u>61.3</u>	<u>66.0</u>	<u>69.3</u>	<u>75.8</u>	<u>81.0</u>	<u>85.4</u>	<u>84.9</u>
10.6	11.8	14.0	14.3	14.5	15.0	14.8	14.8	14.4
-1.9	15.0	29.1	7.6	5.0	9.4	6.9	5.4	-0.6
28.3	30.0	31.1	25.2	25.5	26.3	25.8	21.4	21.4
7.8	7.5	6.8	7.0	8.4	9.5	10.1	9.0	8.4
26.2	27.2	28.5	28.9	31.5	34.8	34.7	34.8	32.4
<u>62.3</u>	<u>64.7</u>	<u>66.4</u>	<u>61.1</u>	<u>65.3</u>	<u>70.6</u>	<u>70.6</u>	<u>65.2</u>	<u>62.2</u>
16.0	16.1	15.2	13.3	13.7	14.0	12.9	11.3	10.5
3.1	3.9	2.7	-8.0	6.9	8.0	0.0	-7.6	-4.6
18.3	17.7	20.1	19.4	15.0	20.0	23.2	23.0	23.3
28.7	28.3	23.1	31.7	35.7	34.4	35.3	37.1	32.1
18.3	17.8	18.5	17.7	19.2	21.4	21.2	21.8	21.9
<u>65.3</u>	<u>63.8</u>	<u>61.7</u>	<u>68.8</u>	<u>69.9</u>	<u>75.8</u>	<u>79.7</u>	<u>81.9</u>	<u>77.3</u>
16.7	15.9	14.1	14.9	14.6	15.0	14.6	14.1	13.1
13.8	-2.3	-3.3	11.4	1.7	8.4	5.1	2.8	-5.6
63.6	63.8	67.1	70.6	72.5	78.7	99.4	131.6	150.9
16.3	15.9	15.4	15.3	15.1	15.6	18.2	22.7	25.6
9.1	0.3	5.2	5.2	2.7	8.6	26.3	32.4	17.7
13.7	13.4	26.8	30.4	25.3	26.3	29.8	27.7	29.4
3.5	3.3	6.1	6.6	5.3	5.2	5.5	4.8	5.0
34.3	-2.2	100.0	13.4	-16.8	4.0	13.3	-7.0	6.1
390.4	401.4	436.9	461.0	478.6	504.3	546.5	578.8	590.3
6.5	2.8	8.8	5.5	3.8	5.4	8.4	5.9	2.0

Silver Coinage

Million Troy Ounces

	United States	Canada	Austria	France	Germany	Mexico	Other	Transitional Economies	Total
1960	46.0	7.5	-i-	12.2	-i-	-i-	38.2	—	103.9
1961	56.0	5.1	-i-	23.8	-i-	-i-	51.1	—	136.0
1962	78.0	10.9	-i-	13.7	-i-	-i-	25.0	—	127.6
1963	112.0	13.0	-i-	12.2	-i-	-i-	29.2	—	166.4
1964	203.0	13.7	-i-	10.7	-i-	-i-	39.7	—	267.1
1965	320.3	24.4	2.7	7.2	2.7	-i-	27.8	—	385.1
1966	53.6	15.5	3.3	8.7	2.9	-i-	45.5	—	129.5
1967	43.8	8.8	3.2	9.6	3.1	-i-	36.8	—	105.3
1968	36.8	7.4	2.2	2.9	4.2	-i-	35.8	—	89.3
1969	19.6	0.0	1.9	0.7	2.9	-i-	7.6	—	32.7
1970	0.7	0.0	4.0	3.5	7.4	-i-	7.8	—	23.4
1971	2.5	0.2	3.2	0.4	19.2	-i-	2.3	—	27.8
1972	2.3	0.1	5.8	0.3	22.6	-i-	7.0	—	38.1
1973	0.9	6.6	6.3	0.1	7.0	-i-	7.6	—	28.5
1974	1.0	9.0	5.7	3.6	7.6	-i-	4.7	—	31.6
1975	2.7	10.4	9.1	1.8	5.4	-i-	4.0	—	33.4
1976	1.3	8.4	6.9	6.2	1.8	-i-	5.4	—	30.0
1977	0.1	0.5	8.9	7.1	4.6	4.2	9.1	—	34.5
1978	0.0	1.0	9.6	9.0	3.6	6.6	9.7	—	39.5
1979	0.2	0.8	4.0	10.6	3.7	5.0	6.7	—	31.0
1980	0.1	0.2	2.3	0.1	0.0	6.1	6.2	—	15.0
1981	0.2	0.3	3.1	0.1	0.5	0.0	5.3	—	9.5
1982	1.8	0.3	4.5	1.4	0.3	0.0	3.7	—	12.0
1983	2.1	0.4	1.8	2.2	0.0	0.0	3.7	—	10.2
1984	2.0	0.3	2.4	3.9	0.0	2.5	2.6	—	13.7
1985	0.4	0.3	4.6	2.2	0.0	3.5	2.4	—	13.4
1986	10.3	1.3	1.1	2.2	0.0	2.0	9.9	—	26.8
1987	12.2	1.2	3.1	2.2	3.2	2.3	6.2	—	30.4
1988	7.9	1.1	2.0	2.2	3.2	2.0	6.9	—	25.3
1989	6.8	3.3	2.1	2.2	3.2	1.7	7.0	—	26.3
1990	9.1	1.7	0.6	2.2	2.4	1.5	10.9	1.4	29.8
1991	9.1	0.8	0.6	1.8	5.5	1.5	7.5	0.9	29.9
1992	8.1	0.3	0.5	1.8	5.3	6.8	6.0	0.6	29.4

Notes: Excludes transitional economies prior to 1990.

i — included in Other.

Sources: U.S. Bureau of Mines; Energy, Mines, and Resources Canada; The Silver Institute; Handy & Harman; Bank of Mexico; trade sources; CPM Group

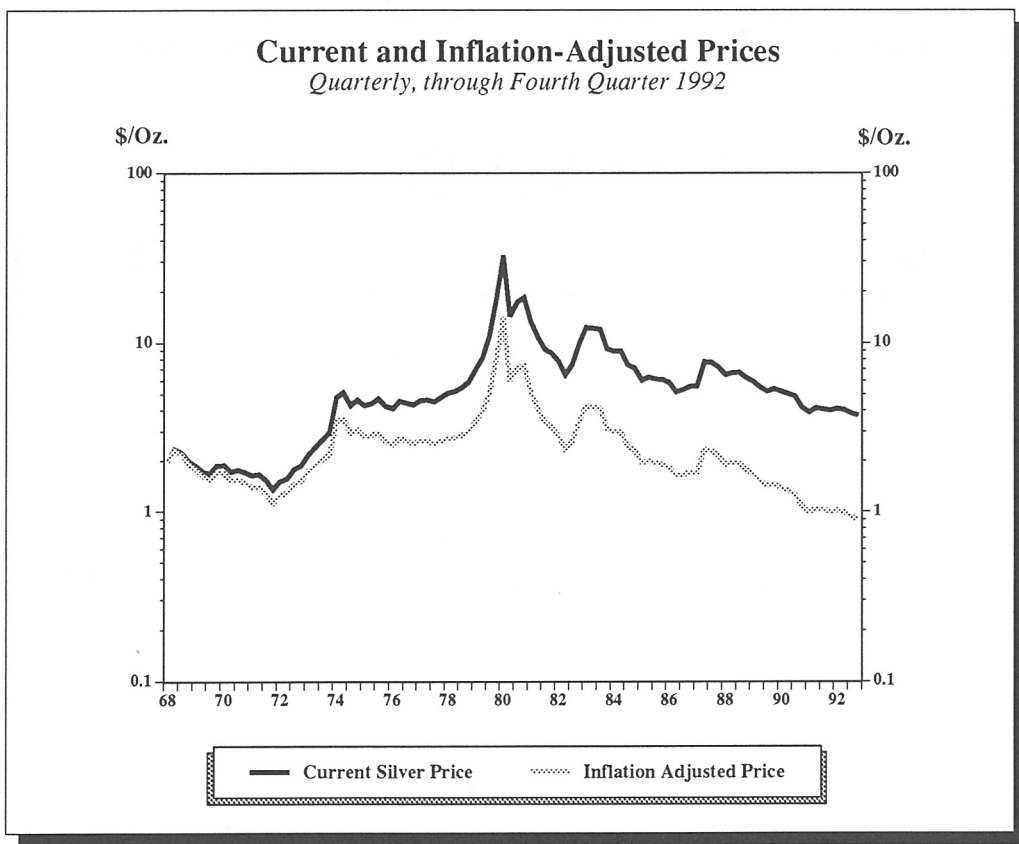
INVESTMENT DEMAND

Investors continued to be net sellers of silver in 1992.

How much silver investors sold is a difficult number to estimate. Traditional commodity market analyses use annual surpluses and deficits of new supply relative to fabrication demand as a measure of investor involvement in the markets. If more of a commodity is produced than is purchased by bona fide users and fabricators, the excess goes to stocks. Conversely, if more is used than is produced, the shortfall or deficit must be compensated for by

sales from inventories. Traditional analyses use these inventory changes as surrogates for investor purchases and sales, on the thesis that only investors would buy and hold a commodity that they were not intending to consume. This is not true, of course: Sometimes producers, refiners, dealers, banks, governments, and other non-investing entities are involved in stockpiling commodities.

Because of this, an analysis of stock changes should adjust the annual variations in reported inventories for changes in



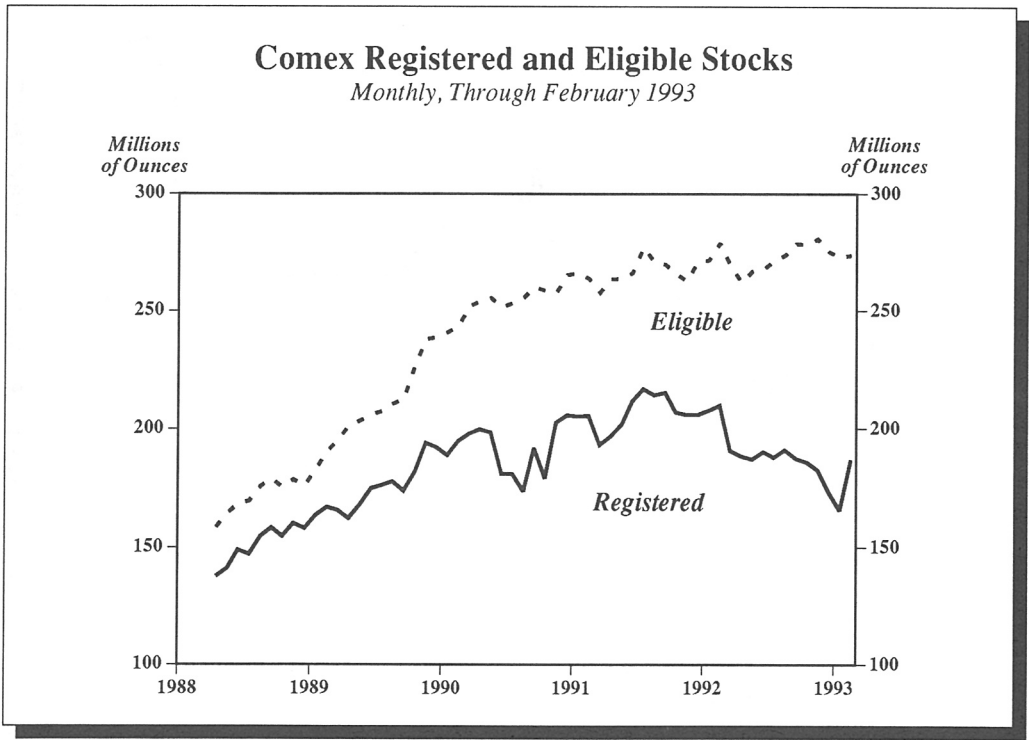
trade or market stocks. Even then the result is less than ideal in the silver market, as some dealer stocks are not held in bank vaults where they are reported. Also, some investor stocks are held in bank vaults where total inventories are reported.

This last point has become important in the silver market, because investor stocks held in New York bank vaults are reported by the New York Commodity Exchange if they are suitable for delivery against Comex silver futures contracts, even if these inventories are not registered with the Comex.

Comex reports a total silver inventory figure on a daily and weekly basis. Included in this total are registered stocks; and eli-

gible, but not registered, stocks. Registered stocks are silver inventories registered against open positions on the Comex futures exchange and held in qualified New York bank vaults. Eligible stocks are silver inventories that meet Comex's standards and are held in Comex-qualified New York bank vaults, but are not actually registered against Comex futures positions. These latter stocks primarily are owned by private investors.

Following a change in New York State tax laws in the late 1980s, investors shifted some of their long-term silver holdings into New York, mostly from Delaware. In recent years, the amount of such eligible silver held by private investors in New York bank vaults has risen sharply, from



17.8 million ounces at the end of 1988 (the first year for which these data are available) to 102.0 million ounces at the end of 1992.

This increase in investor inventories has masked a significant decline in dealer stocks registered against Comex contracts.

In July 1991 stocks registered with the Comex peaked at 216.7 million ounces. Total stocks at the time were 277.0 million ounces, indicating eligible but unregistered stocks were 60.3 million ounces.

By the end of 1992, registered stocks had fallen 43.5 million ounces from that 1991 peak, to 173.2 million ounces. There was a slight recovery in February 1993, to 186.7

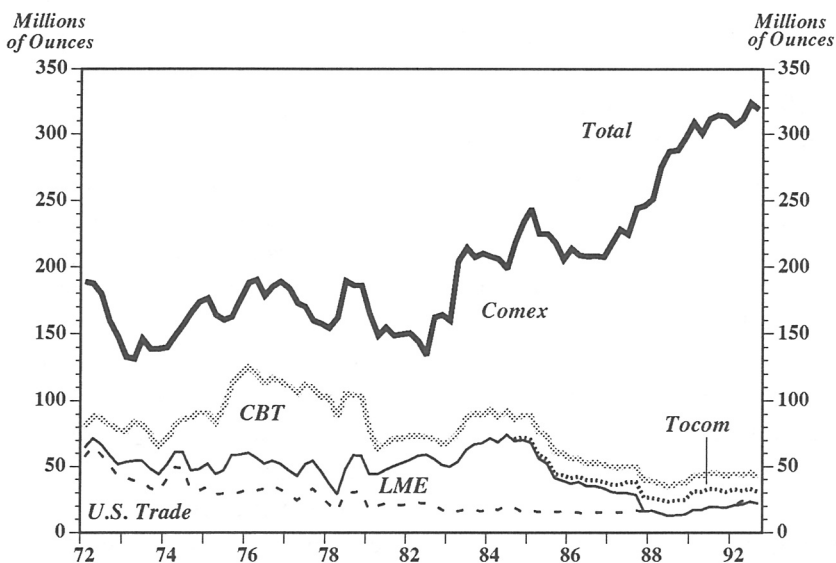
million ounces — 30.0 million ounces below the July 1991 peak.

In other words, reported market stocks, held primarily by dealers and bullion banks, had fallen 30.0 million ounces, or 13.8%, over 18 months.

Few market participants noticed this decline, however, since total New York bank vault inventories, as reported by the Comex, continued to rise, reaching an end-month peak of 280.7 million ounces in November 1992. The increase in these total stocks was due to a locational shift of investor holdings, from places where they were unreported, to New York bank vaults, where they are publicly reported. All of this is important in assessing the true level

Reported Market Inventories

Quarterly, Through Fourth Quarter 1992



of investor sales in recent years. Detailed statistical analyses indicate that investors have been net sellers since 1989; market interviews support this conclusion. How much has been disposed of is the key question.

Based on a cursory analysis of supply, demand, and reported inventories, one would conclude that investors sold 303.5 million ounces of silver over the four year period 1989 through 1992. Additionally, net investor sales would be shown to be rising throughout most of this period, from 43.8 million ounces in 1989 to 75.2 million ounces in 1990, 90.4 million ounces in 1991 and 94.1 million ounces in 1992.

Adjusting these calculations for what is known about the existence of investor silver holdings in reported inventory statistics, provides an interestingly different view. Total sales by investors over the past four years can be seen to have been no more than 233.9 million ounces. Additionally, the highest level of sales were in 1991. In 1992 investor sales fell off, especially during the fourth quarter. These statistics are supported by market interviews.

The adjusted data shows that investors would have sold 29.4 million ounces in 1989, rising to 62.3 million ounces in 1990, peaking at 85.3 million ounces in 1991, and falling back to 56.9 million ounces in 1992.

Furthermore, it must be noted that even these sales levels probably included some

silver held in dealer stocks that were not registered or reported publicly, for example in Switzerland.

Finally, these sales figures are for net investor disposals of bullion, excluding bullion coins. As noted in past *WORLD SILVER SURVEYS*, many small investors have shifted from bullion, small bars, and medallions to bullion coins such as the American Eagle and Canadian Maple Leaf.

Thus, while investors have been net sellers of bullion over the past four years, they have been adding to their stocks in coinage. Bullion coin sales totaled 26.3 million ounces in 1989, 29.8 million ounces in 1990, 27.7 million ounces in 1991, and 25.4 million ounces in 1992. A total view of investor silver buying habits needs to adjust for these acquisitions.

Indeed, even as the investment community continues to be net sellers, there are signs of renewed investor interest. Part of this new demand is coming from sectors of the investment market previously not involved in the physical silver market, including first-time private investors and institutional investment companies. This demand is being fed by perceptions that silver prices are at untenably low levels.

At present this fresh demand is more than offset by other investors' selling. Some of these sales are coming from estate sales. Some long-term silver investors who bought silver in the 1960s and early 1970s are dying; when their estates are settled, their heirs instruct that the silver be sold.

Another source of investor selling in 1992 came from the Middle East. Prior to last year, the National Commercial Bank of Jeddah had been a large, consistent buyer of silver. The reason for the buying was the one mentioned above: certain managers at the bank held the view that silver prices were untenably low from a long-term perspective, and were buying silver against the day when prices would rise. In the late 1980s and early 1990s the bank acquired roughly 50.0 million ounces of silver. When the manager responsible for this program was removed from the bank in the middle of 1992, the board directed his replacements to sell the silver immediately. The subsequent sale caused silver prices to fall 11 cents, from \$4.02 to \$3.91. When news of the sale reached the market the following day, speculative and trade selling took silver prices down another 8 cents.

A tide of stronger demand for silver coins emerged in the fourth quarter of 1992. Investor demand for coins kept rising in the first two months of 1993, despite, or perhaps because of, lower silver prices.

The investors who have purchased coins over the past two years are viewing the current market as a buying opportunity. They are largely new investors, untainted by the Hunt controversy of the late 1970s. To these investors, the roller coaster ride of 1979-1980 is history.

Additionally, commodity funds now are a major factor in the silver market. These investors also view \$50 silver as history, albeit possibly with a more sophisticated

appreciation of the events of 13 years ago. What is intriguing is the similarity between the silver market today and copper in the mid-1980s. Both metals had seen years of excess stocks and low prices. Both metals were targeted as worthy investments by commodity funds. Copper prices more than doubled from 1986 to 1988, and have remained 75% above their 1980s lows, in nominal terms, since then.

COUNTRY REPORTS

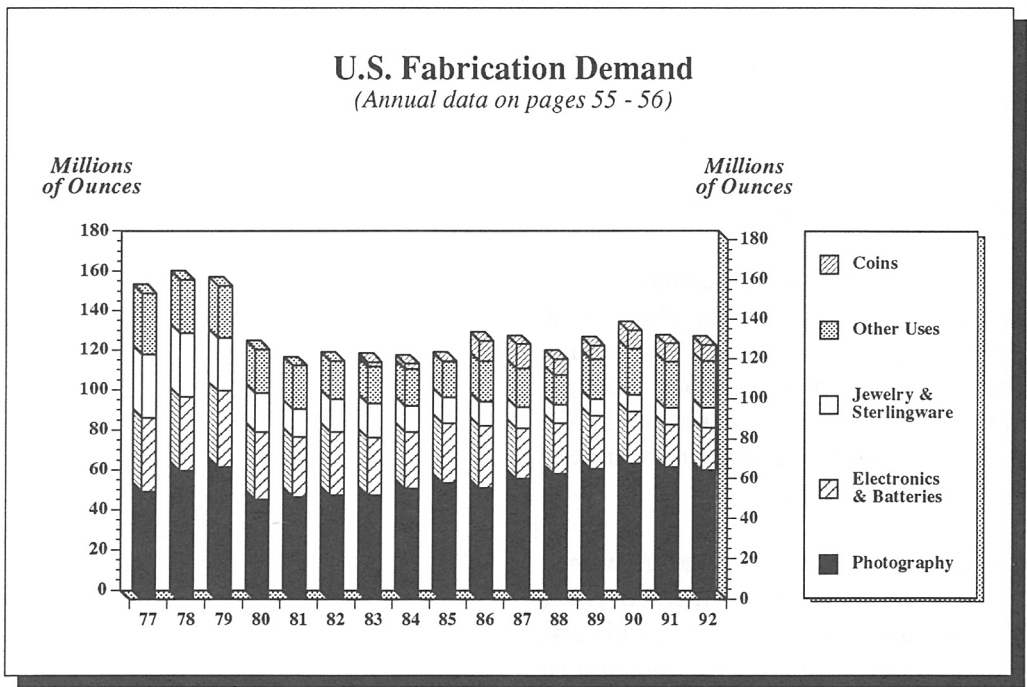
United States

The United States remains the largest national market for silver, taking 127.0 million ounces of silver in 1992. This represented a small, 0.6%, decline in silver use from 127.8 million ounces in 1991. Industrial demand less official coinage totaled 118.9 million ounces, up 0.2% from 118.7 million ounces in 1991.

Photography is the largest end use of silver in the United States, accounting for 54% of industrial silver use in 1992. Photographic papers and chemicals are manufactured by several companies in the United States. In 1992 silver use in photography declined an estimated 2.4% to 64.4 million ounces,

from 66.0 million ounces in 1991. This was the second year in a row in which silver use in photography decreased in the United States. As described in the first section of this report, silver use in commercial photography declined, while silver use in x-rays continued to rise last year.

Silver use in commercial photography is projected to recover somewhat in 1993, although inventory management programs at some photo companies will mask some of this rise. Silver use in x-rays meanwhile should be expected to continue rising in 1993. Thus, overall silver use in photography in the United States should rise slightly in 1993, after two years of lower demand.



Silver use in electrical contacts and electronic connectors is the second largest end use in the United States. In 1992 silver use in electrical applications used an estimated 18.3 million ounces, unchanged from 1991 levels. This may appear surprising, given weak economic conditions in 1991. The explanation for the lack of weakness is that 1991's level already represented a low level of demand: Silver use in electronics already had declined from 23.5 million ounces in 1989 and 22.8 million ounces in 1990 to 18.3 million ounces in 1991. Also, there was some shift toward silver in some electronic applications in the United States, away from more expensive gold and other precious metals. This shift in electronics helped boost silver use even in the face of weak conditions in the electronics appliance market.

Another 3.1 million ounces of silver were used in batteries in the United States in 1992, which also is an electronic application. This silver use was basically flat with 1991's level. Silver use in batteries had risen sharply during the late 1980s through 1991. Weaker overall economic conditions were said to be the prime factor behind 1992's flat market conditions. Silver batteries still are preferred to competitive products in many consumer applications, and the outlook is for continued growth in this sector in 1993 and beyond.

A total of 9.8 million ounces of silver was used in jewelry, sterlingware, and silver-plated products in the United States in 1992. This was 18% higher than the 8.3 million ounces used in these products in 1991. Silver jewelry, decorative objects,

and small gift items continue to gain in popularity in the United States, in part because silver goods are perceived by consumers to be affordable luxury goods.

The largest component of this sector of the U.S. market is silver use in sterlingware, which used 3.9 million ounces in 1992. This was 11.4% more than the 3.5 million ounces used in 1991. Silver use in this industry is expected to continue to rise in 1993, with some manufacturers reporting very strong orders during the first quarter of the year. Another 3.0 million ounces of silver are estimated to have been used in jewelry last year, up 50% from 2.0 million ounces in 1991. This sector is particularly difficult to measure, given the number of small crafts people and jewelers working in silver who buy their metal through a variety of channels. It is clear, however, that the demand for silver jewelry has remained strong on the consumer level. Finally, an estimated 2.9 million ounces of silver is estimated to have been used in silverplated products in the United States last year, up from 2.8 million ounces in 1991.

Another 3.8 million ounces of silver are estimated to have been used in chemical process catalysts in the United States in 1992, up from 3.3 million ounces in 1991. Mirror manufacturers report strong demand for their product, especially for export, in 1992. Silver use in mirrors is estimated to have recovered from a slight decline in 1991, rising to 1.2 million ounces in 1992. Around 18.3 million ounces of silver are used in miscellaneous applications in the United States. The bulk

of this metal appears to be used in brazing alloys and solders, and in medallions and collectibles.

The U.S. Mint used 8.1 million ounces of silver in coin programs in 1992, down from 9.1 million ounces in each of the past two years.

Annual U.S. Fabrication Demand, 1977 - 1986

Million Troy Ounces

	1977	1978	1979	1980	1981
Photography	53.7	64.3	66.0	49.8	51.0
Electrical Contacts & Conductors	31.3	30.8	33.5	27.8	26.4
Batteries	5.8	6.0	4.6	6.0	3.8
Sterlingware	16.7	17.9	13.1	9.1	4.4
Jewelry	8.1	6.8	5.4	5.9	5.4
Silverplate	6.8	7.3	8.1	4.4	3.9
Brazing Alloys & Solders	12.4	11.0	10.9	8.5	7.7
Catalysts	8.9	8.2	5.6	3.0	3.8
Medallions & Commemorative Objects	4.3	2.7	4.7	4.7	2.6
Dental & Medical Supplies	2.2	2.0	2.3	2.2	1.7
Mirrors	2.1	1.9	1.9	0.7	0.6
Bearings	0.5	0.4	0.3	0.6	0.3
Miscellaneous	0.9	1.0	1.0	2.0	5.0
Total Industrial	153.6	160.2	157.3	124.7	116.7
<i>% Change Year Ago</i>	—	4.3	-1.8	-20.7	-6.4
Coinage	0.1	0.0	0.2	0.1	0.2
TOTAL FABRICATION	153.7	160.2	157.4	124.8	116.8
<i>% Change Year Ago</i>	—	4.2	-1.7	-20.7	-6.3
	1982	1983	1984	1985	1986
Photography	51.8	51.8	55.3	57.9	55.4
Electrical Contacts & Conductors	27.7	26.3	25.6	27.5	27.4
Batteries	4.2	2.6	2.7	2.5	3.7
Sterlingware	6.6	7.0	3.6	3.5	3.9
Jewelry	6.3	6.9	5.8	5.8	4.6
Silverplate	3.3	3.2	3.5	3.7	3.7
Brazing Alloys & Solders	7.4	5.8	5.9	5.6	6.4
Catalysts	2.4	2.4	2.4	2.4	2.3
Medallions & Commemorative Objects	1.8	3.0	2.6	2.5	4.0
Dental & Medical Supplies	1.7	1.5	1.6	1.5	1.5
Mirrors	1.0	1.0	1.0	1.0	1.0
Bearings	0.2	0.2	0.3	0.2	0.4
Miscellaneous	4.6	4.6	4.6	4.6	4.6
Total Industrial	118.8	116.3	114.8	118.6	118.9
<i>% Change Year Ago</i>	1.9	-2.1	-1.2	3.2	0.3
Coinage	1.8	2.1	2.7	0.4	10.3
TOTAL FABRICATION	120.7	118.4	117.5	118.9	129.2
<i>% Change Year Ago</i>	3.3	-1.9	-0.8	1.2	8.7

Notes: Totals may not equal the sums of components due to rounding.

Sources: U.S. Bureau of Mines, trade sources, CPM Group

Annual U.S. Fabrication Demand, 1987 - 1992

Million Troy Ounces

	1987	1988	1989	1990	1991	1992
Photography	60.2	62.5	65.2	68.0	66.0	64.4
Electrical Contacts & Conductors	22.7	23.0	23.5	22.8	18.3	18.3
Batteries	2.4	2.5	2.8	3.0	3.1	3.1
Sterlingware	3.8	3.5	3.4	3.5	3.5	3.9
Jewelry	4.2	2.9	2.4	2.0	2.0	3.0
Silverplate	2.5	2.6	2.7	2.8	2.8	2.9
Brazing Alloys & Solders	5.6	—	—	—	—	—
Catalysts	2.4	2.6	2.8	3.0	3.3	3.8
Medallions & Commemorative Objects	4.2	—	—	—	—	—
Dental & Medical Supplies	1.3	1.4	1.7	1.8	—	—
Mirrors	1.0	1.1	1.1	1.2	1.1	1.2
Bearings	0.3	—	—	—	—	—
Miscellaneous	4.5	9.9	14.4	17.2	18.6	18.3
Total Industrial	115.3	112.0	120.0	125.3	118.7	118.9
<i>% Change Year Ago</i>	-3.1	-2.8	7.1	4.4	-5.3	0.2
Coinage	12.2	7.9	6.8	9.1	9.1	8.1
TOTAL FABRICATION	127.5	119.9	126.8	134.4	127.8	127.0
<i>% Change Year Ago</i>	-1.4	-5.9	5.8	6.0	-4.9	-0.6

Notes: Totals may not equal the sums of components due to rounding. Categories marked with dashes are included in miscellaneous.

Sources: U.S. Bureau of Mines, trade sources, CPM Group

Imports of Sterlingware and Jewelry into the United States

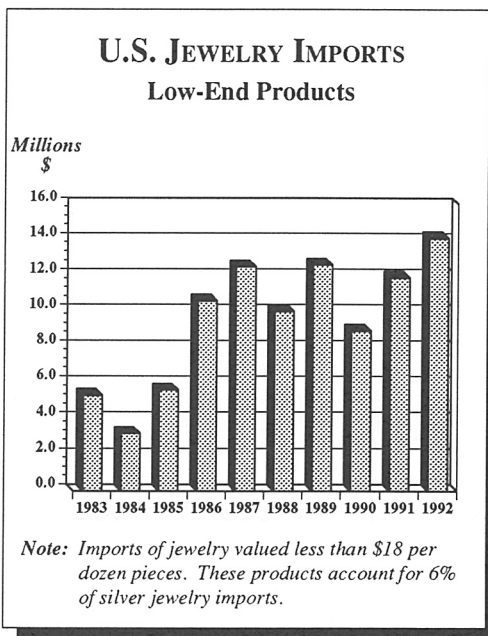
The importation of silver-bearing products such as jewelry, sterlingware, and decorative objects continues to rise sharply, reflecting strong demand for these items in the United States and healthy demand for imported products.

Silver jewelry imports rose 16% in 1992 from 1991 levels. Sterlingware imports rose 6.3%. Decorative object imports rose 40.9%, to a record \$18.6 million, more than recovering from the decline in imports in this sector in 1991.

The U.S. Customs Office collects data measuring the import of such products on a dollar basis. Statistics on the volume of silver product imports are not available.

Total silver jewelry imports rose 16%, from \$190.7 million in 1991 to \$221.3 million last year. This followed a 5.2% increase in 1991.

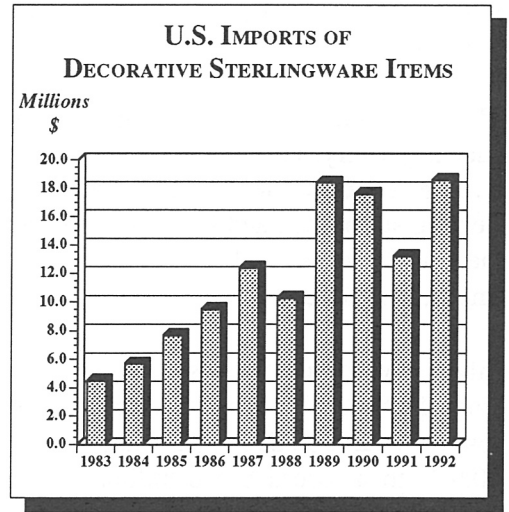
Silver jewelry imports are broken down into three categories by the Customs Office. The largest group is of jewelry, valued at more than \$18 per dozen pieces. In 1992 the importation of these items rose 15.6% to \$204.8 million, from \$177.1 million in 1991. Such jewelry, accounting for 92.5% of total U.S. silver jewelry imports last year, was imported from 60 different countries during 1992, one more than in 1991. Thailand, which has been gaining market share in this sector, became the leading exporter to the United States last



year. Thai exports rose 32.6%, from \$61.7 million in 1991 to \$81.8 million in 1992.

Italy, long the leading exporter of silver jewelry to the United States, slipped to second place in 1992, with Italian exports dropping 5.6%, from \$65.8 million to \$62.1 million. Mexico is the third largest exporter to the United States. While Mexican exports are rising sharply, they remain small compared to shipments from Thailand and Italy. Mexican silver jewelry exports to the United States rose 45.3%, from \$16.1 million in 1991 to \$23.4 million last year.

Lower priced silver jewelry imports, classified as those with value below \$18 per dozen pieces, rose even more sharply in 1992, by 18.5% to \$14.1 million. Thailand continues to dominate this sector, again



supplying more than half of total U.S. imports. Thai imports of these lower priced items rose from \$6.1 million in 1991 to \$8.7 million in 1992. Italy remained the second largest exporter in this sector, although its lead over third place Mexico narrowed sharply. Italian exports in this sector dropped from \$2.3 million in 1991 to \$1.8 million in 1992. Mexican shipments also fell, from \$2.1 million in 1991 to \$1.7 million in 1992. Imports of lower priced silver jewelry came to the United States from 28 countries last year, up from 25 countries in 1991.

The third segment of the silver jewelry import markets is for chain and semi-fabricated silver jewelry. This is the smallest sector by far, accounting for slightly more than one percent of total U.S. silver jewelry imports last year. Still, imports rose sharply — 41.2% — from \$1.7 million in 1991 to \$2.4 million in 1992. Canada remained the largest source of these imports,

and in fact almost doubled its shipments to the United States, from \$769,000 in 1991 to \$1.4 million last year.

The number of sterlingware items being imported into the United States fell sharply in 1992, but the value of these imports nonetheless rose. Sterlingware imports rose 6.3% on a value basis, from \$6.4 million in 1991 to \$6.8 million in 1992. Even so, the number of sterlingware sets imported dropped by more than half, from 501,838 sets in 1991 to 227,700 sets in 1992. Similarly sharp declines were registered in individual sterlingware pieces on a volume basis, while the value of these imports remained relatively stable. One possible explanation for this anomaly is that these import statistics include imports of antique sterlingware, the value of which may have risen during 1992. Such an analysis is supported by the fact that \$1.4 million, or 20.6% of the total, came from the United Kingdom, a common source for

antique sterling shipments to the United States.

In addition to sterlingware and jewelry, the United States last year imported \$18.6 million of sterling silver decorative items, collectibles, and table-top objects. This was 40.9% higher than the \$13.2 million imported in 1991, and represented a recovery to record levels (just surpassing the previous peak, of \$18.4 million, in 1989).

The largest exporter of silver decorative objects to the United States last year was Chile, at \$3.8 million. (Chile also exported a sizable amount of sterlingware to the United States.) Israel was the second largest exporter, at \$3.7 million, followed by the United Kingdom at \$2.9 million and Italy at \$2.7 million. In total, around 39 countries shipped such objects to the United States in 1992.

U.S. JEWELRY IMPORTS

Jewelry, valued at less than \$18 per dozen pieces.

	Quantity	US\$Mil.
1983	824,630	5.3
1984	NA	3.2
1985	844,598	5.6
1986	1,390,985	10.6
1987	1,554,202	12.5
1988	1,328,929	10.0
1989	NA	12.6
1990	NA	8.9
1991	NA	11.9
1992	NA	14.1

More extensive trade data, available since 1989.

	Quantity	US\$Mil.
1989		
Chains & Semi-fab	NA	2.9
Jewelry, <\$18/Dzn.	NA	12.6
Jewelry, >\$18/Dzn.	NA	<u>163.3</u>
TOTAL	NA	178.8
1990		
Chains & Semi-fab	NA	1.9
Jewelry, <\$18/Dzn.	NA	8.9
Jewelry, >\$18/Dzn.	NA	<u>170.5</u>
TOTAL	NA	181.2
1991		
Chains & Semi-fab	NA	1.7
Jewelry, <\$18/Dzn.	NA	11.9
Jewelry, >\$18/Dzn.	NA	<u>177.1</u>
TOTAL	NA	190.7
1992		
Chains & Semi-fab	NA	2.4
Jewelry, <\$18/Dzn.	NA	14.1
Jewelry, >\$18/Dzn.	NA	<u>204.8</u>
TOTAL	NA	221.3

Note: From 1983 through 1988, the annual figure represents only imports of silver jewelry valued at less than \$18 per dozen pieces.

Sources: U.S. Census Bureau, CPM Group

U.S. STERLINGWARE IMPORTS

	Quantity	US\$Mil.
1983	NA	1.9
1984	NA	2.6
1985	2,803,852	2.4
1986	NA	2.4
1987	NA	3.7
1988	NA	3.2
1989	NA	8.4
1990	NA	6.2
1991	NA	6.4
1992	NA	6.8

More extensive trade data, available since 1989.

1989

Knives	27,651	0.8
Forks	28,442	1.1
Spoons & Ladle	47,008	1.1
Sets	1,372,903	1.3
Miscellaneous	NA	4.1

TOTAL 8.4

1990

Knives	19,008	0.7
Forks	32,629	0.7
Spoons & Ladle	36,283	0.7
Sets	NA	0.7
Miscellaneous	NA	3.5

TOTAL 6.2

1991

Knives	41,355	0.7
Forks	50,930	0.8
Spoons & Ladle	31,881	0.7
Sets	501,838	1.0
Miscellaneous	NA	3.2

TOTAL 6.4

1992

Knives	28,361	0.6
Forks	33,512	0.7
Spoons & Ladle	25,832	0.7
Sets	227,700	1.2
Miscellaneous	NA	3.6

TOTAL 6.8

Notes: From 1983 through 1988, only total sterling silver tableware imports were reported, with no breakdown by category.

Sources: U.S. Census Bureau, CPM Group

U.S. IMPORTS OF DECORATIVE ITEMS

	US\$Mil.
<i>Sterling items</i>	
1983	4.5
1984	5.7
1985	7.7
1986	9.5
1987	12.4
1988	10.3
1989	18.4
1990	17.6
1991	13.2
1992	18.6

Silverplated items

1983	26.5
1984	36.2
1985	35.2
1986	38.6
1987	47.0
1988	56.8

Notes: Quantities of items not provided for these series. After 1988, data for silverplated items no longer was available, having been replaced by 'precious metals plated' statistics, which included gold and other precious metals plated objects.

Sources: U.S. Census Bureau, CPM Group

Japan

Japan remains the second largest market for silver in the world. Despite a weakening economy, Japanese fabrication demand held up reasonably well in 1992, and is expected to be flat or slightly higher in 1993.

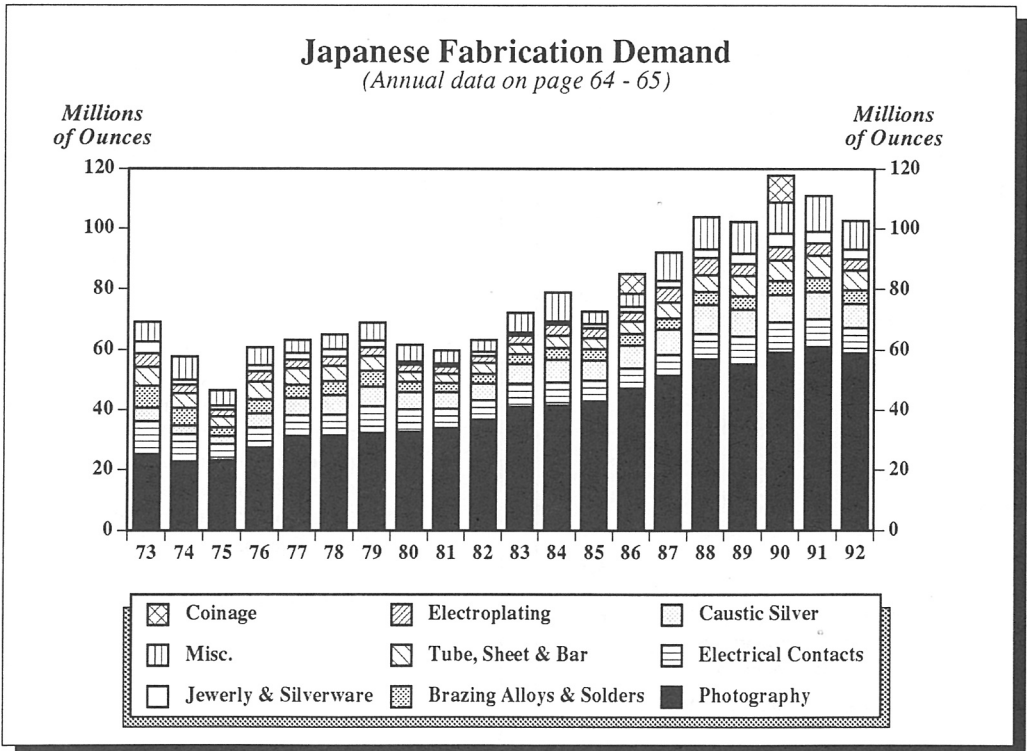
In 1992, total silver fabrication demand in Japan fell 7.7%, to 102.6 million ounces from 111.1 million ounces in 1991. While the decline was broad-based, affecting all end-use markets, it was less drastic than earlier expected.

The recessionary conditions currently faced by Japan appear to be somewhat overblown. There have been reports sug-

gesting that Japanese precious metals demand has been declining precipitously during the past 12 months. This does not seem to be the case. While earlier estimates showed a decline in silver use to 100.0 million ounces, this figure has been revised upward to 102.6 million ounces.

Photographic use, which accounts for around 57% of total fabrication demand in Japan, fell 1.2 million ounces last year to 61.0 million ounces. Silver use declined in commercial photography and in industrial films, but rose in medical x-rays.

Demand for silver in electrical contacts declined to 8.4 million ounces, from 9.0 million ounces in 1991. Caustic silver was off more than 11%, at 8.0 million ounces.



Demand for silver in tube, sheet, and bar also fell 11% last year, to 6.5 million ounces from 7.3 million ounces in 1991. Brazing alloys and solders absorbed 4.5 million ounces, 300,000 ounces less than the previous year.

Electroplating use fell to 3.6 million ounces in 1992 from 4.0 million ounces in 1991. Jewelry and silverware use declined 700,000 ounces to 3.3 million ounces. Silver consumed in other industrial applications dropped nearly 21% last year, to 9.5 million from 12.0 million ounces in 1991.

Japanese fabrication demand is expected to rebound along with the country's economy, possibly starting later this year. Still, Japan shows increasing signs of being a mature market for silver. The strong expansion of silver use witnessed in the 1970s and 1980s may be over.

The leveling off in photographic demand over the past three years provides evidence for this trend. Silver use in Japanese photographic applications passed through a period of uninterrupted growth from 1974 through 1988, rising 151% from 22.6 million ounces to 56.8 million ounces. Photo use fell to 54.8 million ounces in 1989, then climbed to 59.0 million ounces in 1990 and 61.0 million ounces in 1991. Last year silver demand in this sector slipped 3.6%, to 58.8 million ounces.

Rising photo use clearly propelled the 151% expansion in total Japanese demand between 1975 and 1990, accounting for 48% of the increase in total Japanese use from 46.4 million ounces to 117.7 million

ounces during this time. The photo industry in Japan is expected to use about the same amount of silver this year as in 1992, around 59.0 million ounces, although demand could begin picking up somewhat in the fourth quarter. Even then, Japanese photo use should not be expected to rise at the rate seen over the previous three decades.

This trend seems likely to apply to demand for silver in other sectors as well. Silver use in non-photo applications in Japan rose fairly steady between 1977 and 1990. Silver use in electrical contacts increased from 6.9 million ounces to 10.1 million ounces during that period, or 46.3%. Over the past two years, however, use of silver in electrical contacts has fallen 7%.

Similarly caustic silver, which is the starting material for a variety of industrial applications, expanded 55% between 1977 and 1990, from 5.8 million ounces to 9.0 million ounces. Caustic silver use was flat in 1991 and declined to 8.0 million ounces last year. Tube, sheet, and bar took 5.6 million ounces of silver in 1977. Silver use here fell to 3.0 million ounces in 1987. By 1991, tube, sheet and bar had risen to 7.3 million ounces, back to its 1973 peak. Demand in this application fell 800,000 ounces last year.

Japan doubled its use of silver in electroplating between 1977 and 1988, to 5.6 million ounces. Over the past four years, electroplating has retreated nearly 36%.

Japanese silver jewelry and silverware manufacturers have never been particu-

larly competitive on a worldwide basis. In 1977, silver use in jewelry and silverware was 2.2 million ounces. Demand from this sector reached its nadir in 1980, at 1.0 million ounces. By 1990, demand had risen more than four-fold, to 4.4 million ounces, before falling to 4.0 million ounces in 1991 and 3.3 million ounces in 1992.

Use of silver in brazing alloys and solders held fairly steady over the past 15 years. Demand stood at 4.3 million ounces in 1977 and 4.8 million ounces in 1991, dropping as low as 3.1 million ounces in 1981. In 1992, 4.5 million ounces of silver went to brazing alloys and solders.

Japanese Fabrication Demand 1973 - 1982

Million Troy Ounces

	1973	1974	1975	1976	1977
Photography	25.0	22.6	23.0	27.3	31.2
Electrical Contacts	11.1	9.2	5.6	6.8	6.9
Caustic Silver	4.4	2.9	2.6	4.7	5.8
Brazing Alloys & Solders	7.3	5.9	2.9	4.7	4.3
Tube, Sheet & Bar	6.5	4.8	3.5	5.9	5.6
Electroplating	4.3	2.8	2.3	3.4	2.8
Jewelry & Silverware	3.9	1.8	1.4	2.0	2.2
Miscellaneous	6.5	7.7	5.1	6.0	4.4
Total	69.0	57.7	46.4	60.8	63.2
<i>% Change Year Ago</i>	—	-16.4	-19.6	31.0	3.9
	1978	1979	1980	1981	1982
Photography	31.4	32.2	32.6	33.9	36.6
Electrical Contacts	7.0	8.9	7.6	6.4	6.6
Caustic Silver	6.5	6.6	5.6	5.6	5.5
Brazing Alloys & Solders	4.7	5.3	3.5	3.1	3.3
Tube, Sheet & Bar	5.1	4.9	3.2	3.0	3.6
Electroplating	2.9	2.8	2.5	2.4	2.3
Jewelry & Silverware	2.5	2.2	1.0	1.1	1.3
Miscellaneous	4.8	5.9	5.5	4.1	4.0
Total	64.9	68.8	61.5	59.6	63.2
<i>% Change Year Ago</i>	2.7	6.0	-10.6	-3.1	6.0

Japanese Fabrication Demand 1983 - 1992

Million Troy Ounces

	1983	1984	1985	1986	1987
Photography	40.9	41.3	42.2	47.0	51.3
Electrical Contacts	7.7	7.8	7.5	6.8	7.0
Caustic Silver	6.7	7.6	6.8	7.6	8.3
Brazing Alloys & Solders	3.2	3.9	3.7	3.7	3.7
Tube, Sheet & Bar	3.2	3.9	3.6	4.1	5.3
Electroplating	2.8	3.7	3.2	3.2	4.9
Jewelry & Silverware	1.1	1.0	1.4	1.7	2.2
Miscellaneous	6.5	9.6	4.2	4.4	9.4
Total	72.1	78.8	72.6	78.6	92.2
<i>% Change Year Ago</i>	<i>14.1</i>	<i>9.3</i>	<i>-7.8</i>	<i>8.2</i>	<i>17.4</i>
Coinage	—	—	—	6.4	—
TOTAL INCLUDING COINAGE	72.1	78.8	72.6	85.0	92.2
<i>% Change Year Ago</i>	<i>14.1</i>	<i>9.3</i>	<i>-7.8</i>	<i>17.0</i>	<i>8.5</i>
	1988	1989	1990	1991	1992
Photography	56.8	54.8	59.0	61.0	58.8
Electrical Contacts	8.4	9.5	10.1	9.0	8.4
Caustic Silver	9.5	8.9	9.0	9.0	8.0
Brazing Alloys & Solders	4.3	4.5	4.6	4.8	4.5
Tube, Sheet & Bar	5.6	6.7	6.7	7.3	6.5
Electroplating	5.6	3.8	4.5	4.0	3.6
Jewelry & Silverware	3.0	3.5	4.4	4.0	3.3
Miscellaneous	10.6	10.5	10.5	12.0	9.5
Total	103.9	102.2	108.8	111.1	102.6
<i>% Change Year Ago</i>	<i>12.6</i>	<i>-1.6</i>	<i>6.5</i>	<i>2.1</i>	<i>-7.7</i>
Coinage	—	—	—	8.9	—
TOTAL INCLUDING COINAGE	103.9	102.2	117.7	111.1	102.6
<i>% Change Year Ago</i>	<i>12.6</i>	<i>-1.6</i>	<i>15.2</i>	<i>-5.6</i>	<i>-7.7</i>

Notes: Totals may not equal the sums of components due to rounding. There was no silver use in coinage in Japan prior to 1986.

Sources: Japanese trade sources, CPM Group

India

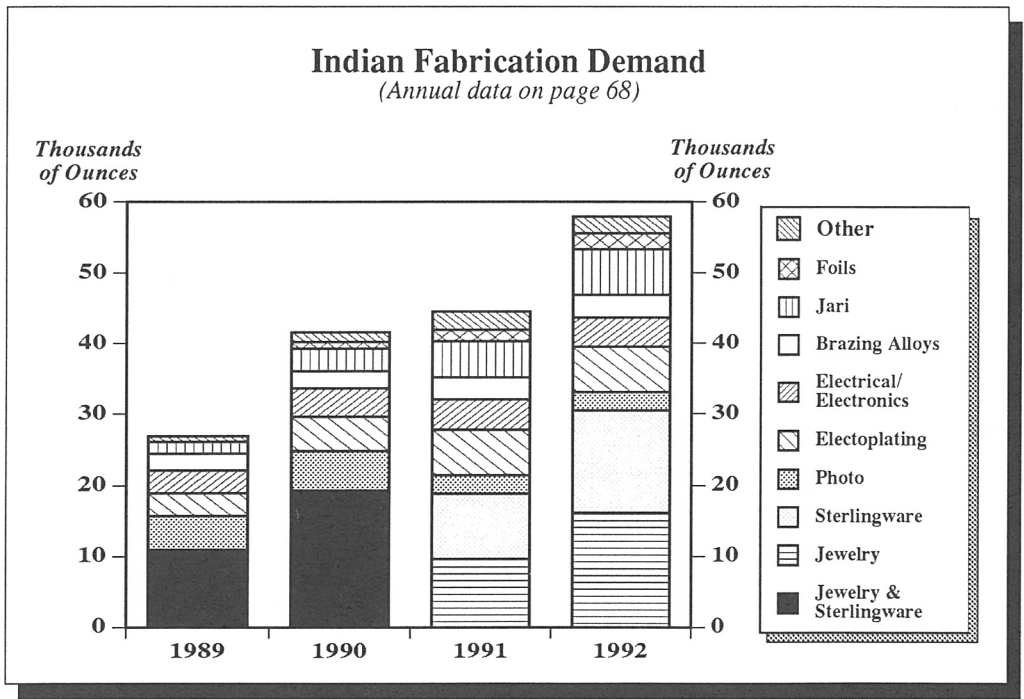
Demand for silver bullion in India surged upward again in 1992, continuing a rapid expansion that began in 1988. Last year silver use in jewelry and silverware, called 'household demand' in the Indian market, rose 62.2% from 18.8 million ounces in 1991 to 30.5 million ounces. This increase boosted total Indian silver use, including industrial applications, 29.9% from 44.5 million ounces in 1991 to 57.8 million ounces in 1992.

The expansion reflects stronger economic growth, and an increase in per capita disposable income. During the past four years there has been an accelerating use of silver in jewelry and silverware, which often are purchased as investments. In fact, the five-fold increase in demand for these products

since 1987 accounts for 64% of the 37.8 million ounce rise in total Indian silver demand during this time.

It is important to note that, while demand for silver in jewelry and silverware has risen sharply, demand for silver in other, more industrial applications also has almost doubled in the same time.

Total silver demand in India rose to 22.5 million ounces in 1988, up 12% from 20.1 million ounces the previous year. Silver use expanded a further 20% in 1989, to more than 27.0 million ounces. In 1990, silver use jumped 55% to 41.8 million ounces. This growth rate slowed considerably in 1991, when demand rose 6.5% to 44.5 million ounces. In 1992, silver use amounted to 57.8 million ounces, a rise of 29.9%.



Jewelry and silverware accounted for around 53% of Indian silver use in 1992, up from 31% in 1987. It is unclear whether this level can be maintained in 1993. Much of the jewelry industry was shut down in January and February in the wake of religious strife. Jewelry accounted for 16.1 million ounces of the silver going into household items in 1992, up from 9.6 million ounces in 1991.

Additionally, consumer demand for household items is closely tied to general economic conditions. In the wake of India's financial and economic woes in 1991, the use of silver in household items fell around 3%, to 18.8 million ounces from 19.3 million ounces the previous year. This year, the ongoing politico-religious crisis could drain some of the energy out of the Indian economy, although silver demand does appear somewhat firmer in the first few months of 1993.

Use of silver for India's industrial sector has risen sharply over the past five years, expanding from 13.8 million ounces in 1987 to 27.3 million ounces last year, an increase of 98%. Industrial uses include photography, electroplating, electrical and electronic applications, brazing alloys, jari, and foils.

Jari, the silver thread used in traditional Indian clothing, now accounts for 23.4% of industrial demand, up from 10% in 1989. Jari use stood at 1.6 million ounces in 1989. By 1992 it had risen to 6.4 million ounces, an increase of 300%. Jari demand for silver rose 1.3 million ounces last year, or 25.5%. The use of silver in electroplating rose

strongly in 1990, to 4.8 million ounces from 3.2 million ounces in 1989, and again in 1991, to 6.4 million ounces. Last year, electroplating was flat at 6.4 million ounces. It now is tied with jari as the biggest industrial market for silver in India.

Photography has declined in importance as a silver use in the past two years. In 1989, it accounted for nearly 30% of Indian fabrication demand, using 4.8 million ounces. Photographic demand increased 17% the following year, to 5.6 million ounces. While this still represented the largest industrial market for silver, photography's share slipped to 25%. The amount of silver used in the photographic sector eroded in 1991 to 2.6 million ounces, and was flat in 1992. Its share of Indian industrial demand shrank to around 10% in 1991 and 1992, making it the fifth largest industrial use of silver in that country.

Photographic use of silver in India is government related. Silver is not used in consumer film and paper, but in government blueprints for military and major civilian projects. Requirements from this sector have declined sharply in the past two years, and the government thus has reduced silver purchases for those applications.

Silver used in electrical and electronic applications rose to 4.0 million ounces in 1990 from 3.2 million ounces in 1989, expanded another 200,000 ounces to 4.2 million ounces in 1991, and was unchanged last year. Indian demand from this sector has been holding up well in light of the worldwide decline in electronics use, partly reflecting a shift in manufacturing sites toward countries like India.

Demand for brazing alloys has been steady for the past two years, at 3.2 million ounces, after rising 800,000 ounces from 2.4 million ounces per year in 1989 and 1990.

1.6 million ounces, and rose a further 44% to 2.3 million ounces last year. The foil is used primarily in chewing tobacco as an additive. It also is used in cigarette packaging.

Foils have emerged since 1991 as the fastest growing segment of industrial silver use in India. Mainly used by the tobacco industry, silver use in foil first surfaced in 1990, when 1.0 million ounces of silver was consumed. Demand jumped 60% in 1991 to

The use of silver in other applications more than tripled between 1989 and 1991, expanding from 800,000 ounces to 2.6 million ounces. In 1992, these applications took only 2.3 million ounces of silver.

Indian Fabrication Demand

Million Troy Ounces

	1987	1988	1989	1990	1991	1992
Industrial Uses						
Photography	—	—	4.8	5.6	2.6	2.6
Electroplating	—	—	3.2	4.8	6.4	6.4
Electrical/Electronics	—	—	3.2	4.0	4.2	4.2
Brazing Alloys	—	—	2.4	2.4	3.2	3.2
Jari	—	—	1.6	3.2	5.1	6.4
Foils	—	—	—	1.0	1.6	2.3
Other	—	—	0.8	1.4	2.6	2.3
Subtotal	13.8	16.1	16.1	22.5	25.7	27.3
<i>% Change Year Ago</i>	—	16.5	-0.2	40.0	14.3	6.3
Jewelry & Silverware						
Jewelry	—	—	—	—	9.6	16.1
Silverware	—	—	—	—	9.2	14.4
Subtotal	6.3	6.4	10.9	19.3	18.8	30.5
<i>% Change Year Ago</i>	—	1.6	70.3	77.1	-2.6	62.2
TOTAL	20.1	22.5	27.1	41.8	44.5	57.8
<i>% Change Year Ago</i>	—	16.5	-0.2	40.0	97.8	29.9

Sources: Indian trade sources, CPM Group

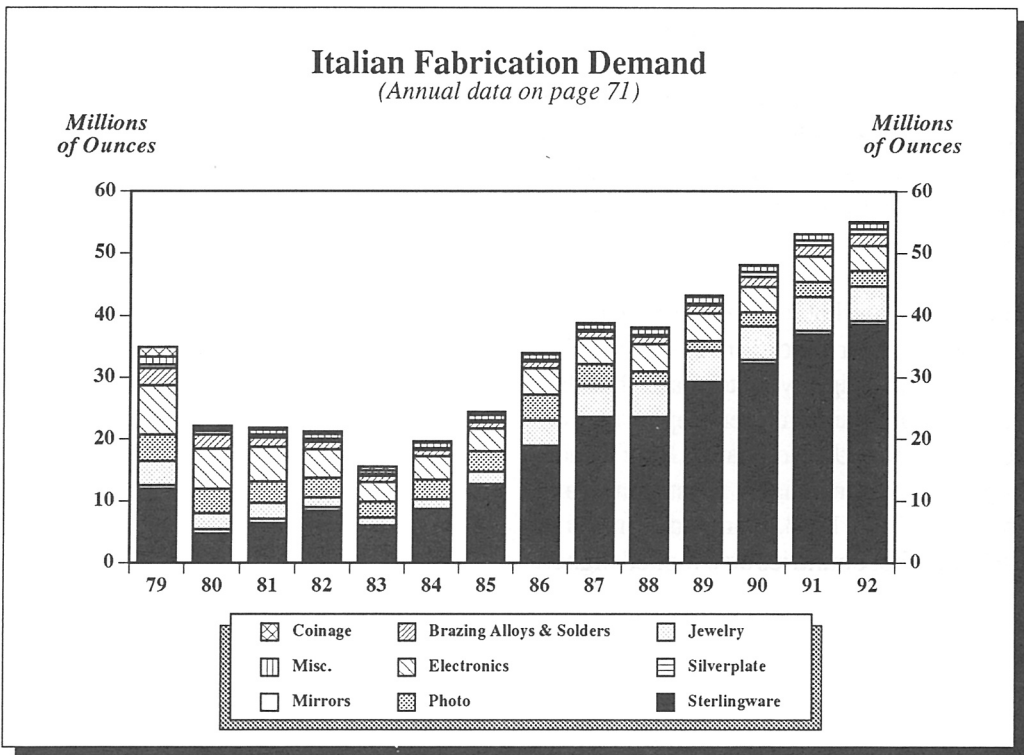
Italy

In 1992, Italian fabrication demand continued to outpace silver use in other major European countries. Italy consumed 55.1 million ounces (including coinage), up 4% from 53.0 million ounces in 1991. There are indications that demand could rise at a slightly faster pace in 1993, although probably not at the 10% - 14% pace seen in 1989 - 1991.

As has been the case since 1984, sterlingware powered last year's gain. Use of silver in Italian sterlingware rose 4.3% in 1992, to 38.6 million ounces from 37.0 million ounces the previous year. Sterlingware accounted for 70% of total Italian silver use.

Demand in other areas was mixed last year. Silver jewelry was steady at 5.5 million ounces, for the third year in a row. Photographic applications took 2.5 million ounces, up 200,000 ounces from 1991. Silver use in brazing alloys and solders rose to 1.9 million ounces from 1.8 million ounces. Italian coinage absorbed 200,000 ounces last year, compared with none in 1991, and 100,000 ounces in 1990. Electronics use, however, fell 2.4% to 4.0 million ounces.

Meanwhile, use in silverplate was flat at 600,000 ounces. Mirrors took 800,000 ounces of silver in 1992, unchanged from the previous year. Use in other industrial applications was level at 1.0 million ounces.



Sterlingware has been the key to the strength in Italian silver demand for 10 years. In 1979, this segment accounted for more than one third of the country's total silver demand, using 12.0 million ounces of silver. Sterlingware demand fell to 4.7 million ounces the following year, as manufacturers ratcheted down production in the wake of soaring silver prices. Its share of total demand declined to 21% that year, and sterlingware briefly became the second largest end-use for silver in Italy, after electronics.

Demand rebounded over the next two years, reaching 8.4 million ounces in 1982, then slipped to 5.5 million ounces in 1983. Since then, sterlingware has expanded six-fold, to 38.6 million ounces in 1992. Much of this increase is attributable to aggressive cost-cutting on the part of the Italian sterlingware industry, which currently is among the most efficient in the world. Italy now dominates industrialized world sterlingware manufacturing, a trend that is unlikely to be reversed in the foreseeable future.

There are signs that Italian sterlingware use will set another record in 1993, possibly growing at a slightly faster pace than last year. Italian manufacturers report that orders from the United States, Italy's most important export market for sterlingware, soared early in 1993. Demand from other EEC member countries also looked higher.

Italian Fabrication Demand

Million Troy Ounces

	1979	1980	1981	1982	1983	1984	1985
Sterlingware	12.0	4.7	6.4	8.4	5.5	8.2	12.3
Silverplate	0.6	0.7	0.7	0.6	0.5	0.5	0.5
Jewelry	3.9	2.6	2.6	1.6	1.3	1.6	2.0
Photography	4.2	4.0	3.5	3.2	2.6	3.2	3.2
Electronics	8.0	6.4	5.5	4.5	3.2	3.7	3.7
Brazing Alloys & Solders	2.7	2.3	1.5	1.2	1.0	1.0	1.0
Mirrors	0.6	0.6	0.5	0.5	0.3	0.3	0.3
Miscellaneous	1.3	0.5	0.8	0.8	0.6	0.9	0.9
Total	33.3	21.8	21.5	20.8	15.0	19.4	24.0
<i>% Change Year Ago</i>	—	-34.5	-1.4	-3.3	-27.9	29.5	23.4
Coinage	1.6	0.3	0.3	0.4	0.6	0.2	0.5
TOTAL INCLUDING COINAGE	34.9	22.1	21.8	21.2	15.6	19.6	24.5
<i>% Change Year Ago</i>	—	-36.7	-1.4	-2.8	-26.4	25.6	24.6
	1986	1987	1988	1989	1990	1991	1992
Sterlingware	18.5	23.2	23.2	28.9	32.2	37.0	38.6
Silverplate	0.4	0.4	0.4	0.4	0.6	0.6	0.6
Jewelry	4.1	5.0	5.4	5.0	5.5	5.5	5.5
Photography	4.2	3.5	1.9	1.6	2.3	2.3	2.5
Electronics	4.2	4.2	4.5	4.5	4.0	4.1	4.0
Brazing Alloys & Solders	1.1	1.1	1.2	1.3	1.6	1.8	1.9
Mirrors	0.3	0.3	0.3	0.3	0.8	0.8	0.8
Miscellaneous	0.9	0.9	1.0	1.1	1.0	1.0	1.0
Total	33.5	38.6	37.9	43.0	47.9	53.0	54.9
<i>% Change Year Ago</i>	39.9	15.2	-2.0	13.7	11.3	10.6	3.6
Coinage	0.2	0.2	0.2	0.2	0.1	0.0	0.2
TOTAL INCLUDING COINAGE	33.7	38.8	38.0	43.3	48.0	53.0	55.1
<i>% Change Year Ago</i>	37.9	15.1	-2.0	13.8	10.9	10.4	4.0

Notes: Totals may not equal the sums of categories due to rounding. Consumption of silver in semi-fabricated form is excluded.

Sources: *European trade sources, CPM Group*

Germany

German silver use totaled 55.3 million ounces in 1992, including coins. This was down 5.2% from the year before. Excluding coins, German industrial silver demand also fell 5.2%, to 50.1 million ounces from 52.8 million ounces in 1991.

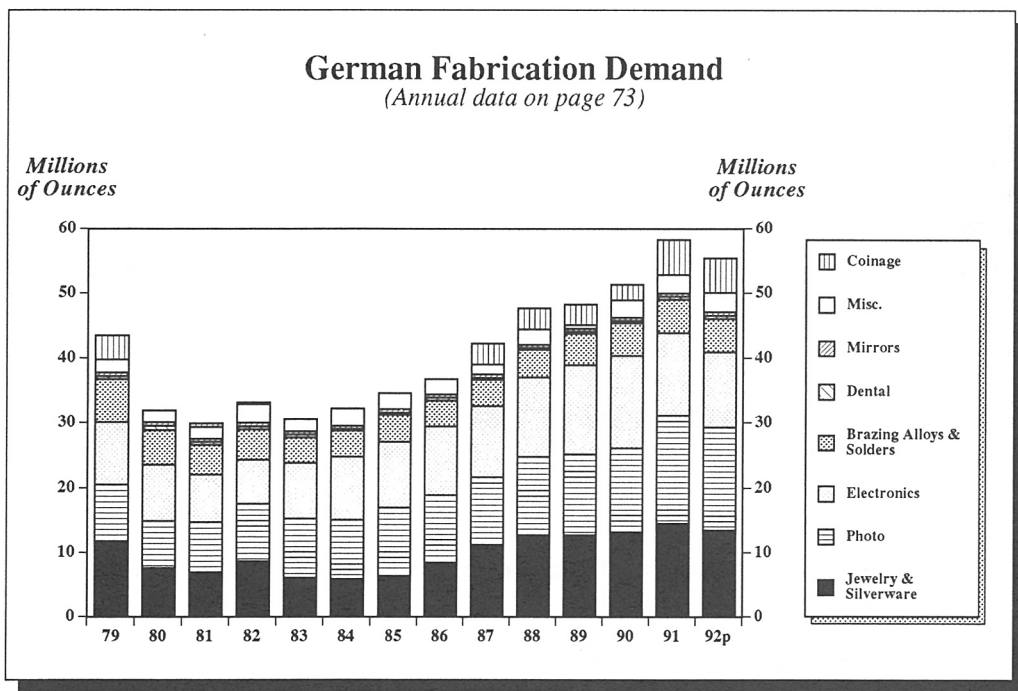
Silver use in photography in Germany decreased 4.8% to 15.9 million ounces in 1992, from 16.7 million ounces in 1991. Even so, silver demand in photography remained well above the 12.1 - 12.9 million ounces per year used from 1988 through 1990, before a sharp rise in 1991.

The second largest use of silver in Germany now is in jewelry and sterlingware, which surpassed electronic and electrical applications in 1991 for the first time in a

decade. In 1992, 13.5 million ounces of silver were used in sterlingware and jewelry in Germany, down 6.9% from 14.5 million ounces in 1991. The decline appears to reflect consumer spending restraints, given economic problems in Germany. Based on the view that the decline is due to these cyclical economic constraints, German market participants expect demand to rise again once the economic outlook for Germany improves.

Electronic connectors, electrical contacts, and batteries used 11.6 million ounces of silver in 1992, down 8.7% from 12.7 million ounces in 1991.

Brazing alloys and solders used 5.1 million ounces of silver in Germany in 1992, unchanged from the year before.



Another 4.0 million ounces of silver were used in 1992 in dental alloys, mirrors, and miscellaneous other applications. This was up slightly from 3.8 million ounces in 1991.

The German government used 5.3 million ounces of silver in coins in 1992, down

slightly from 5.5 million ounces in 1991. Even with this slight decline, German coinage remained sharply higher than the 2.4 million ounces used in 1990 and the 3.2 million ounces used annually from 1987 through 1989. Prior to that, little silver had been used in coinage in Germany between 1979 and 1986.

German Fabrication Demand

Million Troy Ounces

	1979	1980	1981	1982	1983	1984	1985
Jewelry & Silverware	11.8	7.6	6.9	8.7	6.1	5.9	6.4
Photography	8.7	7.3	7.8	8.9	9.2	9.2	10.6
Electronics	9.6	8.7	7.4	6.7	8.6	9.7	10.1
Brazing Alloys & Solders	6.7	5.3	4.5	4.7	3.9	4.0	4.2
Dental	0.5	0.7	0.5	0.5	0.4	0.3	0.3
Mirrors	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Miscellaneous	2.0	1.8	1.8	2.9	1.9	2.6	2.5
Total	39.8	31.9	29.3	32.7	30.3	32.2	34.6
<i>% Change Year Ago</i>	—	-19.8	-8.2	11.6	-7.3	6.2	7.5
Coinage	3.7	—	0.5	0.3	—	—	—
TOTAL							
INCLUDING COINAGE	43.5	31.9	29.8	33.0	30.3	32.2	34.6
<i>% Change Year Ago</i>	—	-26.7	-6.6	10.7	-8.2	6.2	7.5
	1986	1987	1988	1989	1990	1991	1992
Jewelry & Silverware	8.5	11.2	12.7	12.7	13.2	14.5	13.5
Photography	10.4	10.5	12.1	12.5	12.9	16.7	15.9
Electronics	10.6	10.9	12.3	13.8	14.3	12.7	11.6
Brazing Alloys & Solders	4.0	4.1	4.2	4.8	5.0	5.1	5.1
Dental	0.4	0.3	0.3	0.3	0.4	0.5	0.5
Mirrors	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Miscellaneous	2.4	1.6	2.4	2.6	2.6	2.8	3.0
Total	36.8	39.1	44.6	47.3	48.9	52.8	50.1
<i>% Change Year Ago</i>	6.3	6.3	14.1	6.1	3.3	8.0	-5.2
Coinage	—	3.2	3.2	3.2	2.4	5.5	5.3
TOTAL							
INCLUDING COINAGE	36.8	42.3	47.8	50.5	51.3	58.4	55.3
<i>% Change Year Ago</i>	6.3	15.1	13.0	5.6	1.6	13.7	-5.2

Notes: Totals may not equal the sums of categories due to rounding.

Sources: *European trade sources, CPM Group*

France

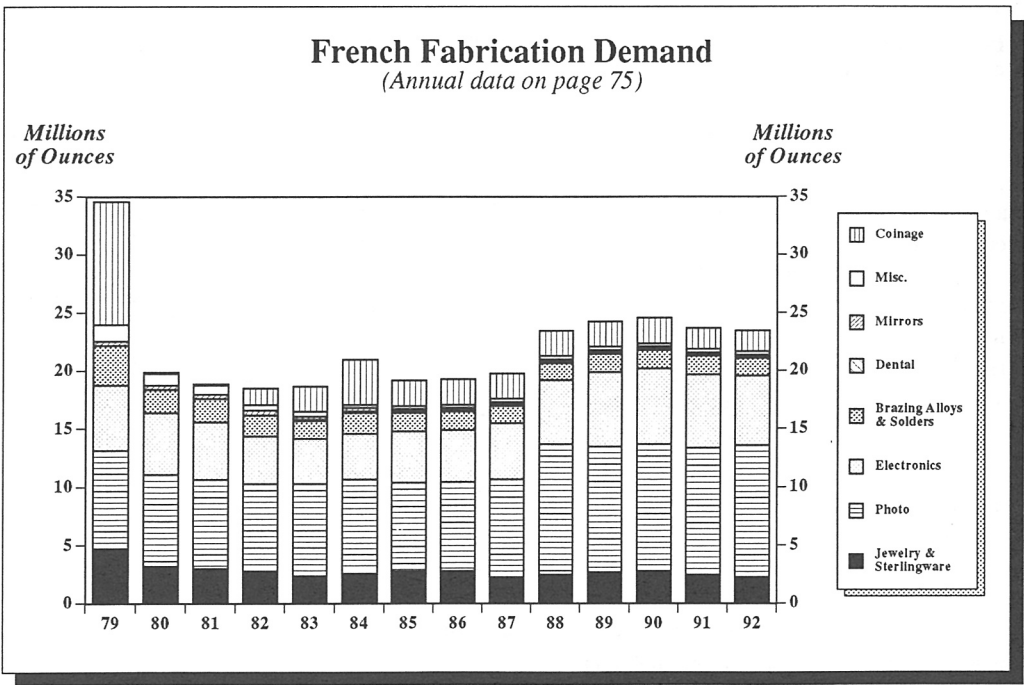
Total silver use in France declined 0.8% to 23.5 million ounces in 1992, following a 2.4% decrease in 1991. Overall, silver use is off only 1.1 million ounces from its cyclical peak of 22.4 million ounces in 1990.

The decline in French silver use has been concentrated in the jewelry, sterlingware, and electronics industries. There appear to be several factors that have contributed to these declines.

Photography, the major use of silver in France, continues to expand. In fact, silver use in photography reached 11.3 million ounces in 1992, rising 3.7% from the 10.9 million ounces consumed in 1991. A further increase is expected in 1993.

Electronics is the second largest end use of silver in France. In 1992 silver use in electronics decreased 4.8% to 6.0 million ounces, from 6.3 million ounces in 1991. This was the second consecutive year of declining silver use in electronics and electrical contacts.

In the sterlingware and jewelry sector, silver use fell 200,000 ounces, or 8%, from 2.5 million ounces in 1991 to 2.3 million ounces in 1992. This followed a 10.7% drop, or 300,000 ounces, from 2.8 million ounces in 1990 to the lower 1991 level. To some extent this decline represents a shift away from domestically produced sterlingware in favor of Italian product. It also reflects a shift away from silver jewelry among French consumers, after a period of stronger demand for silver jewelry in the late 1980s and 1990.



The fourth largest use of silver in France is in brazing alloys and solders. In this sector French silver use totaled 1.5 million ounces in 1992, down from 1.6 million ounces in 1991. Dental alloys, mirrors, and

other small industrial applications absorb another 600,000 ounces of silver annually and have been relatively stable in recent years.

French Fabrication Demand

Million Troy Ounces

	1979	1980	1981	1982	1983	1984	1985
Jewelry & Silverware	4.7	3.2	3.0	2.8	2.4	2.6	2.8
Photography	8.5	7.9	7.7	7.5	7.9	8.1	7.6
Electronics	5.6	5.3	4.9	4.1	3.9	3.9	4.4
Brazing Alloys & Solders	3.4	2.0	2.0	1.8	1.5	1.8	1.6
Dental	*	*	*	*	0.1	0.1	0.1
Mirrors	0.4	0.4	0.4	0.4	0.3	0.3	0.2
Miscellaneous	1.4	1.0	0.8	0.5	0.4	0.3	0.3
Total	24.1	19.8	18.9	17.1	16.5	17.1	16.9
<i>% Change Year Ago</i>	—	-17.8	-4.5	-9.5	-3.5	3.7	-0.9
Coinage	10.6	0.1	0.1	1.4	2.2	3.9	2.2
TOTAL							
INCLUDING COINAGE	34.7	19.9	19.0	18.5	18.7	21.0	19.1
<i>% Change Year Ago</i>	—	-42.7	-4.5	-2.6	1.1	12.3	-8.9
	1986	1987	1988	1989	1990	1991	1992
Jewelry & Silverware	2.8	2.3	2.5	2.7	2.8	2.5	2.3
Photography	7.7	8.4	11.2	10.8	10.9	10.9	11.3
Electronics	4.4	4.8	5.5	6.4	6.5	6.3	6.0
Brazing Alloys & Solders	1.6	1.5	1.5	1.6	1.6	1.6	1.5
Dental	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Mirrors	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Miscellaneous	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total	17.0	17.6	21.3	22.1	22.4	21.9	21.7
<i>% Change Year Ago</i>	0.4	3.4	20.9	3.9	1.4	-2.4	-0.8
Coinage	2.2	2.2	2.2	2.2	2.2	1.8	1.8
TOTAL							
INCLUDING COINAGE	19.2	19.8	23.4	24.3	24.6	23.7	23.5
<i>% Change Year Ago</i>	0.3	3.0	18.5	3.6	1.3	-3.8	-0.8

Notes: Totals may not equal the sums of categories due to rounding. Asterisks indicate that consumption in individual industries totaled less than 100,000 ounces.

Sources: *European trade sources, CPM Group*

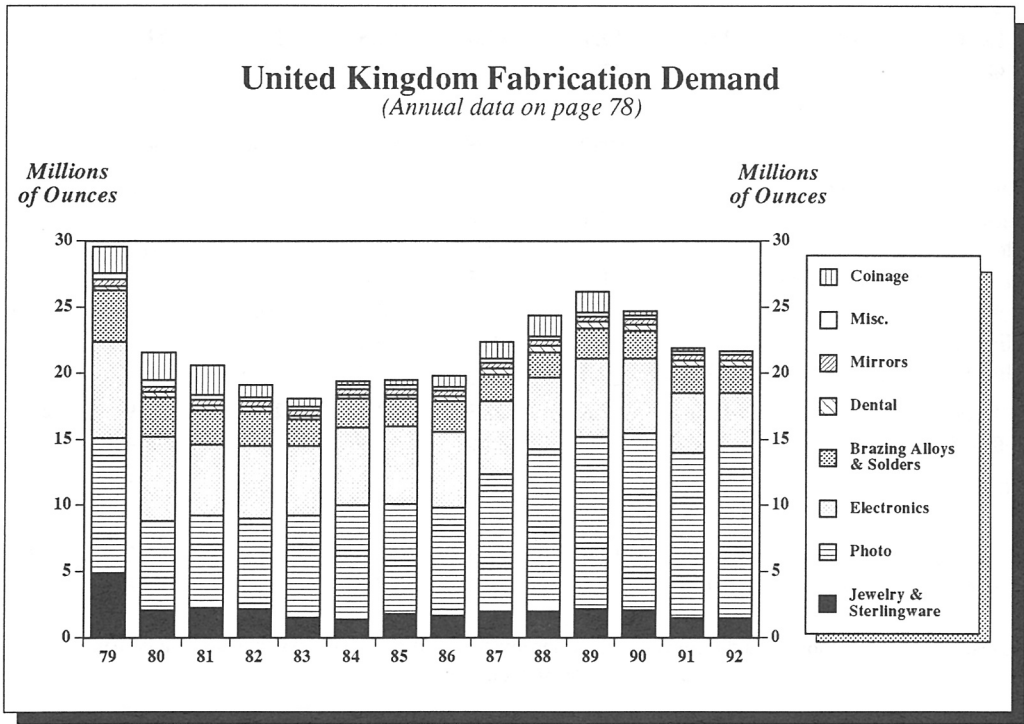
United Kingdom

Total British silver use was flat in 1992, unchanged from 1991 at 21.7 million ounces. This followed an 11.1% decline in 1991, and reflected the extended economic recession that has plagued the United Kingdom. Prospects are for an economic recovery to emerge in the United Kingdom over the course of 1993, although such a recovery is expected to be relatively anemic and not fully in place until the second half of the year. It is not clear whether such a revival would be reflected in higher silver use, however.

While total U.K. silver use was unchanged in 1992, that figure masks two important developments. First, silver use in photography rose an estimated 4.0%, from 12.5

million ounces in 1991 to 13.0 million ounces in 1992. This increase only partially made up for the sharper decline in silver use in photography from 1990 to 1991, and 1992 consumption of 13.0 million ounces remained below the peak silver use of 13.4 million ounces in 1990. In contrast to other countries, the growth in silver use in photography in the United Kingdom last year occurred in commercial photography as well as in medical and dental x-rays.

Silver use in electrical contacts and electronic connectors meanwhile fell 500,000 ounces to 4.0 million ounces in 1992 from 4.5 million ounces in 1991. This was the third consecutive year of lower silver use in this sector, which partly reflects weak conditions in the U.K. electronics market



and partly reflects a shift away from domestically produced products toward imported semi-manufactured silver products.

Photography remains the major end use of silver in the United Kingdom by a wide margin, accounting for nearly 60% of silver consumption. The electronics industry is the second largest U.K. market, taking 18.4% of total silver use last year. Brazing alloys and solders are the third largest silver use sector in the United Kingdom. Around 2.0 million ounces of silver was used in brazing alloys and solders last year, unchanged from 1991 levels. In fact, silver use in this industry has been stable for several years.

Silver use in jewelry and sterlingware is relatively small in the United Kingdom. Demand is estimated at 1.5 million ounces in 1992, unchanged from 1991's level. This is down from 2.0 - 2.2 million ounces per year between 1987 and 1990, before the recession began in the United Kingdom. Additionally, some of this industry's silver requirements, in the form of sheet, wire, and other milled semi-manufactured products, is being met by imports. Since the consumption of silver bullion is measured where these products are made, for example in Germany, care is taken not to double count this metal by also counting the demand for silver semi-manufactured products in England.

Small amounts of silver are used in dental alloys, mirrors, and miscellaneous other industrial applications in the United Kingdom. Combined these uses absorbed around 1.2 million ounces in 1992, unchanged from the year before.

United Kingdom Fabrication Demand

Million Troy Ounces

	1979	1980	1981	1982	1983	1984	1985
Jewelry & Silverware	4.9	2.1	2.3	2.2	1.5	1.4	1.8
Photography	10.2	6.7	6.9	6.8	7.7	8.6	8.3
Electronics	7.3	6.4	5.4	5.5	5.3	5.9	5.9
Brazing Alloys & Solders	3.9	3.0	2.6	2.6	2.0	2.2	2.1
Dental	0.3	0.4	0.4	0.4	0.3	0.3	0.3
Mirrors	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Miscellaneous	0.5	0.5	0.4	0.3	0.3	0.3	0.3
Total	27.6	19.5	18.4	18.1	17.7	19.2	19.1
<i>% Change Year Ago</i>	—	-29.3	-5.6	-1.6	-2.2	8.3	-0.5
Coinage	2.0	2.1	2.2	0.9	0.6	0.3	0.4
TOTAL							
INCLUDING COINAGE	29.6	21.6	20.6	19.1	18.3	19.5	19.5
<i>% Change Year Ago</i>	—	-27.0	-4.6	-7.3	-4.2	6.4	-0.1
	1986	1987	1988	1989	1990	1991	1992
Jewelry & Silverware	1.7	2.0	2.0	2.2	2.1	1.5	1.5
Photography	8.1	10.4	12.3	13.0	13.4	12.5	13.0
Electronics	5.8	5.5	5.4	5.9	5.6	4.5	4.0
Brazing Alloys & Solders	2.3	2.0	1.9	2.3	2.1	2.0	2.0
Dental	0.4	0.5	0.5	0.5	0.5	0.5	0.5
Mirrors	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Miscellaneous	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total	19.1	21.1	22.7	24.5	24.4	21.7	21.7
<i>% Change Year Ago</i>	0.2	10.5	7.7	7.9	-0.5	-11.1	0.0
Coinage	0.8	1.3	1.6	1.6	0.3	0.2	NA
TOTAL							
INCLUDING COINAGE	19.8	22.4	24.3	26.1	24.7	21.9	NA
<i>% Change Year Ago</i>	1.8	13.1	8.7	7.4	-5.5	-11.3	

Notes: Totals may not equal the sums of categories due to rounding.

Sources: *European trade sources, CPM Group*

The Netherlands

The Netherlands has been a steady source of demand for 1.2 to 1.3 million ounces of silver per year since the middle of the 1980s. In 1992, Dutch fabricators used around 1,308,500 ounces of silver. This was 0.5% more than the 1,302,100 ounces used in fabricated products during 1991.

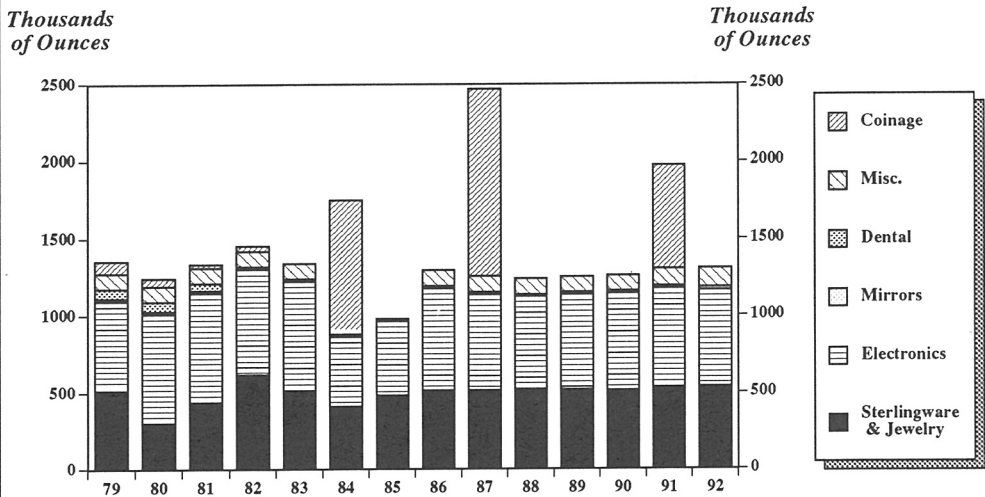
The largest use of silver in The Netherlands is in electrical and electronic contacts and connectors. This industry used 623,700 ounces of silver in 1992, down 3.0% from 643,000 ounces in 1991. Silver use in electronics had been around 707,300 ounces per year in the early 1980s. Silver use fell to 450,100 ounces in 1984 and 482,300 ounces in 1985, before rebounding sharply to 659,100 ounces in 1986. The

decline and subsequent recovery reflected shifting market shares in the European electrical contacts market at the time. Since 1986 Dutch silver use in electronics has been relatively stable between 610,000 ounces and 660,000 ounces per year.

The other major use of silver in The Netherlands is in sterlingware and jewelry. These industries used 540,100 ounces in 1992, 1.8% more than the 530,500 ounces used in 1991. Silver use in sterlingware and jewelry has been rising slowly, at a 0.9% per annum rate, since the middle 1980s.

A small amount of silver, estimated at 19,300 ounces, was used in the manufacture of mirrors in The Netherlands last year. Silver use in mirrors rose to that level

The Netherlands Fabrication Demand
(Annual data on page 81)



after many years in which it was said to be stable around 16,000 ounces per year. Other industrial applications consumed an estimated 125,400 ounces of silver in 1992, up from 112,500 ounces in 1991.

In addition to industrial products, silver is sometimes used in official coinage in The Netherlands. In 1991 the Dutch government used 672,900 ounces in a silver coin program. This program was not repeated in 1992. As the accompanying table illustrates, the Dutch government used small amounts of silver, on the order of 22,500 to 80,400 ounces per year, in coinage until the early 1980s. Since that time the government has intermittently issued silver commemorative coins, using 872,700 ounces in coinage in 1984, for example, and then 1,214,900 ounces in 1987.

The Netherlands Fabrication Demand

Thousand Troy Ounces

	1979	1980	1981	1982	1983	1984	1985
Sterlingware/Jewelry	516.8	305.4	440.5	620.2	516.8	413.5	482.3
Electronics	578.7	707.3	707.3	681.6	707.3	450.1	482.3
Mirrors	16.1	16.1	16.1	16.1	16.1	16.1	16.1
Dental	64.3	64.3	48.2	—	—	—	—
Miscellaneous	100.0	100.0	100.0	102.9	100.0	—	—
Total	1,275.9	1,193.1	1,312.1	1,420.8	1,340.2	879.7	980.6
<i>% Change Year Ago</i>	—	-6.5	10.0	8.3	-5.7	-34.4	11.5
Coinage	80.4	48.2	22.5	32.2	—	872.7	—
TOTAL							
INCLUDING COINAGE	1,356.3	1,241.3	1,334.6	1,452.9	1,340.2	1,752.4	980.6
<i>% Change Year Ago</i>	—	-8.5	7.5	8.9	-7.8	30.8	-44.0
	1986	1987	1988	1989	1990	1991	1992
Sterlingware/Jewelry	516.8	516.8	514.4	520.8	517.6	530.5	540.1
Electronics	659.1	620.2	610.9	614.1	623.7	643.0	623.7
Mirrors	16.1	16.1	9.6	14.5	16.1	16.1	19.3
Dental	—	—	—	—	—	—	—
Miscellaneous	102.9	102.9	102.9	102.9	102.9	112.5	125.4
Total	1,294.9	1,256.0	1,237.8	1,252.3	1,260.3	1,302.1	1,308.5
<i>% Change Year Ago</i>	32.1	-3.0	-1.4	1.2	0.6	3.3	0.5
Coinage	—	1,214.9	—	—	—	672.9	—
TOTAL							
INCLUDING COINAGE	1,294.9	2,470.9	1,237.8	1,252.3	1,260.3	1,975.0	1,308.5
<i>% Change Year Ago</i>	32.1	90.8	-49.9	1.2	0.6	56.7	-33.7

Notes: Totals may not equal components due to rounding.

Sources: *European trade sources, CPM Group*

Thailand

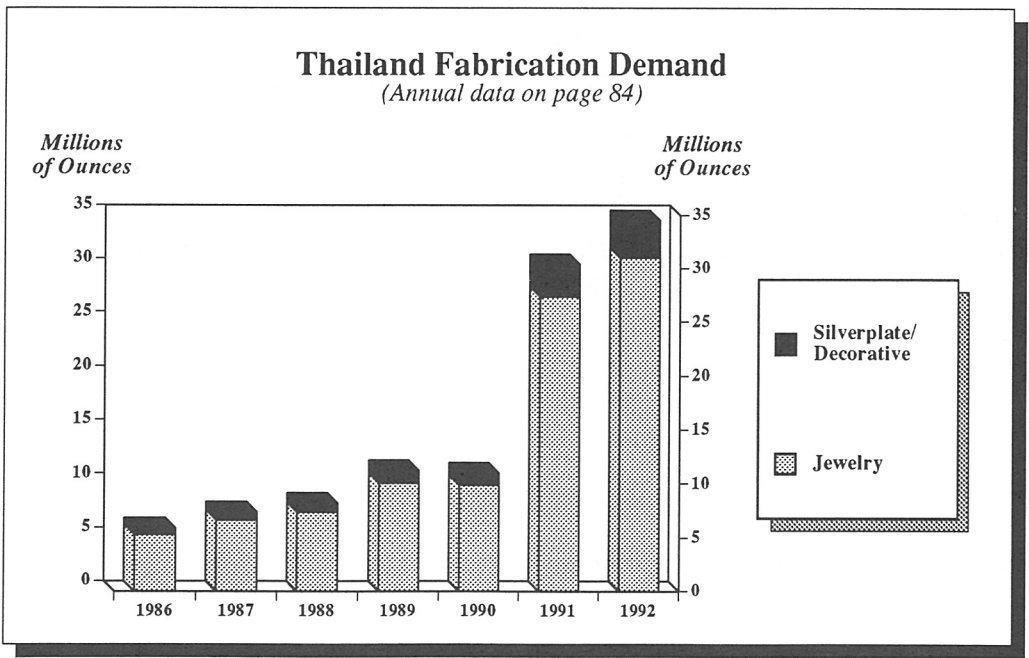
In recent years Thailand has emerged as a major consumer of silver. In 1986, the country used just 5.9 million ounces. Demand almost doubled, reaching 11.2 million ounces in 1989. After a pause in 1990, silver use in Thailand nearly tripled in 1991, rising to 30.4 million ounces. In 1992 Thailand used 34.5 million ounces, an increase of 485% over six years.

There are only two silver-using industries in Thailand. Jewelry always has taken the bulk of the silver, consistently accounting for around 90% of total demand. In 1986, Thai jewelry manufacturers took 5.3 million ounces. Last year they used 31.0 million ounces.

The rapid rise of jewelry production has been actively encouraged by Thailand's

government, as part of its drive to stimulate exports. In fact, the government's Export Promotion Department is working with the industry to expand exports even further. The agency's stated goal is to increase jewelry exports 20% - 30% annually between now and 1997. Thai industry sources expect exports (and silver use) to grow around 30% this year. However, this could represent at least an interim peak, with some sharp adjustments possible in the mid-1990s. Additionally, there are indications that some jewelry manufacturers are shifting away from silver to higher-margin gold items.

Most of the industry currently produces low to middle quality silver jewelry, primarily silver chain, with some in the form of ring settings for gemstones. Virtually all of Thai jewelry is exported to Europe, the United States, and Asian countries. The



largest local export market is Burma. There also is tremendous demand for silver jewelry in Cambodia and Laos.

Silver also is used in silverware and decorative items, largely comprising souvenirs, including teapots, figurines, cigarette cases, and lighters. The demand growth in this sector has mirrored that of jewelry. Some 600,000 ounces of silver was used here in 1986, rising to 3.4 million ounces last year. Thai officials have been putting renewed emphasis on tourism in recent years, with mixed results, but silver souvenirs have proven popular with European and American tourists.

Almost all silver enters the country as 10 kilo or 100 kilo bars. Silver is imported from Burma, South Korea, Singapore, the Philippines, Australia, and Japan. The government levies a 25% duty on imports of fabricated silver (sheet and findings, etc.) as well as a 10% duty on unwrought silver. These duties are returned to fabricators on metal used in jewelry that is exported. One major jewelry producer actually imports findings from its overseas fabrication facility; its factories in Thailand assemble the findings for re-export as finished jewelry, mainly to the United States. This company's Thai jewelry output is not included in the demand figure shown in this report, as the silver initially is used in the United States and thus is counted as U.S. demand for bullion.

Official import statistics are accurate to a point. However, unofficial imports account for about three quarters of supply. Most of this black market silver is

smuggled through Burma, although much of it originates in South Korea, the Philippines, Japan, and Australia. There also is a small scrap component, but this source of supply is masked in the black market.

Jewelry manufacturers (and their silverware counterparts) rely on smuggled silver to avoid paying corporate income taxes. To be reimbursed for duties on official imports, companies must provide the government with a bank guarantee against exports, revealing their actual revenues.

Meanwhile, Thailand's burgeoning electronics industry could be a potential silver user later in the 1990s. The industry currently assembles circuit boards imported from the United States and elsewhere. It has no silver needs, either in unwrought form, salts, or paste. The largest electronics company in the country has been in existence for six years. The Thai government is urging the industry to move into manufacturing and away from piece work assembly, and electronics companies appear to be moving in that direction. Even then, however, the industry would likely lean toward importing silver in fabricated form.

Thailand Fabrication Demand*Million Troy Ounces*

	1986	1987	1988	1989	1990	1991	1992
Jewelry	5.3	6.6	7.4	10.1	9.9	27.3	31.0
Silverplate/Decorative	<u>0.6</u>	<u>0.7</u>	<u>0.8</u>	<u>1.1</u>	<u>1.1</u>	<u>3.0</u>	<u>3.4</u>
Total	5.9	7.4	8.2	11.2	11.0	30.4	34.5
<i>% Change Year Ago</i>	—	25.0	11.1	36.7	-1.9	176.2	13.5

Notes: Totals may not equal the sums of the categories due to rounding.

Sources: *Thai trade sources, CPM Group*

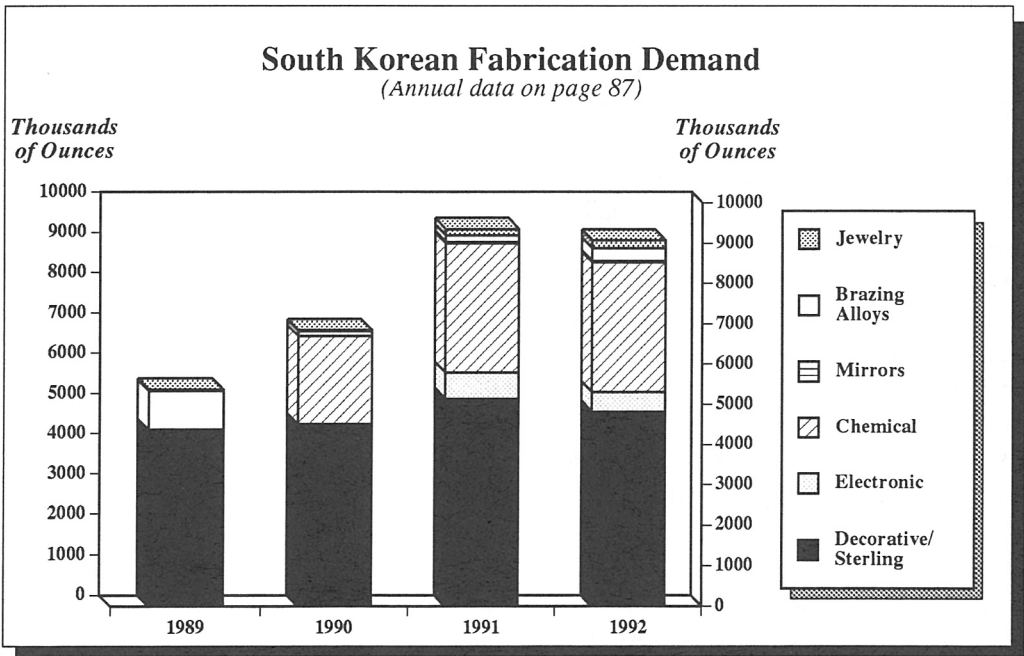
South Korea

Silver bullion demand for fabrication purposes in Korea rose sharply in 1990. Prior to that, around 5.0 - 6.0 million ounces per year was used. In 1991, there was a shift in this national market and capacity to produce silver milled products and chemicals for use in electronics was installed in Korea. After that, Korean demand for silver bullion rose, as production of these semi-manufactured or intermediate silver products rose in Korea and the import of these products fell. Korean silver use rose 36.7% in 1991, from 6.8 million ounces in 1990 to 9.4 million ounces. In 1992 recessionary business conditions limited demand for these products, and silver use fell around 3.1%, to an estimated 9.1 million ounces.

Local decorative uses (silver spoons and chopsticks for children on their birthdays)

traditionally accounted for most of the silver use in Korea. It still counts for more than half of demand. This demand sector used 4.3 million ounces of silver in 1989, 4.5 million ounces in 1990 and rose to 5.1 million ounces in 1991. Stringent economic conditions reduced consumer demand for these discretionary goods in 1992, and silver use in their manufacture fell to 4.8 million ounces.

The second largest use of silver in Korea now is chemicals, which consumed around 3.2 million ounces per year in both 1991 and 1992. Prior to 1990, silver chemicals, used in a variety of applications, were entirely imported. Most of the chemicals produced in Korea appear to be plating salts used in the manufacture of electronics and electrical connectors, many of which are used for lower priced electronic consumer products.



Electronics use of silver also began rising around 1990, as the production of silver wires and other materials was shifted to Korean operations. When this occurred, imports of unwrought metal rose sharply, more than doubling from 3.7 million ounces in 1990 to 8.9 million ounces in both 1991 and 1992. Exports of unwrought metal also fell in 1991, reflecting a greater domestic use of domestically refined production. Imports of semi-manufactured products fell sharply, replaced by domestically produced milled products and chemicals.

Silver is used in brazing alloys and solders, although in this sector demand appears to have declined in recent years. In 1989 an estimated 965,000 ounces of silver were used in brazing alloys in Korea. In 1990 this fell to around 121,000 ounces. Silver use rose back to 161,000 ounces in 1991, and appears to have doubled to 321,000 ounces in 1992.

Small amounts of silver are used in jewelry, in addition to the decorative items mentioned above. There are two major jewelry manufacturers in Korea, and hundreds of smaller operations. Most of these specialize in gold jewelry and jewelry set with stones and pearls. A few work with silver, but find limited demand for silver products. Silver use in jewelry is estimated to have been very limited prior to 1991. In 1991 maybe 161,000 ounces of silver were used in jewelry, rising to around 193,000 ounces in 1992.

Exports of fabricated semi-manufactured products rose sharply in 1990, from

840,000 ounces in 1989 to 2.3 million ounces in 1990. In 1991 exports of these products fell back to slightly less than 2.0 million ounces of contained silver. In 1992 the increased international competition and overall recessionary conditions led to a sharp drop, to an estimated 637,000 ounces in these exports.

South Korean Fabrication Demand*Thousand Troy Ounces*

	1989	1990	1991	1992
Decorative/Sterling	4,340.3	4,501.1	5,144.1	4,822.6
Electronics	3.2	8.0	643.0	482.3
Chemicals	32.2	2,183.0	3,215.1	3,215.1
Mirrors	0.0	0.0	32.2	32.2
Brazing Alloys	964.5	120.7	160.8	321.5
Jewelry	32.2	32.2	160.8	192.9
Total	5,372.4	6,845.0	9,355.9	9,066.5
<i>% Change Year Ago</i>	—	27.4	36.7	-3.1

Notes: Totals may not equal the sums of the categories due to rounding.

Sources: *Trade sources, CPM Group*

Taiwan

The silver market in Taiwan traditionally has been an industrial market. Silver's major uses in Taiwan were in electronics, solders and brazing alloys, and chemicals. There was not much silver used in jewelry, as silver jewelry is not particularly popular. Nor was there much silver used in sterlingware and sterling decorative objects. The consumer market for these was small, and most of these products were imported.

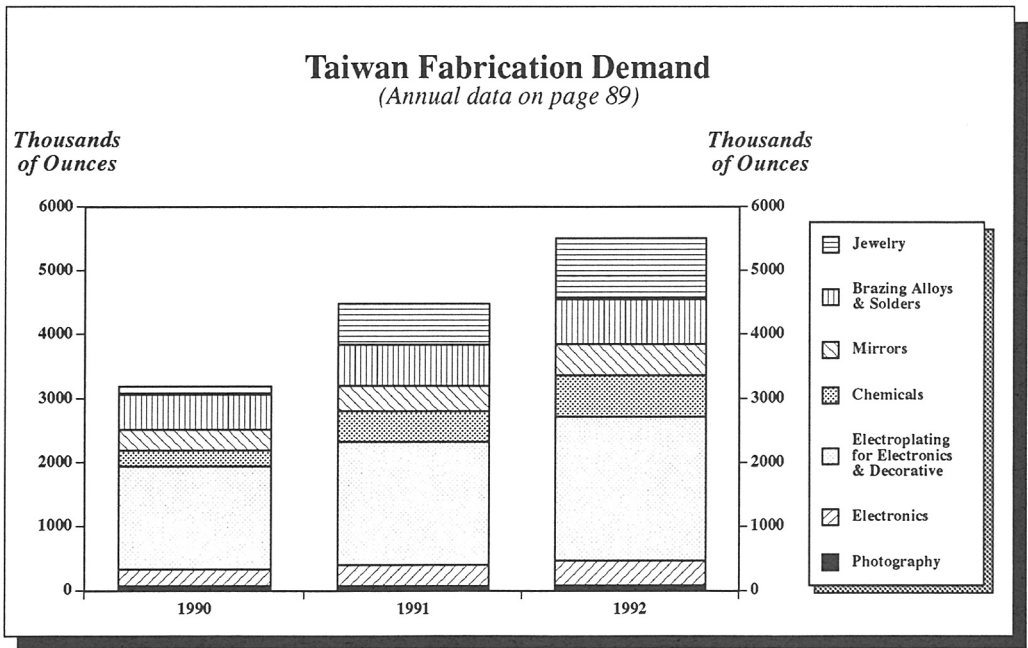
To some extent this is changing. Silver use in jewelry has risen sharply over the past two years, and, at an estimated 965,000 ounces in 1992, may have become the second largest end-use for silver in Taiwan.

In total, silver use in Taiwan has been rising strongly over the past two years.

Demand rose 40.5% from 3.2 million ounces in 1990 to 4.5 million ounces in 1991. The expansion in silver demand has been concentrated in electronics, electronic chemicals, other chemicals, and jewelry. Silver use increased a further 23% in 1992, reaching 5.5 million ounces.

Imports into Taiwan rose even faster, however, leading to the building up of perhaps 2.0 million ounces of silver in dealer and fabricator inventories. The presence of these stocks, and other inventories held in southern Taiwan, may restrain demand for additional metal in 1993, even as the consumption of silver may remain high.

The major use for silver in Taiwan is electronics. Silver use in electronics, in pastes and wires, totaled an estimated 2.3 million ounces in 1992, up from 1.9 million ounces in 1991 and 1.6 million ounces in 1990. In



contrast to many other countries, electronics use of silver rose in 1992 in Taiwan. Further growth is anticipated for 1993 by the companies involved in this industry.

The second largest use of silver in Taiwan has been in brazing alloys and solders, a sector fabricators in many other countries have abandoned to Taiwanese fabricators. An estimated 707,000 ounces of silver was used in these products in 1992, up from 643,000 ounces in 1991.

Solders and brazing alloys may have slipped into third place in terms of silver use in Taiwan last year, supplanted by silver use in jewelry. As mentioned above, silver jewelry traditionally has not enjoyed much of a market in Taiwan, or in many other Asian nations, for that matter. In the past two years there has been a noticeable increase in silver use in this sector. Some industry participants believe silver use in jewelry, which was no more than 128,600

ounces as recently as 1990, may have reached 964,500 ounces last year.

Silver chemicals used in the manufacture of mirrors is another major use in Taiwan, accounting for around 482,300 ounces in 1992.

There is only one company involved in the manufacture of silver photochemicals. That company uses around 77,160 ounces per year of silver in its plants, which produce low-quality photographic products used in blueprints and other industrial papers.

The only batteries using silver manufactured in Taiwan are produced by the military for military operations. There are no producers of silver batteries for consumer or commercial applications, a sector of the Taiwanese market dominated by Japanese battery manufacturers.

Taiwan Fabrication Demand

Thousand Troy Ounces

	1990	1991	1992
Photography	70.7	77.2	80.4
Electronics	257.2	321.5	385.8
Electroplating			
for electronics & decorative	1,607.5	1,929.0	2,250.5
Chemicals	257.2	482.3	643.0
Mirrors	321.5	385.8	482.3
Brazing Alloys & Solders	546.6	643.0	707.3
Jewelry	128.6	643.0	964.5
Total	3,189.3	4,481.8	5,513.8
<i>% Change Year Ago</i>	—	40.5	23.0

Notes: Totals may not equal the sums of the categories due to rounding.

Sources: Trade sources, CPM Group

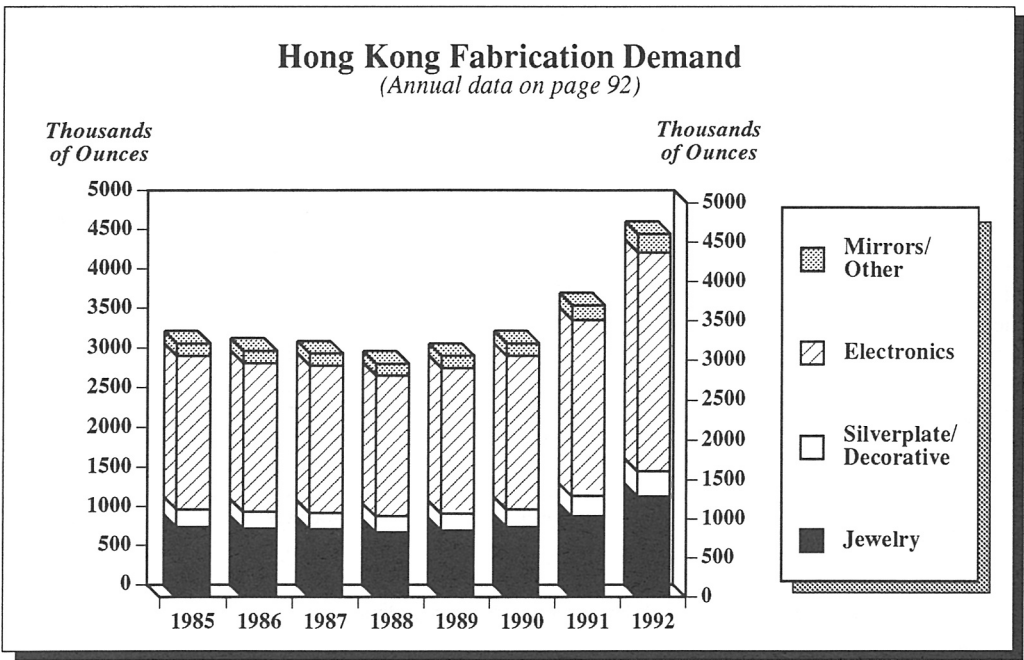
Hong Kong

The Hong Kong silver market is two-pronged, serving as a transshipment point and as a site of actual fabrication demand. In 1992, net official imports of unwrought silver (excluding transshipments) came to 4.0 million ounces. Unofficial net imports added around 15% to that figure, or 600,000 ounces, for a total 4.6 million ounces. All of this silver was used in the fabrication of various silver-bearing products, with little of this metal remaining in Hong Kong. About 90% of the silver fabricated into product is re-exported, to other Asian markets, the United States, and Europe.

Meanwhile, another 4.6 million ounces of official and unofficial imports of unwrought silver is simply re-exported without any fabrication. Much of this sil-

ver is shipped to the People's Republic of China, which now is a large net importer of unwrought silver, although specific tonnages are unknown. The People's Republic of China also imports significant amounts of fabricated silver products, including sheet, paste, and chemicals.

Net silver use in Hong Kong rose more than 24% last year, from 3.7 million ounces in 1991. Demand has risen sharply from 1989, with increases in all sectors — electronics, jewelry, silverware, mirrors, and other applications. Total demand jumped 55% in the past four years, from 2.96 million ounces in 1988 to 4.6 million ounces last year. This surge in silver use was preceded by a three year span of slowly declining demand. Hong Kong fabricators reduced their consumption from 3.22 million ounces in 1985 to 2.96 million ounces in 1988, an 8% decline.



The largest market for silver in Hong Kong is the electronics sector. In 1992 nearly 2.8 million ounces went to this industry, up from 2.2 million ounces the previous year. Most of that silver is used in batteries. Electronics demand represents 60% of total demand. This historically has been the case. Electronics use has risen 990,000 ounces since 1988, when it totaled 1.77 million ounces.

Jewelry use also has grown strongly — by 55.5% during this four-year period, expanding to 1.29 million ounces in 1992 from 828,200 ounces in 1988. Much of the jewelry is assembled across the border in China. This really may be considered to be Hong Kong demand, however, as the plants are owned and operated by Hong Kong interests, and much of the jewelry produced is re-exported to Hong Kong for shipment to the United States, Europe and to other Asian countries. A small amount is consumed locally.

There are more than 1,000 small jewelers in Hong Kong, some using as much as 32,000 ounces of silver annually. About 35% of the silver used by these jewelers is absorbed by “craftsmen” jewelry fabricators, who produce low-end chain and rings. Upwards of 500,000 ounces annually goes into these low-end items.

Just 5% - 6% of jewelry manufactured in Hong Kong stays in the local market. Most is exported to mainland China, the United States, other Asian countries, and Europe.

The silverware industry also is a significant factor in the Hong Kong silver market.

Manufacturers of these souvenir and decorative items, such as cigarettes cases, lighters, figurines, and a small amount of low-end tabletop, are using 55% more silver now than they did in 1988: 322,100 ounces in 1992 compared with 207,100 ounces four years earlier.

The growth in mirrors and other applications has been keeping pace with that of Hong Kong's larger silver users. Silver demand in this area rose to 230,000 ounces in 1992 from 147,900 ounces in 1987. As with jewelry, there is some mirror production just across the border in China. These plants are controlled by Hong Kong companies, and the silver used in manufacturing is purchased by their Hong Kong owners and operators.

Investment demand for silver in Hong Kong declined sharply starting in the mid-1980s. Several bullion and commercial banks have resumed marketing physical bullion, mainly small bars, over the past 12 months or so, but have found little interest among investors. Silver certificates also continue to be offered, but there is little demand at present.

Po Sang Bank, one of the major silver traders in Hong Kong, has produced the Great Wall silver bar since 1982. The bars, 99.9% silver and 12 ounces each, initially were sold mainly to investors. Now almost all the bars are sold to jewelers, who melt the bars down for castings. Sales of silver bullion bars to Hong Kong investors now amount to less than 25,000 ounces annually.

Hong Kong Fabrication Demand

Thousand Troy Ounces

	1985	1986	1987	1988
Jewelry	900.2	873.2	864.2	828.2
Silverplate/decorative	225.1	218.3	216.1	207.1
Electronics	1,929.0	1,871.2	1,851.9	1,774.7
Mirrors/other	160.8	155.9	154.3	147.9
Total	3,215.1	3,118.6	3,086.5	2,957.9
<i>% Change Year Ago</i>	—	-3.0	-1.0	-4.2
	1989	1990	1991	1992
Jewelry	855.2	900.2	1,035.3	1,288.2
Silverplate/decorative	213.8	225.1	258.8	322.1
Electronics	1,832.6	1,929.0	2,218.4	2,760.5
Mirrors/other	152.7	160.8	184.9	230.0
Total	3,054.3	3,215.1	3,697.3	4,600.8
<i>% Change Year Ago</i>	3.3	5.3	15.0	24.4

Notes: Totals may not equal the sums of the categories due to rounding.

Sources: *Hong Kong trade sources, CPM Group*

APPENDIX**Prices**

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PRICES

Silver prices traded between \$3.51 and \$4.32 in 1992 and the first quarter of 1993. At these levels, silver was at its lowest price since 1973 in nominal terms and since the early 1960s in real terms.

Silver price volatility has fallen off significantly since late 1991. This has limited investment demand, since some investors are attracted to volatile markets and the potential profits they represent.

Volatility is measured here as the range between high and low prices as a percentage of the low. Volatility can be calculated in other ways, such as standard deviation. Traders sometimes rely on implied volatility, using options pricing models. Silver price volatility declined from 9.2% in the third quarter of 1991 to 3.7% in the second quarter of 1992; volatility was 4.4% through March 19 of 1993. For 1992 as a whole, the range between the high and low prices was 69.3 cents. In 1980, the range between the high and low prices was \$30.10.

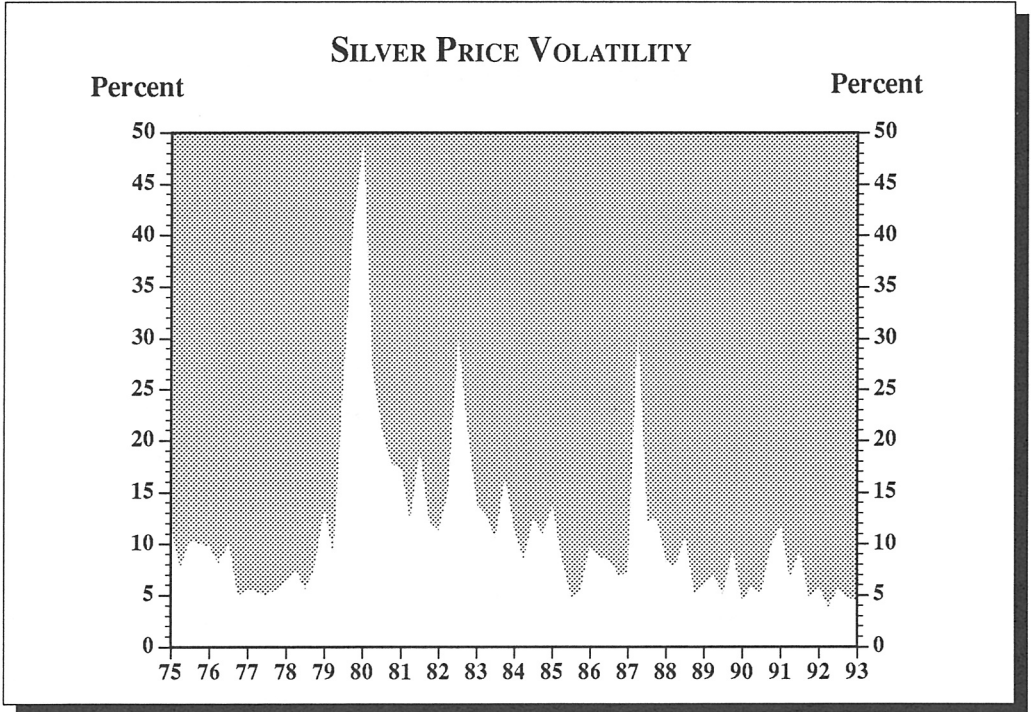
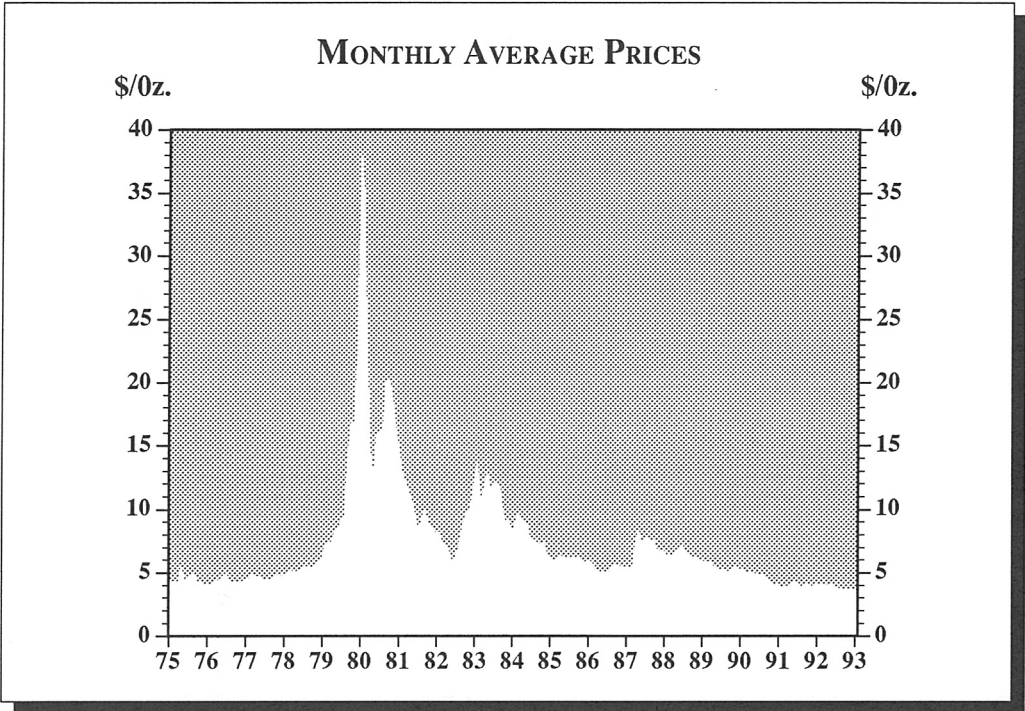
Silver price movements have been related to gold price fluctuations over the years. This ratio has been highly variable whenever gold and silver prices have been free of government control or intervention. The relative values are not constant, but change in response to varying supply and demand fundamentals. There have been wide variations in the ratio. In the early 1940s, the ratio reached 100:1; in 1980, the ratio fell to 18:1 for a time. Since 1990, the

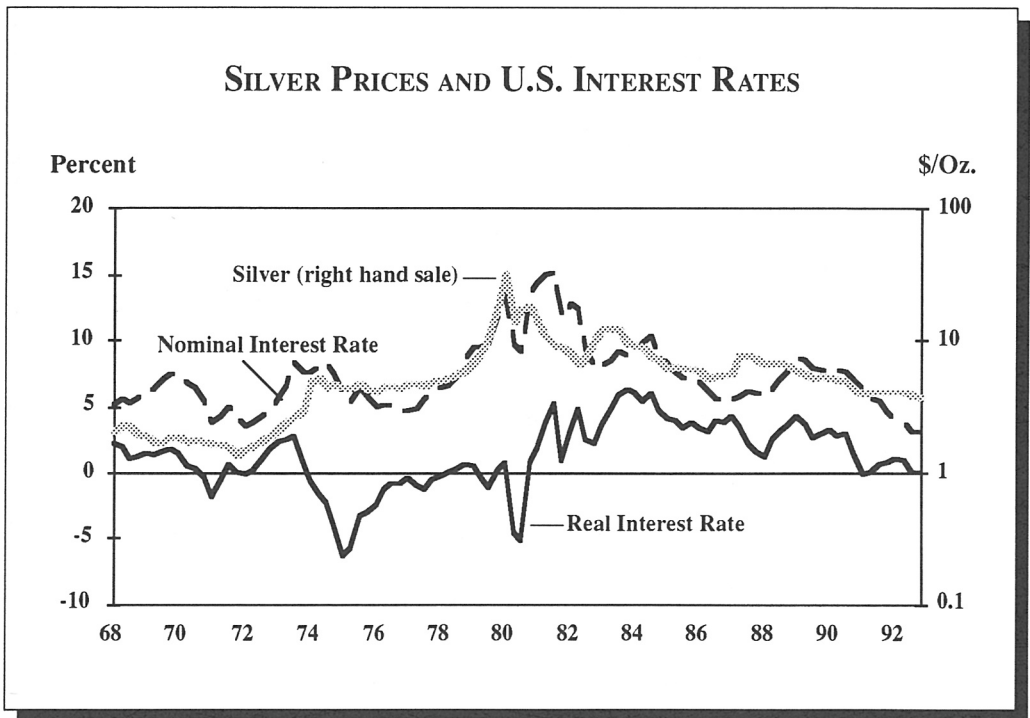
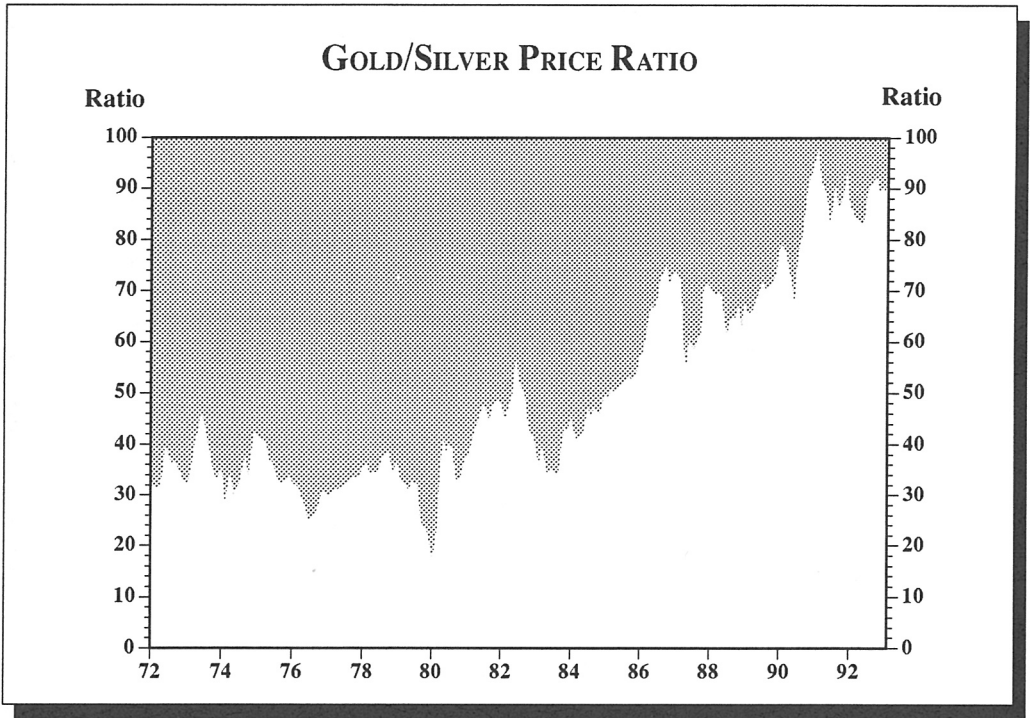
ratio between gold and silver prices has shifted between 66:1 and 98:1; as of February 1993 it was at 91:1.

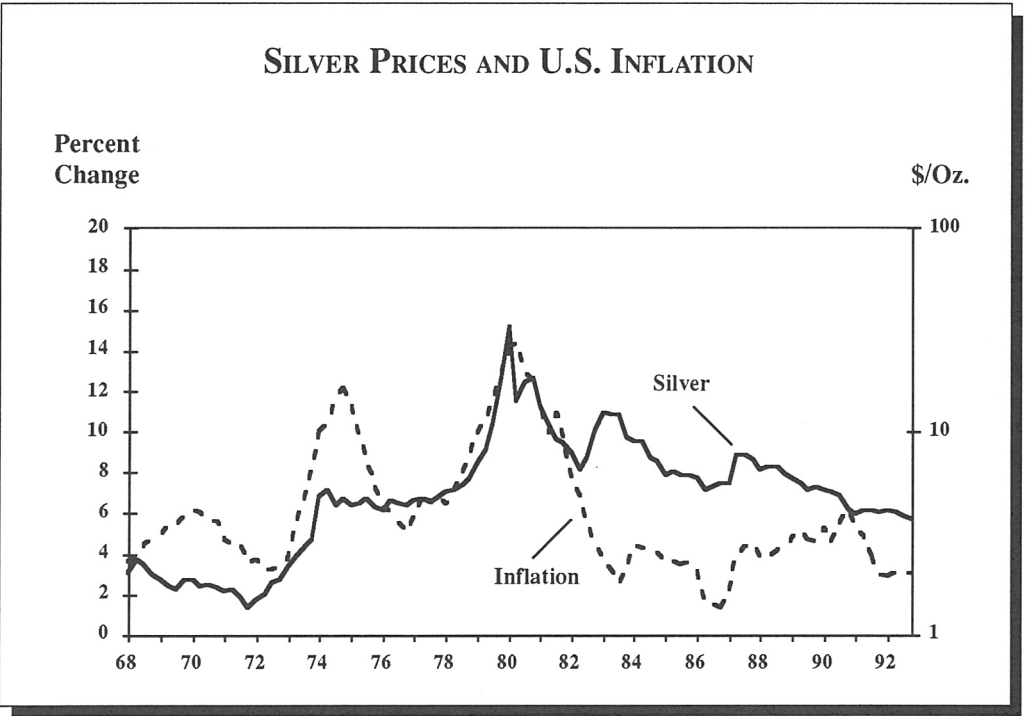
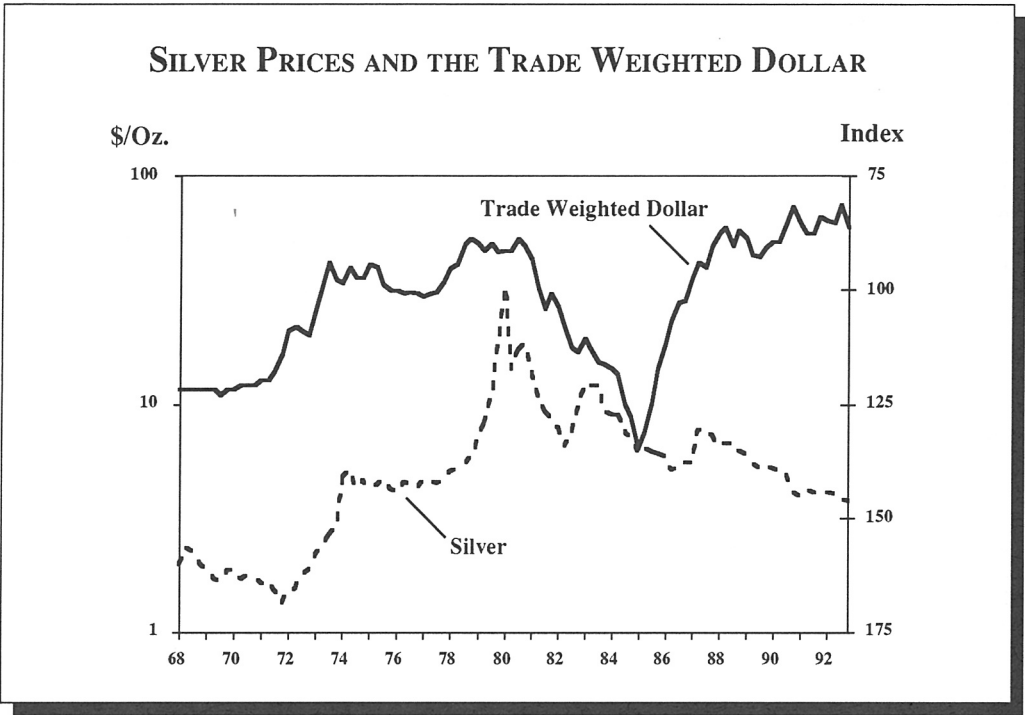
There is little statistical correlation between silver prices and U.S. interest rates. Instead, it has been the thrust of U.S. monetary policy, rather than nominal rates, that has been most closely connected to silver price movements. The real, inflation-adjusted rate often has been closely associated, inversely, with silver prices. The nominal rate moved in tandem with silver prior to 1980, and inversely thereafter, reflecting the shift.

There also is no statistically measurable bond between movements in the U.S. dollar and silver, although some investors view silver, like gold, as a hedge against currencies, including the dollar.

Silver also serves as a hedge against inflation. Inflation rates of 5% to 15% at times in the 1970s stimulated large-scale inflation-hedge buying by investors. Since inflation, measured here as the U.S. Consumer Price Index, has been consistently below 5% since 1985, silver has not been used much as an inflation hedge in recent years.







Monthly Average Silver Prices

Comex Spot Settlement Price

	1977	1978	1979	1980	1981	1982
January	\$4.41	\$4.94	\$6.25	\$38.28	\$14.78	\$8.03
February	4.54	4.94	7.43	35.28	12.97	8.29
March	4.85	5.28	7.42	23.95	12.35	7.23
April	4.78	5.11	7.49	14.45	11.48	7.28
May	4.69	5.13	8.40	12.69	10.90	6.66
June	4.44	5.31	8.54	15.82	9.96	5.61
July	4.50	5.35	9.18	16.15	8.63	6.20
August	4.45	5.49	9.40	16.00	8.99	7.15
September	4.54	5.57	14.02	20.20	10.05	8.74
October	4.77	5.19	16.85	20.18	9.27	9.51
November	4.83	5.88	16.59	18.61	8.54	9.82
December	4.71	5.93	22.81	16.28	8.47	10.62
Annual	\$4.63	\$5.34	\$11.20	\$20.65	\$10.53	\$7.93
<i>% Change Year Ago</i>		15.5	109.6	84.4	-49.0	-24.7
	1983	1984	1985	1986	1987	1988
January	\$12.51	\$8.20	\$6.11	\$6.07	\$5.54	\$6.73
February	13.83	9.17	6.07	5.86	5.49	6.33
March	10.66	9.69	6.03	5.64	5.43	6.43
April	11.76	9.24	6.46	5.22	7.36	6.46
May	13.02	8.97	6.27	5.11	8.44	6.55
June	11.73	8.73	6.18	5.15	7.43	7.03
July	12.13	7.41	6.11	5.05	7.72	7.12
August	12.14	7.65	6.26	5.21	7.81	6.70
September	11.89	7.28	6.20	5.69	7.61	6.35
October	9.85	7.30	6.20	5.67	7.56	6.29
November	8.88	7.50	6.13	5.57	6.71	6.29
December	9.14	6.65	5.88	5.37	6.79	6.13
Annual	\$11.46	\$8.15	\$6.15	\$5.47	\$6.99	\$6.53
<i>% Change Year Ago</i>	44.6	-28.9	-24.6	-11.1	27.8	-6.5
	1989	1990	1991	1992	1993	
January	\$5.98	\$5.24	\$4.03	\$4.13	\$3.67	
February	5.87	5.27	3.72	4.13	3.64	
March	5.94	5.06	3.96	4.11		
April	5.78	5.05	3.97	4.03		
May	5.44	5.08	4.04	4.07		
June	5.28	4.90	4.39	4.05		
July	5.23	4.85	4.29	3.95		
August	5.18	4.97	3.93	3.79		
September	5.14	4.78	4.04	3.76		
October	5.14	4.34	4.10	3.74		
November	5.49	4.16	4.05	3.76		
December	5.52	4.08	3.91	3.71		
Annual	\$5.50	\$4.82	\$4.03	\$3.93	\$3.66	
<i>% Change Year Ago</i>	-15.8	-12.4	-16.2	-2.8	-7.6	

Notes: Percent change for 1993 is percent change through February from same 1992 period.

Source: *New York Commodity Exchange, Metals Week*

Mine Production By Country
Thousand Troy Ounces

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Africa														
Algeria	100	100	110	110	120	120	120	120	120	120	120	100	100	100
Ghana	20	18	17	17	14	14	14	20	25	25	25	25	50	50
Morocco	3,283	3,154	2,120	2,640	2,850	2,409	2,733	1,566	4,300	7,273	8,300	12,100	12,000	7,500
Namibia	3,617	3,365	3,456	3,150	3,532	3,255	3,400	3,981	3,331	3,472	4,437	2,958	2,926	2,900
South Africa	3,238	7,458	7,569	6,943	6,513	6,997	6,721	7,143	7,201	5,760	5,720	5,700	5,500	5,500
Tunisia	231	233	85	117	90	85	26	30	30	30	30	30	25	25
Zaire	3,420	2,535	2,575	1,905	1,288	1,499	1,520	1,499	1,400	1,400	1,499	2,700	1,890	950
Zambia	914	764	715	887	933	794	625	842	962	942	890	633	547	465
Zimbabwe	978	948	858	919	938	892	800	843	817	895	774	682	623	561
Total	15,801	18,575	17,505	16,688	16,278	16,065	15,959	16,044	18,186	19,917	21,795	24,928	23,661	18,051
Asia														
Burma	340	430	450	526	558	575	569	443	400	378	321	230	230	250
India	370	366	556	466	508	933	822	1,135	1,221	1,318	1,286	868	900	1,109
Indonesia	793	700	828	1,032	1,047	1,122	1,175	1,371	1,531	1,986	2,012	1,700	2,000	2,300
Japan	8,932	8,195	9,279	9,042	9,877	10,403	10,914	11,307	9,032	8,102	5,008	4,819	5,488	5,500
Malaysia	433	437	473	522	481	470	522	452	497	641	641	410	500	550
Philippines	1,838	1,951	2,021	1,983	1,823	1,574	1,743	1,689	1,638	1,759	1,852	1,528	1,235	926
South Korea	2,823	2,293	3,147	3,523	3,366	3,759	3,990	2,584	2,823	1,571	2,762	1,700	2,250	2,250
Taiwan	84	96	216	505	344	364	366	405	373	268	268	210	250	260
Turkey	250	200	200	220	219	219	224	286	283	513	513	640	600	2,100
Total	15,863	14,668	17,170	17,819	18,223	19,419	20,325	19,672	17,798	16,536	14,663	12,105	13,453	15,245
Europe														
Finland	1,028	1,430	1,215	1,190	980	1,123	1,566	1,193	1,415	997	997	932	964	874
France	2,409	2,374	1,706	986	688	769	866	825	831	678	627	710	739	750
Germany	1,042	1,213	1,263	1,286	1,167	1,225	1,102	884	994	642	700	260	129	65
Greece	1,752	1,671	1,945	1,581	1,797	1,799	1,630	1,726	1,668	1,977	1,668	1,700	1,700	1,700
Greenland	763	771	720	758	607	335	425	385	402	458	470	300	300	0
Ireland	1,058	773	595	352	318	280	277	262	232	177	231	282	338	289
Italy	1,065	1,365	1,779	1,791	2,362	1,560	513	577	449	513	510	360	200	150
Portugal	35	29	23	23	32	29	108	175	120	120	120	620	650	700
Spain	3,168	5,711	6,186	3,789	5,938	5,000	6,405	5,562	6,880	7,298	7,088	7,400	7,500	7,500
Sweden	5,650	5,337	5,171	5,396	5,491	7,677	8,038	7,554	8,520	7,201	6,099	7,000	6,500	7,694
Yugoslavia	5,214	4,789	4,422	3,342	3,987	4,051	5,017	5,702	4,859	4,468	4,276	3,376	2,894	2,894
Total	23,184	25,463	25,025	20,494	23,367	23,848	25,947	24,845	26,370	24,529	22,786	22,940	21,914	22,616

Mine Production By Country, continued		1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Thousand Troy Ounces															
North & Central America															
Canada		36,874	34,390	36,311	42,234	38,692	42,001	38,485	34,980	38,118	44,100	41,310	44,374	40,554	36,277
Costa Rica		2	2	2	2	2	2	2	2	2	2	2	2	2	2
Dominican Republic		2,268	1,642	2,062	2,112	1,270	1,222	1,609	1,318	1,149	1,400	700	700	700	750
El Salvador		152	146	137	86	3	22	20	17	17	17	17	17	17	17
Guatemala		10	10	8	8	23	0	0	0	0	0	0	0	0	0
Honduras		2,186	1,721	1,665	2,050	2,587	2,698	2,765	1,747	741	796	796	1,000	1,000	1,200
Mexico		49,408	47,344	53,204	49,841	55,000	63,900	69,200	69,400	69,800	70,000	70,000	67,900	62,700	65,000
Nicaragua		388	163	82	76	63	50	52	26	29	23	23	40	50	55
United States		37,896	32,329	40,683	40,248	43,431	44,592	39,357	34,221	39,790	53,402	60,797	66,488	60,984	60,957
<i>Total</i>		<i>129,184</i>	<i>117,747</i>	<i>134,154</i>	<i>136,657</i>	<i>141,071</i>	<i>154,487</i>	<i>151,490</i>	<i>141,711</i>	<i>149,646</i>	<i>169,740</i>	<i>173,645</i>	<i>180,521</i>	<i>166,007</i>	<i>164,258</i>
Oceania															
Australia		26,749	24,981	23,920	29,161	33,212	31,250	34,916	32,890	35,912	35,815	37,295	37,800	38,000	40,123
Fiji		9	9	9	19	12	13	15	15	0	0	34	25	16	20
New Zealand		2	1	1	1	0	0	41	41	0	59	156	275	355	400
Papua New Guinea		1,434	1,187	1,365	1,394	1,531	1,426	1,487	1,802	2,004	2,100	1,966	2,600	3,215	3,530
<i>Total</i>		<i>28,194</i>	<i>26,178</i>	<i>25,295</i>	<i>30,575</i>	<i>34,755</i>	<i>32,689</i>	<i>36,459</i>	<i>34,748</i>	<i>37,916</i>	<i>37,974</i>	<i>39,451</i>	<i>40,700</i>	<i>41,586</i>	<i>44,073</i>
South America															
Argentina		2,209	2,357	2,518	2,684	2,502	1,983	2,170	2,135	1,899	1,608	1,547	2,200	2,200	1,500
Bolivia		5,742	6,099	6,394	5,472	6,024	4,559	3,614	3,057	4,565	7,234	7,718	8,900	9,400	10,500
Brazil		1,065	737	765	748	750	2,275	2,301	1,913	1,966	2,252	2,056	1,100	1,000	5,000
Chile		8,740	9,596	11,608	12,288	14,955	15,776	16,642	16,080	16,068	16,301	17,701	20,416	21,733	33,115
Colombia		99	146	134	137	134	128	155	187	167	211	220	210	200	267
Ecuador		70	70	32	9	3	3	2	2	2	2	2	0	0	130
Peru		41,900	44,815	42,553	54,379	55,565	53,257	54,854	59,924	63,576	47,657	56,830	55,548	56,882	48,000
<i>Total</i>		<i>59,825</i>	<i>63,820</i>	<i>64,004</i>	<i>75,717</i>	<i>79,933</i>	<i>77,981</i>	<i>79,738</i>	<i>83,298</i>	<i>88,243</i>	<i>75,265</i>	<i>86,074</i>	<i>88,374</i>	<i>91,415</i>	<i>98,512</i>
Subtotal		272,051	266,451	283,153	297,950	313,627	324,489	329,918	320,318	338,159	343,961	358,414	369,568	358,036	362,755
Transitional Economies															
Bulgaria		805	773	741	805	805	837	837	2,315	2,476	2,733	3,054	3,215	3,054	3,054
China		1,928	1,928	2,091	2,252	2,300	2,600	2,800	3,214	3,214	3,500	4,000	5,500	6,000	6,400
Czechoslovakia		1,126	1,126	1,126	1,062	964	1,029	1,030	1,062	1,100	1,126	1,100	600	580	550
East Germany		1,543	1,511	1,447	1,447	1,382	1,286	1,318	1,318	1,318	1,286	1,298	0	0	0
Hungary		34	34	31	30	30	25	25	25	25	25	25	25	24	24
North Korea		1,543	1,447	1,286	965	1,100	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Poland		22,569	24,628	20,577	21,058	21,800	23,900	26,717	26,652	26,717	34,176	34,000	26,750	28,903	28,936
Romania		965	901	805	805	773	805	805	741	642	691	671	386	386	386
Soviet Union		49,834	49,834	50,500	51,000	51,441	51,441	52,084	52,400	52,500	53,000	54,000	51,300	48,700	39,000
<i>Total</i>		<i>80,347</i>	<i>82,182</i>	<i>78,604</i>	<i>79,424</i>	<i>80,627</i>	<i>83,491</i>	<i>87,216</i>	<i>89,327</i>	<i>89,592</i>	<i>98,137</i>	<i>99,748</i>	<i>89,376</i>	<i>89,247</i>	<i>79,950</i>
WORLD TOTAL		352,398	348,633	361,757	377,374	394,254	407,980	417,134	409,645	427,751	442,098	458,162	458,944	447,283	442,705

Sources: U.S. Bureau of Mines; American Bureau of Metals Statistics; Statistics Canada; Chamber of Mines of South Africa; The Silver Institute; Central Intelligence Agency, other government and industry sources; CPM Group

Fabrication Demand by Country, 1950-1992

Million Troy Ounces

	EUROPE					Subtotal
	Germany	Italy	U.K.	France	Other Europe	
1950	7.6	-i-	12.4	1.3	-i-	21.3
1951	10.0	-i-	16.6	10.0	-i-	36.6
1952	10.4	-i-	9.1	10.5	-i-	30.0
1953	11.9	-i-	11.9	14.5	-i-	38.3
1954	24.2	-i-	12.6	15.0	-i-	51.8
1955	28.1	-i-	14.2	15.7	-i-	58.0
1956	33.1	-i-	13.8	15.9	-i-	62.8
1957	31.5	-i-	14.7	17.9	-i-	64.1
1958	31.1	-i-	14.8	14.1	-i-	60.0
1959	33.3	-i-	17.5	10.6	-i-	61.4
1960	40.2	-i-	16.5	25.2	-i-	81.9
1961	43.5	20.0	20.0	37.8	-i-	121.3
1962	41.8	22.0	20.0	27.2	-i-	111.0
1963	40.5	25.0	20.0	26.1	-i-	111.6
1964	46.3	25.0	23.0	25.5	-i-	119.8
1965	57.3	25.0	25.0	21.2	-i-	128.5
1966	51.1	30.0	25.0	23.4	-i-	129.5
1967	51.3	28.2	24.0	24.3	-i-	127.8
1968	54.2	22.5	23.0	20.9	-i-	120.6
1969	52.9	29.0	24.5	20.0	-i-	126.4
1970	51.7	32.0	25.0	19.0	-i-	127.7
1971	79.1	30.5	25.0	16.0	-i-	150.6
1972	82.6	32.0	27.0	16.8	-i-	158.4
1973	67.0	33.5	31.5	22.6	-i-	154.6
1974	62.6	30.0	33.0	24.6	-i-	150.2
1975	44.3	28.9	28.0	22.8	-i-	124.0
1976	54.7	38.5	27.6	38.0	-i-	158.8
1977	52.7	36.3	29.4	39.7	-i-	158.1
1978	45.6	31.0	29.0	33.6	-i-	139.2
1979	43.5	33.3	27.6	34.7	37.2	176.3
1980	31.9	21.8	19.5	19.9	30.2	123.3
1981	29.8	21.5	18.4	19.0	31.2	119.9
1982	33.0	20.8	18.1	18.5	32.4	122.8
1983	30.3	15.0	17.7	18.7	30.3	112.0
1984	32.2	19.4	19.2	21.0	31.5	123.3
1985	34.6	24.0	19.1	19.1	31.6	128.4
1986	36.8	33.5	19.1	19.2	39.0	147.6
1987	42.3	38.6	21.1	19.8	36.1	157.9
1988	47.8	43.0	22.7	23.4	33.2	170.1
1989	50.5	45.7	24.5	24.3	37.5	182.5
1990	51.3	47.9	24.4	24.6	39.6	187.8
1991	58.4	53.0	21.7	23.7	40.3	197.1
1992	55.3	55.1	21.7	23.5	40.1	195.7

Notes: Includes coinage where available, 1960 onward. Coinage prior to 1960 is included in **Other**. Small amounts of Italian and U.K. coinage also are included in **Other**. Prior to 1965 U.S. silver coinage was circulating coinage. Excludes transitional economy industrial use; transitional economy coinage included from 1990 onward. Totals may not equal the sums of countries due to rounding.

U.S.	Japan	India	Canada	Mexico	Other	Total	
120.0	-i-	-i-	5.2	3.8	52.6	202.9	1950
110.0	3.5	-i-	4.4	-i-	100.6	255.1	1951
95.0	3.5	-i-	3.8	-i-	124.1	256.4	1952
105.0	5.6	4.0	4.7	-i-	101.5	259.1	1953
85.0	5.8	3.0	3.9	-i-	94.7	244.2	1954
100.0	6.2	3.0	4.6	-i-	73.6	245.4	1955
100.0	7.9	17.5	3.8	6.1	76.6	274.7	1956
95.0	8.8	15.0	5.8	6.1	104.2	299.0	1957
85.0	8.2	3.3	4.6	6.9	104.5	272.5	1958
103.0	13.6	2.0	4.5	8.5	109.4	302.4	1959
56.0	21.6	1.5	11.8	6.8	162.1	341.7	1960
161.5	19.1	1.5	8.5	5.3	88.4	405.6	1961
188.4	19.6	1.5	14.2	5.2	63.2	403.1	1962
222.0	20.0	2.5	16.2	5.0	68.0	445.3	1963
326.0	20.0	12.0	17.8	6.4	83.3	585.3	1964
457.3	25.8	16.0	30.1	7.4	78.5	743.6	1965
237.3	31.5	16.0	21.3	6.1	104.9	546.6	1966
214.8	33.2	15.0	14.6	7.9	93.9	507.2	1967
182.1	35.0	16.0	13.6	7.9	88.0	463.2	1968
161.1	41.5	16.0	5.7	6.9	61.4	419.0	1969
129.1	46.0	16.0	6.0	8.5	66.1	399.4	1970
131.6	46.5	16.0	7.0	8.0	57.6	417.3	1971
154.0	54.3	13.0	8.4	11.0	70.4	469.5	1972
197.3	69.0	13.0	17.0	16.5	83.6	551.0	1973
177.0	57.7	14.0	19.3	10.2	73.2	501.6	1974
160.4	46.4	13.0	20.7	8.8	67.8	441.1	1975
171.9	60.8	18.0	17.7	10.2	77.3	514.7	1976
153.7	63.2	17.6	9.6	12.8	79.4	494.4	1977
160.2	64.9	21.0	10.6	15.7	80.3	491.9	1978
157.5	68.8	22.5	8.1	13.6	32.4	479.2	1979
124.8	61.5	22.5	8.9	11.0	27.3	379.3	1980
116.9	59.6	26.5	8.8	5.0	28.2	364.9	1981
120.6	63.2	23.0	9.3	5.7	28.8	373.4	1982
118.4	72.1	22.5	9.3	3.5	28.8	366.7	1983
116.8	78.8	20.9	9.3	8.0	33.3	390.4	1984
119.0	72.6	21.0	9.4	11.5	32.7	401.4	1985
129.2	85.0	19.3	10.9	9.7	35.1	436.9	1986
127.5	92.2	20.1	11.6	9.2	42.5	461.0	1987
119.9	103.9	22.5	12.1	9.1	40.9	478.5	1988
126.8	102.2	27.0	15.3	8.8	41.2	504.3	1989
134.4	117.7	41.8	14.2	8.7	41.7	546.5	1990
127.8	111.1	44.5	13.9	13.2	71.2	578.8	1991
127.0	102.6	57.8	13.9	21.5	71.8	590.3	1992

i — included in **Other**.

Sources: CPM Group, industry sources

Reported and Inferred Silver Holdings

Million Troy Ounces

	REPORTED STOCK LEVELS				YEAR-TO-YEAR CHANGES		
	Gov't.	Market Exchange	Dealer	Total	In Market Stocks	In Inferred Stocks	Total
1970	357.7	135.0	82.2	574.9	NA	NA	NA
1971	311.9	135.7	57.1	504.7	-24.4	-9.6	-34.0
1972	333.6	107.9	51.9	493.4	-33.0	-61.6	-94.6
1973	277.2	108.0	38.4	423.6	-13.4	-114.6	-128.0
1974	319.2	99.5	49.3	468.0	2.4	-53.4	-51.0
1975	250.8	142.0	34.6	427.4	27.8	-31.9	-4.1
1976	257.0	144.3	30.6	431.9	-1.7	-16.1	-17.8
1977	319.0	149.8	35.6	504.4	10.5	-59.6	-49.1
1978	318.8	141.1	29.0	488.9	-15.3	-41.8	-57.1
1979	314.6	146.2	16.1	476.9	-7.8	33.6	25.8
1980	326.5	148.1	17.0	491.6	2.8	204.4	207.2
1981	322.5	128.7	20.7	471.9	-15.7	130.0	114.3
1982	321.5	141.4	20.7	483.6	12.7	67.9	80.6
1983	302.5	196.6	17.7	516.8	52.2	110.2	162.4
1984	286.5	189.2	17.1	492.8	-8.0	93.7	85.7
1985	273.5	227.0	17.1	517.6	37.8	43.6	81.4
1986	259.5	189.2	16.3	465.0	-38.6	47.0	8.4
1987	239.5	193.3	15.0	447.8	2.8	38.4	41.2
1988	231.6	209.4	15.2	456.2	16.3	7.2	23.5
1989	220.6	261.1	14.6	496.3	51.1	-43.8	7.3
1990	209.6	291.9	17.1	518.6	33.3	-75.2	-41.9
1991	198.1	294.9	18.7	511.1	4.6	-90.4	-85.8
1992	190.0	297.1	22.0	509.1	5.3	-93.9	-88.6

Notes: Changes in total stocks represents the change in the supply/demand balance of new metal. Market stocks include reported U.S. dealer inventories and exchange registered stocks. New York Commodity Exchange inventories also include eligible stocks. Changes in inferred stocks is the change in the supply and demand balance of new metal, adjusted for changes in reported inventories. End of year data.

Sources: *U.S. Bureau of the Mint; U.S. Bureau of Mines; New York Commodity Exchange; London Metal Exchange; Chicago Board of Trade; Tokyo Commodity Exchange; CPM Group*

Silver Futures Exchange Activity

Million Troy Ounces

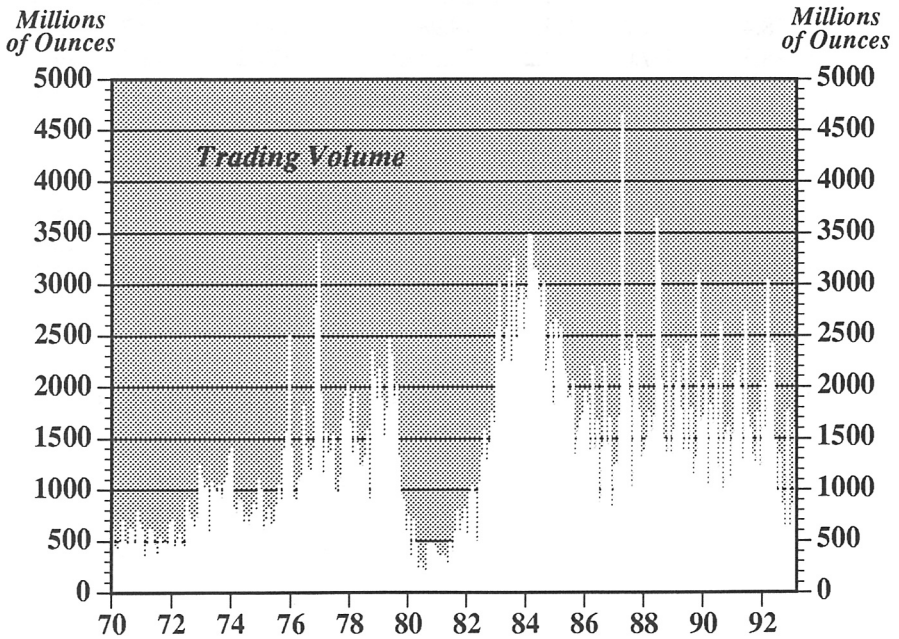
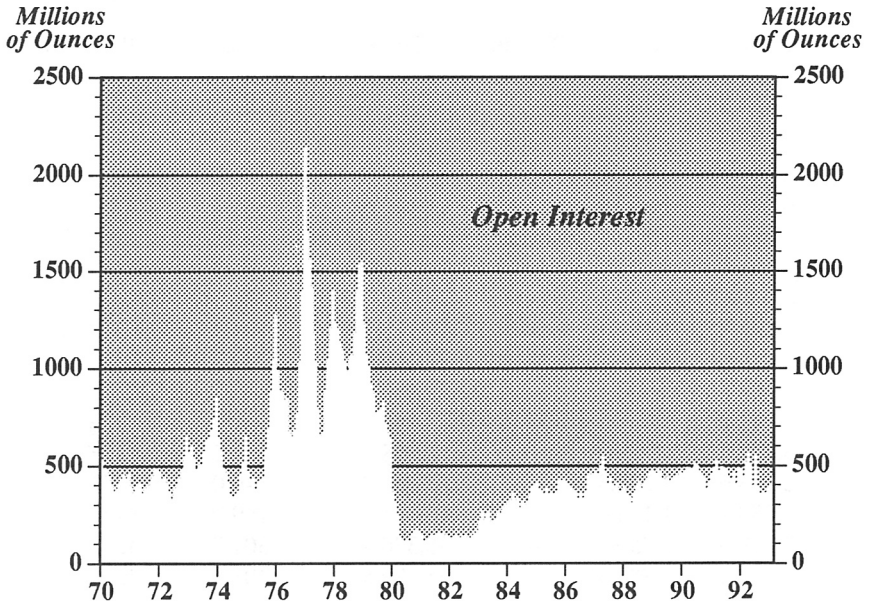
	TRADING VOLUME				OPEN INTEREST			
	Comex	CBT	Tocom	Total	Comex	CBT	Tocom	Total
1970	3,468.5	1,813.1	—	5,281.6	230.9	191.2	—	422.1
1971	3,081.2	2,520.5	—	5,601.7	245.5	366.7	—	612.2
1972	4,074.5	3,770.2	—	7,844.7	327.8	544.7	—	872.5
1973	6,189.3	8,153.0	—	14,342.3	428.0	981.6	—	1,409.6
1974	6,829.6	7,314.0	—	14,143.6	658.4	623.5	—	1,281.9
1975	14,511.6	9,763.5	—	24,275.1	1,276.4	864.5	—	2,140.9
1976	18,709.5	10,055.2	—	28,764.7	2,138.7	680.3	—	2,819.0
1977	17,700.2	11,285.3	—	28,985.5	1,404.9	1,409.8	—	2,814.7
1978	19,110.4	13,289.2	—	32,399.6	1,549.0	1,343.9	—	2,892.9
1979	20,403.1	13,602.9	—	34,006.0	636.8	468.7	—	1,105.5
1980	5,293.7	1,705.2	—	6,998.9	166.2	143.1	—	309.3
1981	6,203.6	1,257.3	—	7,460.9	140.0	56.3	—	196.3
1982	14,188.1	1,163.6	—	15,351.7	169.0	34.8	—	203.8
1983	32,619.9	2,750.5	—	35,370.4	301.7	32.4	—	334.1
1984	33,712.5	1,887.3	—	35,599.8	401.5	26.8	—	428.3
1985	24,106.0	1,034.8	591.1	25,731.9	430.7	18.5	17.6	466.8
1986	19,248.4	511.2	227.1	19,986.7	449.1	12.7	12.3	474.1
1987	25,278.3	597.0	473.2	26,348.5	371.2	11.2	24.8	407.2
1988	23,323.3	502.4	740.2	24,565.8	470.0	13.5	47.2	530.7
1989	21,833.1	266.7	420.8	22,520.6	474.2	9.7	80.2	564.1
1990	19,568.5	192.0	486.4	20,246.9	421.7	10.9	49.8	482.3
1991	20,773.5	117.5	1,020.1	21,911.1	488.8	6.1	38.0	532.9
1992	18,941.6	55.1	223.6	19,220.3	381.3	6.1	15.7	403.2
1993 YTD	2,415.6	3.2	39.5	2,458.2	447.2	6.6	11.4	465.1

Notes: Trading volume is the total for the year. Open interest is end-December; 1993 through February.

Sources: New York Commodity Exchange, Chicago Board of Trade, Tokyo Commodity Exchange

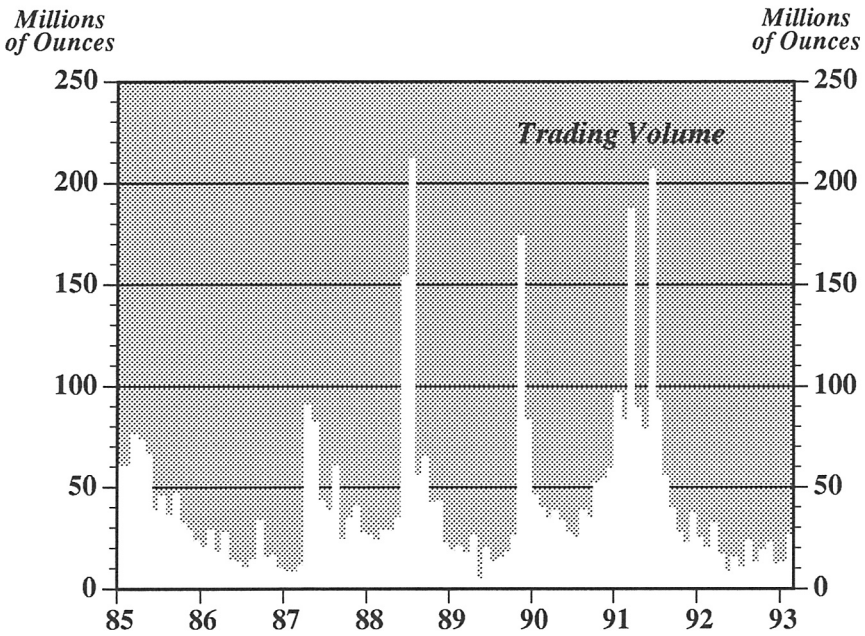
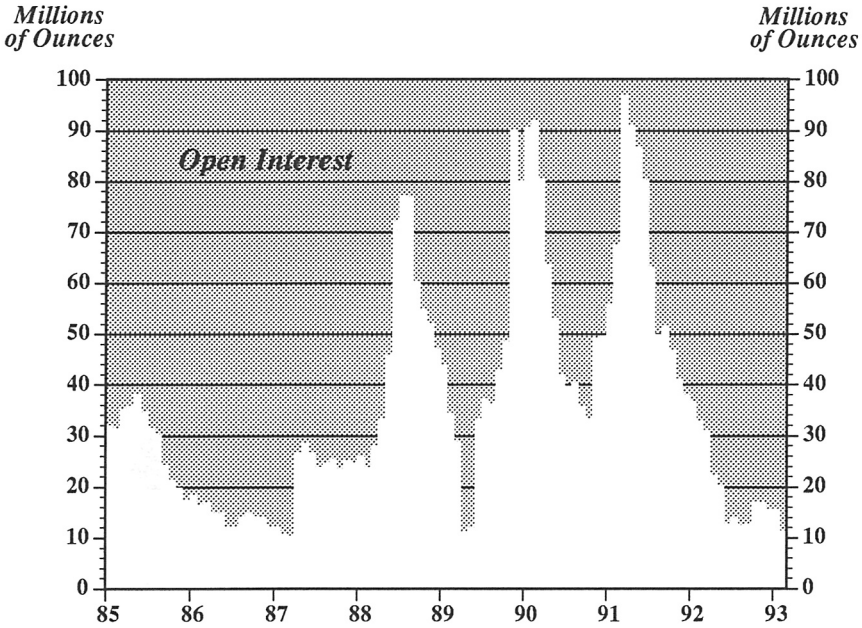
New York Commodity Exchange Activity

Through February 1993



Tokyo Commodity Exchange Activity

Through February 1993



**WORLD MINE PRODUCTION OF SILVER
IN 1992**

**WITH PROJECTIONS FOR
1993
1994
1995
1996**

THE SILVER INSTITUTE

A WORLDWIDE ASSOCIATION OF
MINERS, REFINERS, FABRICATORS AND MANUFACTURERS

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THE SILVER INSTITUTE

WORLD MINE PRODUCTION OF SILVER 1992 - 1996

This report presents the mine production of silver in all of the 60 countries of the world which are mining or expect to mine silver during the 1992 to 1996 period. Countries are separated into Market Economies and Transitional Economies, which are now participating more in the international silver markets.

The Market Economies are divided into three sections: those which produced more than twenty million troy ounces of silver in 1992; those which produced one million to twenty million troy ounces; and those which produced less than one million troy ounces. In all sections, figures for the countries are arranged in the order of size of mine production of silver in 1992. For each country, actual production is given, as well as projected production for each of the years 1993, 1994, 1995 and 1996. Amounts are shown in millions of troy ounces for each country and group of countries, with metric ton (1,000 kilograms) equivalents for each group of countries.

The figures presented here refer to mine production of silver on an "accountable" basis, indicating the amount of silver which is credited to the mining enterprise. This study was made with the participation of over 100 mining entities, who supplied The Silver Institute with their reports and projections.

The projections are the totals of many individual companies' plans for their mine production of silver in each of the four ensuing years. Increases and decreases from these plans in individual mines and countries often balance each other. However, there is the fact that earthquakes, floods, accidents, strikes, or unexpected declines in market prices will cause the actual production to be less than the projections.

The world mine production of silver in 1992 was **nearly the same** as projected one year ago; **8% less** than projected two years ago; and **12% less** than projected three years ago.

An additional analysis shows the production and the percent of world total for each of the ten largest producing countries, indicating the changes in their shares of production over the years 1992 to 1996.

Appreciation is expressed for the extraordinary cooperation of the mining and related enterprises who provided the information and projections used in this report.

April 1993

MINE PRODUCTION OF SILVER

On Accountable Basis
In Millions of Troy Ounces

MARKET ECONOMIES

Countries Producing More Than 20 Million Troy Ounces in 1992:	Actual 1992	Projected			
		1993	1994	1995	1996
Mexico	65.0	70.5	76.9	79.4	76.8
United States	57.0	54.1	58.9	58.1	59.1
Peru	48.0	47.4	48.9	49.7	50.2
Australia	40.1	38.4	38.7	39.7	39.7
Canada	36.9	33.0	35.4	37.0	37.6
Chile	33.5	35.3	33.8	36.2	45.4
Subtotal	280.5	278.7	292.6	300.1	308.8
<i>Equivalent Metric Tons</i>	8,718.5	8,668.7	9,101.1	9,334.4	9,605.0
Change from Previous Year	1%	-1%	5%	3%	3%

Countries Producing 1 to 20 Million Troy Ounces in 1992:	Actual 1992	Projected			
		1993	1994	1995	1997
Bolivia	10.5	16.9	19.1	19.1	19.1
Sweden	8.1	7.4	6.4	7.0	7.2
Morocco	7.5	7.5	7.5	7.5	7.5
Spain	7.5	7.3	7.2	6.1	5.2
South Africa	5.5	5.5	5.5	5.5	5.5
Japan	5.5	5.5	5.5	5.5	5.5
Brazil	5.0	5.1	5.1	5.1	5.1
Papua New Guinea	3.5	3.4	3.4	3.4	3.4
Namibia	2.9	2.9	2.9	2.9	2.9
Yugoslavia	2.9	2.9	2.9	2.9	2.9
Indonesia	2.3	2.0	2.5	4.2	4.9
Turkey	2.1	2.1	2.1	2.1	2.1
Greece	1.7	1.7	1.7	1.7	1.7
Argentina	1.5	1.6	1.6	1.6	1.6
Honduras	1.2	1.0	1.0	1.0	1.6
India	1.1	1.1	1.1	1.1	1.1
German Federal Republic	1.1	0.4	0.4	0.4	0.4
Iran	1.0	1.0	1.0	1.0	1.0
Subtotal	70.9	75.3	76.9	78.1	78.7
<i>Equivalent Metric Tons</i>	2,205.3	2,342.1	2,391.9	2,429.2	2,447.9
Change from Previous Year	12%	6%	2%	2%	1%

World Mine Silver Survey 1992 - 1996

The Silver Institute

Countries Producing Less Than 1 Million Troy Ounces in 1992:	Actual	Projected			
	1992	1993	1994	1995	1996
Zaire	.95	.95	.95	.95	.95
Philippines	.93	.98	1.00	1.10	1.20
Finland	.87	.87	.87	.87	.87
Dominican Republic	.75	1.10	1.40	1.40	1.30
France	.75	.75	.75	.75	.75
Portugal	.70	.70	.70	.70	.70
Norway	.68	.68	.64	.64	.64
South Korea	.66	.66	.66	.66	.66
Czech and Slovakia Republics (former Czechoslovakia)	.60	.60	.60	.60	.60
Zimbabwe	.56	.56	.56	.56	.56
Malaysia	.55	.55	.55	.55	.55
Zambia	.47	.47	.47	.47	.47
Thailand	.40	.40	.40	.40	.40
New Zeland	.40	.45	.43	.41	.42
Iceland	.29	.29	.29	.29	.29
Colombia	.27	.26	.26	.26	.26
Taiwan	.26	.26	.26	.26	.26
Myanmar (Burma)	.25	.25	.25	.25	.25
Oman	.25	.25	.25	.25	.25
Italy	.15	.15	.15	.15	.15
Ecuador	.13	.42	.55	.60	.60
Algeria	.10	.10	.10	.10	.10
Saudi Arabia	.09	.09	.09	.09	.09
Nicaragua	.06	.06	.06	.06	.06
Ghana	.05	.05	.05	.05	.05
Tunisia	.03	.03	.03	.03	.03
Fiji	.02	.02	.02	.02	.02
El Salvador	.02	.02	.02	.02	.02
Hungary	.02	.02	.02	.02	.02
Subtotal	11.26	11.99	12.38	12.51	12.52
Equivalent Metric Tons	50.23	372.94	385.07	389.11	389.42
Change from Previous Year	47%	6%	3%	1%	0%
MARKET ECONOMIES					
TOTAL	362.7	366.0	381.9	390.7	400.0
Equivalent Metric Tons	11,280.2	11,383.8	11,878.1	12,152.7	12,442.3
Change from Previous Year	4%	1%	4%	2%	2%
TRANSITIONAL ECONOMIES (Estimated)					
C.I.S.	39.0	39.0	39.0	39.0	39.0
Poland	28.9	28.9	28.9	28.9	28.9
China People's Republic	6.4	6.4	6.4	6.4	6.4
Bulgaria	3.1	3.1	3.1	3.1	3.1
North Korea	1.6	1.6	1.6	1.6	1.6
Romania	.4	.4	.4	.4	.4
TOTAL	79.4	79.4	79.4	79.4	79.4
Equivalent Metric Tons	2,649.7	2,649.7	2,649.7	2,649.7	2,649.7
WORLD TOTAL					
TOTAL	442.1	445.4	461.3	470.1	479.4
Equivalent Metric Tons	13,749.9	13,853.5	14,347.7	14,622.4	14,912.0
Change from Previous Year	2%	1%	4%	2%	2%

ADDITIONAL ANALYSIS	Actual 1992	Projected			
		1993	1994	1995	1996
Mexico					
Million Troy Ounces	65.0	70.5	76.9	79.4	76.8
<i>Percent of World Total</i>	14.7	15.8%	16.7%	16.9%	16.0%
United States					
Million Troy Ounces	57.0	54.1	58.9	58.1	59.1
<i>Percent of World Total</i>	12.9%	12.1%	12.8%	12.4%	12.3%
Peru					
Million Troy Ounces	48.0	47.4	48.9	49.7	50.2
<i>Percent of World Total</i>	10.9%	10.6%	10.6%	10.6%	10.5%
Australia					
Million Troy Ounces	40.1	38.4	38.7	39.7	39.7
<i>Percent of World Total</i>	9.1%	8.6%	8.4%	8.4%	8.3%
C.I.S.					
Million Troy Ounces	39.0	39.0	39.0	39.0	39.0
<i>Percent of World Total</i>	8.8%	8.8%	8.5%	8.3%	8.1%
Canada					
Million Troy Ounces	36.9	33.0	35.4	37.0	37.6
<i>Percent of World Total</i>	8.3%	7.4%	7.7%	7.9%	7.8%
Chile					
Million Troy Ounces	33.5	35.3	33.8	36.2	45.4
<i>Percent of World Total</i>	7.6%	7.9%	7.3%	7.7%	9.5%
Poland					
Million Troy Ounces	28.9	28.9	28.9	28.9	28.9
<i>Percent of World Total</i>	6.5%	6.5%	6.3%	6.1%	6.0%
Bolivia					
Million Troy Ounces	10.5	16.9	19.1	19.1	19.1
<i>Percent of World Total</i>	2.4%	3.8%	4.1%	4.1%	4.0%
Sweden					
Million Troy Ounces	8.1	7.4	6.4	7.0	7.2
<i>Percent of World Total</i>	1.8%	1.7%	1.4%	1.5%	1.5%
All 50 Other Countries					
Million Troy Ounces	75.1	74.5	75.3	76.0	76.4
<i>Percent of World Total</i>	17.0%	16.7%	16.3%	16.2%	15.9%

A collection of silver and gold jewelry including necklaces, bracelets, and pendants. One necklace has a pendant that says "NEW YORK". Another necklace has a pendant that says "Paris". A bracelet has a clasp that says "ROYAL".

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