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WORLD SILVER SURVEY 2006

THE SILVER INSTITUTE

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World Silver Survey 2006

Produced for The Silver Institute
by GFMS Limited

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Peñoles is a mining group with integrated operations in smelting and refining non-ferrous metals, and producing inorganic chemicals. Peñoles is the world's top producer of refined silver, metallic bismuth and sodium sulfate and the leading Latin American producer of refined gold, lead and zinc. Its mission is to add value to non-renewable natural resources in a sustainable manner. The company was founded in 1887. Its shares have traded on the Mexican Stock Exchange since 1968 under the ticker PE&OLES.

Silver Wheaton Corp.

Silver Wheaton is the only "pure" silver company with 100% of its revenue from silver sales. The Company purchases silver from existing mines that produce the metal as a by-product. Since the first contract for silver production completed in October 2004, Silver Wheaton has grown from start-up to approximately 15 million ounces of annual silver sales in just 18 months. The Company expects to increase silver sales to 20 million ounces by 2009 through its existing contracts with three separate mines. Silver Wheaton's management and board of directors have demonstrated a strong track record of creating shareholder value through acquisitions and Silver Wheaton plans to become the leading silver company in the world.

The ***World Silver Survey*** has been published annually by The Silver Institute since 1990. Copies of previous editions can be obtained by contacting The Silver Institute at the address and telephone number on the opening page. For copies outside of North America, contact GFMS at the address on page 6.

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Focus Boxes

This is the twelfth annual survey of the world silver market to be produced for The Silver Institute by GFMS Limited, the London-based analysts of global precious metals markets. The information contained here is based in part on the analysis of the GFMS database of international trade statistics, company report data and other public-domain information. But more importantly, it is also based on a series of interviews with the industry's main players, carried out every year by the GFMS team of analysts and consultants, which provide the essential data to allow the compilation of reliable estimates for world supply and demand.

GFMS is grateful to the many miners, refiners, bullion dealers, bankers and fabricators throughout the world who have contributed their time and information to ensuring that the picture of the industry described in the *World Silver Survey* is as complete and accurate as possible.

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Units used:

supply and demand data are given in units of million troy ounces (Moz) rounded to one decimal place.
1 Moz = 31.103 t (metric tons)
1 ton = 32,151 troy ounces
1 ton = 1,000,000 grams (g)

Terminology:

"-" = not available or not applicable
0.0 = zero or less than 0.05
"dollar" refers to the US dollar unless otherwise stated.

Prices:

Unless otherwise stated, US dollar prices are for the London Silver Market fixing.

Table Rounding:

Throughout the tables and charts, totals may not add due to independent rounding.

1. Summary and Outlook

Silver's extraordinary run over the last two and a half years has seen its price more than triple. Remarkably, this has occurred in spite of an expansion in mine supply and modest growth in fabrication demand. The obvious explanation for why the price has nevertheless performed so strongly is the reappearance of investment on the demand side of the equation. The table below shows that a structural shift in investment has occurred over the last decade. The sustained net disinvestment that characterized the market in the 1990s gave way first to a more neutral situation in 2001-03, with this, in turn, followed by more substantial net investment in 2004-05.

An implied net investment figure of 47.5 Moz (1,478 t) may not at first sight appear to have been sufficient to generate a 38% intra-year advance in the price in 2005. However, there are several reasons why a net inflow of only a few hundred million dollars could move the market. First, net disinvestment in the past has substantially reduced bullion stocks and therefore the volume of metal available for purchase. GFMS' implied data suggests that private bullion stocks may have fallen by around 970 Moz (over 30,000 t) between 1990 and 2000. Second, turnover on both sides of the market has grown far more than the net implied number suggests. New buyers have bid up prices to levels at which existing holders have been prepared to part with their silver. And, finally, much of the investor activity last year was concentrated in the fourth quarter, which was when the price broke out to the upside.

Last year's strong finish has been eclipsed by the strength of investment in the first four months of 2006, which has taken silver close to the $15 level. The continued rally this year does beg the question: how much higher can prices go? An important part of the answer will be how well the new exchange traded fund (ETF) performs. After all, speculative buying ahead of the product's launch at the end of April has provided much of the fuel for the rally this year. At present, the outlook seems positive, with good initial demand reported. However, assuming the ETF is successful in attracting investors, at some point the related build up of a substantial near market bullion stock could start to represent an "overhang", although

Table 1 - World Silver Supply and Demand (million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Supply										
Mine Production	490.9	520.0	542.0	556.7	590.7	606.4	596.5	601.0	620.4	641.6
Net Government Sales	18.9	-	33.5	97.2	60.3	63.0	59.2	90.6	66.5	68.0
Old Silver Scrap	158.4	169.3	193.9	181.2	180.4	182.4	187.0	183.6	181.2	187.3
Producer Hedging	-	68.1	6.5	-	-	18.9	-	-	10.0	15.1
Implied Net Disinvestment	142.8	86.2	53.1	48.8	100.0	-	20.6	-	-	-
Total Supply	**811.1**	**843.6**	**829.1**	**883.9**	**931.3**	**870.7**	**863.3**	**875.2**	**878.1**	**911.9**
Demand										
Fabrication										
Industrial Applications	297.7	320.8	316.4	339.2	375.5	336.4	340.2	350.8	368.3	409.3
Photography	210.1	217.4	225.4	227.9	218.3	213.1	204.3	192.9	181.0	164.8
Jewelry & Silverware	263.7	274.4	259.4	271.7	278.1	286.9	262.4	273.8	247.8	249.6
Coins & Medals	25.2	30.4	27.8	29.1	32.1	30.5	31.6	35.6	42.3	40.6
Total Fabrication	796.8	842.9	829.1	867.8	903.9	866.8	838.5	853.0	839.4	864.4
Net Government Purchases	-	0.7	-	-	-	-	-	-	-	-
Producer De-Hedging	14.3	-	-	16.0	27.4	-	24.8	20.9	-	-
Implied Net Investment	-	-	-	-	-	3.9	-	1.3	38.7	47.5
Total Demand	**811.1**	**843.6**	**829.1**	**883.9**	**931.3**	**870.7**	**863.3**	**875.2**	**878.1**	**911.9**
Silver Price (London US$/oz)	5.199	4.897	5.544	5.220	4.951	4.370	4.599	4.879	6.658	7.312

this threat might only be realized after silver prices have ratcheted up still further.

On balance, therefore, it seems as if further growth in investment could drive prices higher or, at least, maintain them at levels well above what might be expected given the interplay of silver's other supply/demand components. Furthermore, it should be borne in mind that in the short term most of these other variables are very price-inelastic. On the supply side, the main exception is that higher silver and base metals prices have improved the outlook for mine production. As explained in Chapter 4, fairly significant growth in mine production is expected from 2007 onwards. In addition, there is scope for an increase in producer hedging, although we would not exaggerate its potential. On the other hand, scrap supply (in stark contrast to, for example, gold) is proving to be relatively unresponsive to higher silver prices. Government sales will remain a feature of silver supply but, because official stocks are reasonably low, again unlike gold, they do not represent a substantial threat to the price.

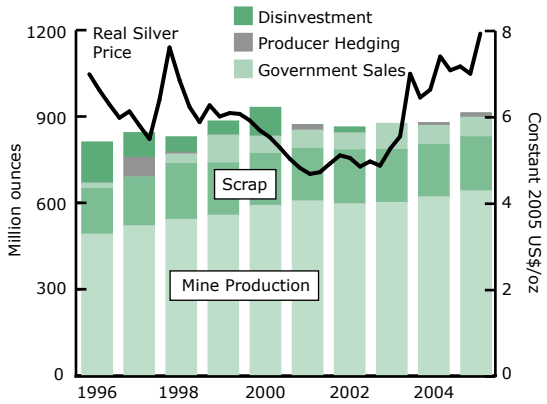
When it comes to fabrication demand, in the short to medium term, there is little price elasticity for most areas of silver use. Even in the jewelry and silverware sphere, the raw material value, in contrast to for example gold and platinum, represents only a low share of the retail price for the majority of articles. The main exception here is India. However, that country's jewelry and silverware offtake accounted for just 6% of total global fabrication in 2005. On the photographic front, high silver prices are having a marginal impact but nothing like as great as that of digital technology. Furthermore, photography's share of total fabrication demand fell to just 19% last year. Most industrial uses of silver are also largely insensitive to price over the short run. However, we would sound a note of caution over the longer-term prospects for an area that now consumes 47% of all fabricated silver. Prices above the $10 level are stimulating the search for alternatives. Furthermore, industrial demand would inevitably suffer a major setback were there to be a global economic slowdown. As regards the latter observation, it is interesting to speculate whether investment demand under such circumstances would be sufficiently robust to prevent a substantial fall in silver prices.

Supply

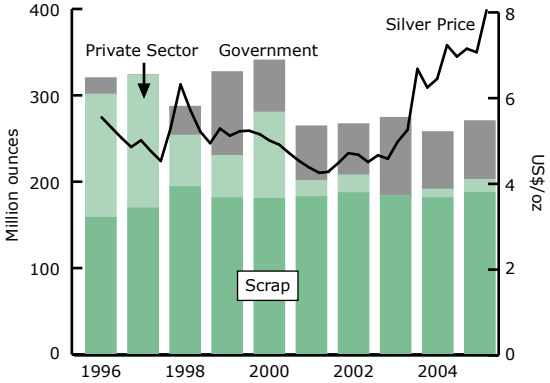
- ***Global mine production posted a noteworthy 3% increase year-on-year to attain 641.6 Moz (19,954 t) in 2005.***
- ***New project hedging coupled with the higher silver price used to value the option contracts assisted a 24% increase in the delta-adjusted hedge book.***
- ***The emergence of government sales in India meant that, despite declining Chinese and Russian sales, 2005 saw a marginal rise in the global figure.***
- ***Despite higher prices, scrap only rose modestly in 2005, up by 3% to 187.3 Moz (5,826 t).***

Growth in global silver **mine production** exceeded expectations, with an increase of 3% or 21.1 Moz (657 t) in 2005, to reach a new high of 641.6 Moz (19,954 t). On a regional basis, the biggest gains were recorded in

World Silver Supply



Mobilization of Above-ground Stocks



Latin America, Oceania and the CIS. Breaking down the results a stage further, improvements were most evident in Peru, Australia, Russia and Kazakhstan. Additional support was provided by more muted rises in North America, Asia and Africa, while Europe was the only region to witness a year-on-year decline. The essentially neutral outcome in North America masked a significant shift in the region, which saw strong gains in Mexico offset a dramatic decline in output in Canada and a more modest fall in the United States. Lastly, in Asia, growth in China, Indonesia and Turkey, accounted for the bulk of the region's 3% year-on-year rise.

Concerning the increase split by source metal, a hike in primary silver production volumes headed the pack with an estimated 8% rise in output, a part of the growth attributed to record performances at Cannington and Fresnillo. Silver generated as a by-product of copper and lead/zinc operations also posted a year-on-year improvement, with both categories registering a 3% increase compared to the previous year. Gold mines were the only major 'source metal' to report a decline in silver production volumes. This was in part due to a hefty decline at Eskay Creek in Canada, where the shortfall was attributed to lower ore grades as the mine moves towards its anticipated closure in 2008.

The outstanding delta-adjusted silver hedge book in 2005 increased by a substantial 24% compared to the corresponding position at end-2004. The hike in **producer hedging** was restricted to the options portion of the book, while forward sales experienced a modest contraction. Fresh hedging by Bema Gold and Apex Silver Mines, respectively related to financing requirements of the construction of Kupol in Russia and San Cristobal in Bolivia, made an important contribution to the measured rise. A further lift was provided by the higher price used to value the options book ($8.83 versus $6.82 at end-2004), which contributed to a rise in the implied delta against the contracts.

Last year, **net government sales** rose at the margin to reach 68.0 Moz (2,114 t). Supply fell from both Chinese and Russian stocks, substantially so in the case of the former. However, these declines were more than offset by the appearance of official sector sales from India, which were good for nearly 26 Moz (800 t). A small contribution to the overall figure was also made by modest sales from a handful of other countries.

Total global **scrap** supply rose modestly in 2005, up by 3% to 187.3 Moz (5,826 t). Considering the 10% rise in the dollar silver price, it might have been expected that the increase would have been greater. One reason this was not the case is that a substantial component of silver scrap recovery is now quite price inelastic, being driven by environmental and other legislative constraints. Consequently, recovery (for example from electronics) tends not to respond dramatically to price increases. Secondly, the recovery of silver from photographic applications dropped sharply in most of the main markets (including the United States and Japan). This partially offset growth in recovery from the electronics and electrical sectors. Higher prices did, however, impact more markedly on recovery from the jewelry sector. Both India (largely from private individuals) and Italy (mainly through heavy trade destocking) recorded substantially higher levels of jewelry scrap in 2005 (and current indications for 2006 point to yet stronger growth).

Demand

- ***Total fabrication rose by 3% in 2005 to 864.4 Moz (26,885 t), its highest total since 2001.***
- ***Industrial fabrication grew a strong 11% to a record 409.3 Moz (12,732 t) last year.***
- ***Jewelry and silverware demand rose 1% to 249.6 Moz (7,763 t), thanks mainly to India and China.***
- ***The fall in photographic demand accelerated to 9% in 2005, cutting offtake to 164.8 Moz (5,126 t).***
- ***The 4% fall in coins & medals fabrication was mainly due to weaker European minting.***
- ***Implied net investment rose by 23% in 2005, to reach 47.5 Moz (1,478 t).***

The 3% rise in **total fabrication** last year hides some varying performances of the key sub-components. The pace of the decline in photography quickened last year to a 9% fall, although these losses were more than offset by gains within industrial fabrication, which comfortably surpassed its 2000 peak. Finally, jewelry and silverware rose by just 1%, as the end-year price rise resulted in a significant fourth quarter slowdown.

Industrial fabrication grew by a robust 11% in 2005, rising to 409.3 Moz (12,732 t). The primary drivers of this impressive performance were stronger global economic growth and consumers' insatiable demand

for products that in one form or another utilize silver. What is probably most significant is that offtake last year stood all of 9% higher than the previous peak, recorded at the height of the 'tech bubble' in 2000. All of the major regions recorded higher demand last year, with the notable exception of Europe, where offtake was marginally down.

The most spectacular growth in both quantity and percentage terms was seen in India, up 19.8 Moz (617 t) or 59%, driven by higher demand in the electronics and electrical sectors as well as by a significant rise in plating of fashion jewelry. US offtake also rose strongly, pushing above 100 Moz for the first time (basis GFMS' series which starts in 1990). As was typical of most countries where offtake rose, electronics and electrical applications were the key drivers. Silver in these uses rose by 10% last year. Offtake of brazing alloys and solders rose more modestly, by 'only' 8%, reflecting somewhat weaker consumer demand (for products like air conditioners) compared to the electronics sector.

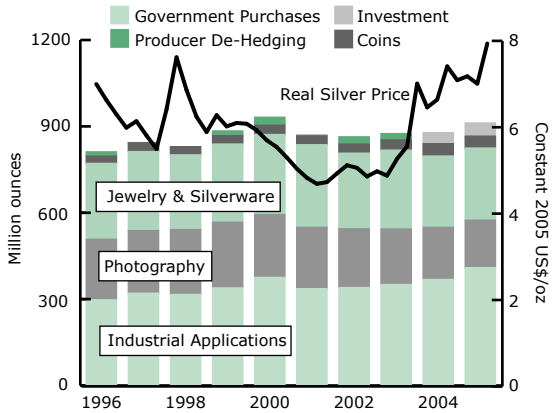
Despite higher prices, **jewelry and silverware** demand rose in 2005. However, this was only by 1% and the total, 249.6 Moz (7,763 t), was the second lowest since 1995. The two main contributors to the gain were India and China, though a large rise was also seen in Russia. All saw robust domestic consumption, largely thanks to buoyant GDP growth, though the first two also enjoyed vibrant jewelry exports. The latter was largely due to these countries' lower costs, in particular for high labor, gemset pieces whose share of most consuming markets is growing. Increasing competition from India and China largely explains why the two other main fabricators, Thailand and Italy, saw respective falls in fabrication (including silverware) of 1% and 10%. Lower jewelry consumption within Italy and certain other western countries was another contributory factor. A continuation to the secular slide in silverware consumption in many markets accounts for much of the drop in this area, which is thought to have been steeper than for jewelry alone.

Photographic demand for silver declined by a further 9% last year to 164.8 Moz (5,126 t). The bulk of the loss was due to sharply lower silver use in the production of color negative film, sales of which are falling due to consumers switching to digital image capture. Silver requirements for the manufacture of photographic paper and X-ray film also fell at the margin last year. Since its peak level in 1999, the use of silver in photography has slumped by 63.1 Moz (1,961 t) or 28%.

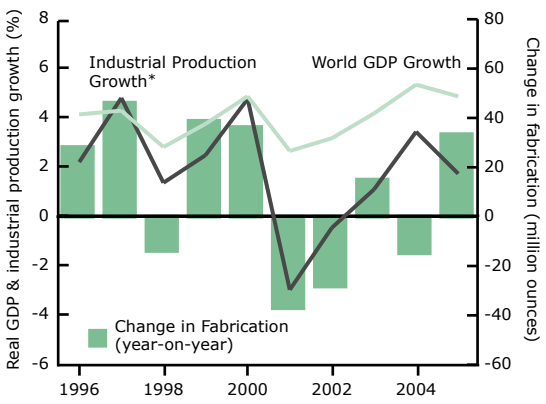
Coins and medals fabrication declined by 4% last year, as higher minting across much of North America and in Germany, in particular, was offset by weaker output in Portugal, Spain and China.

2005 saw **implied net investment** rise to 47.5 Moz (1,478 t). Over the last two years there has been substantial growth in activity from mainly institutional investors in silver futures and, especially last year, in over-the-counter market instruments. For much of 2005, investment demand in silver tracked moves in the gold price, as well as expectations thereof. From the latter part of the year and still more so in the first third of 2006, however, an important factor was speculative buying ahead of the launch of the much-awaited silver exchange traded fund. This started trading on April 28th and, in its first two weeks, amassed holdings of 62.0 Moz (1,928 t).

World Silver Demand



Fabrication Demand and World Economic Indicators



* Industrial countries only; Source: IMF, GFMS

2. Silver Prices

- ***The silver price averaged $7.31 in 2005, a rise of 10% on 2004 and its highest level since 1984.***

- ***A rise in investment, particularly in the fourth quarter, accounted for much of the increase though growth in fabrication was also important.***

The silver price rose a solid 10% last year to an annual average of $7.312. As in 2004, this increase was the largest of the main precious metals, with gold up 9%, platinum gaining 6% and palladium falling 13%. Silver's intra-year gain was far more dramatic at 38%, reflecting the strength of the fourth quarter rally that took the price to an 18-year high of $9.225.

Such levels now in 2006 no doubt sound very subdued, given the yet more dramatic rally this year which so far has seen prices surge to over $14, levels not seen since 1983. These gains were almost exclusively investment driven and related closely to increased optimism over the likelihood of a successful launch of a silver exchange traded fund or ETF (which came to fruition on April 28th).

Conditions in 2005, in isolation, however still merit the title of a bull market, given that the rally broadly extended into prices in other currencies. Increases for the yen and euro price, for example, were slightly higher than in dollar terms, but rupee price gains were much more modest. The increase in local prices for the top three producers, namely Peru, Mexico and Australia, were also slightly smaller at between 6% and 8%.

An analysis of prices in real terms also comes back with a bullish verdict since, on this basis, the annual average was last higher in 1989. Real prices also provide some insight as to how sustainable prices might be at today's levels in the low-teens; during the 1980s on this real basis, the annual average silver price was only below $10 in two years and was above $15 in five.

With all this talk of bull runs, a price commentary on 2005 would be incomplete, however, without it being pointed out that rangebound conditions persisted for much of the year (from mid-February to early October), when excursions below $7.00 or above $7.50 proved brief.

US$ Silver Price

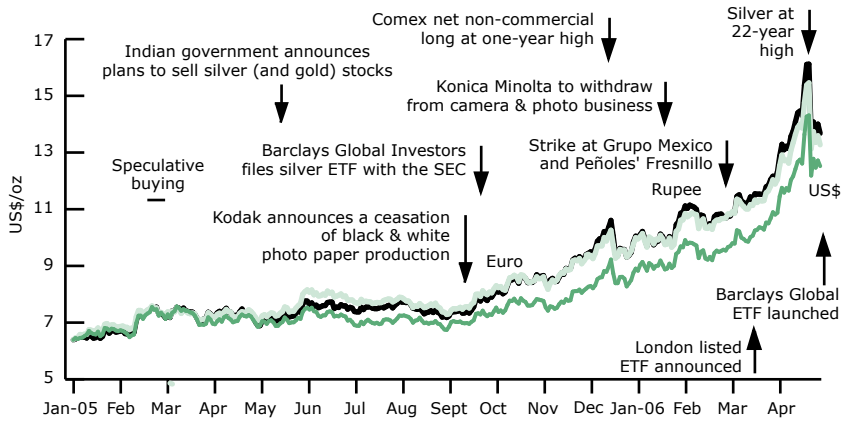
	1975	1985	1995	2005
Annual Average	4.426	6.132	5.197	7.312
Maximum	5.211	6.750	6.038	9.225
Minimum	3.928	5.450	4.416	6.390
Range:Average	29.0%	21.2%	31.2%	38.8%

The Silver Price in Other Currencies in 2005

	US$/oz	Euro/kg	Rupee/kg	Yen/10g
Annual Average	7.3115	189.0	11,083	259.0
Maximum	9.2250	248.1	13,365	355.9
Minimum	6.3900	154.6	10,165	214.4
Range:Average	38.8%	49.5%	28.9%	54.6%

London Silver Market: Spot Price

US$/oz; other currencies reindexed to 2nd January 2005



After a quiet start to 2005, lease rates entered a new phase in early May when a rate spike began a volatile but ultimately upward move. The percentage gains were greatest at the short end - the 3-month rate rose from almost zero to a more respectable 0.6% or so over the year. Gains at the longer end were still impressive - the 12-month rate's annual average almost doubled to 1.8%. As with prices, further strong gains have been seen so far in 2006; the average for the January-April period for the 3-month and the 12-month rates, for example, jumped to 2.3% and 3.9% respectively.

The overriding factor explaining the increases in both years was a growing belief that the silver ETF would be launched. With expectations that this would remove large amounts of silver from the lending pool and therefore generate even greater rate rises, this triggered a sizeable volume of defensive borrowing by the likes of banks, refiners and end-users in expectation of this eventuality.

Price volatility, perhaps a little surprisingly, fell in 2005 to a middling 24%, reflecting the rangebound conditions in force for much of the year. However, volatility for the fourth quarter in isolation was a little higher at 27%.

Volatility (US$ Price) - Annual Averages*

	2002	2003	2004	2005
Actual - 1 year	19%	20%	39%	24%
Implied - 1 month	21%	22%	34%	25%
Implied - 3 months	19%	21%	33%	26%
Implied - 1 year	18%	19%	30%	26%

*implied statistics source: UBS

Market Analysis

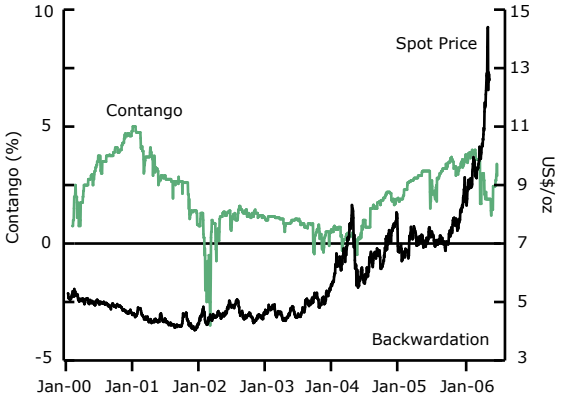
The chief driver of prices during 2005, especially in the fourth quarter, was again the surge in investor interest. However, industrial demand's strong growth, the fact that jewelry and silverware did not collapse and supply's response to higher prices proving quite restrained also featured, particularly in the first three quarters.

The Comex remained an important forum for investment during 2005, as suggested by the 11% rise in annual futures volumes and in the open interest rising by 30% over the course of the year. The net non-commercial long, a useful proxy for fund activity, however, trended downwards to end-August, though its weekly swings still clearly shaped shorter term moves in the silver price. This all reversed from September as a sustained rise in this 'fund' long coincided with the strong price rally through to year end. Data on the less important Tocom also points to a sizeable rise in speculative interest during the fourth quarter.

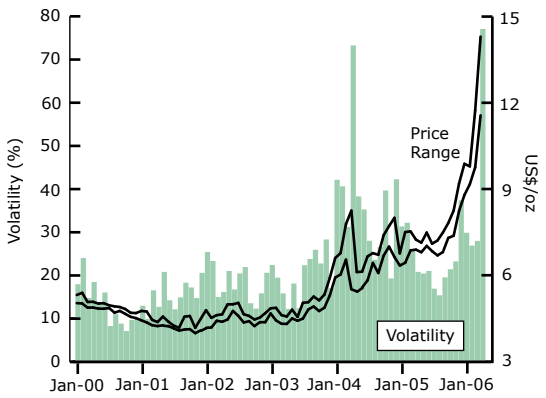
The physical market also saw marked swings in activity. January saw good sales of US silver Eagles but these then turned largely quiet right through until December. The over-the-counter (OTC) markets are also understood to have seen an increased level of interest in 2005. Their contribution was critical to the dramatic rally from September onwards, though they are also thought to have been prominent in the gains seen in early February and in the second half of May.

The timing of these periods of heavy OTC activity give some indication as to the rationale for swings in investor interest. The increase in May, for example, was silver-

London Spot Price and 3-month Contango



Daily Silver Price Volatility



specific, being tied to the first rumors of a silver ETF being launched. At the time, its market impact was fairly slight as many saw the chances of it being granted regulatory approval as slim. Some may have felt prospects improved during the rest of 2005 but the real swing in belief was arguably more a 2006 story and this was one of the key factors behind the rise in the silver price in the run up to the ETF's launch on April 28th this year. That the issue of approval was the center of attention was largely due to there seeming to be little doubt that, if launched, the ETF would prove a success.

The second chief driver of rising investor interest was a supportive background, namely the macro economic imbalances fuelling investment in sister metal gold and surging prices for other commodities, in particular the base metals and energy. Their general rally in the wake of hurricane damage in the United States was arguably the main driver of silver's own rally from September onwards. It would be foolish to ignore the contribution too of momentum - in other words, price gains already achieved attracting fresh waves of short term speculators. Fluctuations in the US dollar were of a limited and declining importance (see correlations table on page 14).

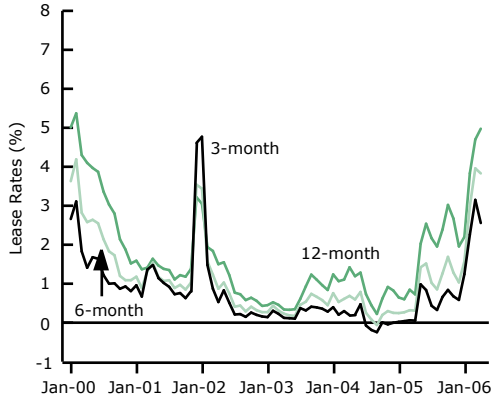
It would be wrong, however, to see investment as the sole source of price strength in 2005. The marked 11% growth in industrial offtake (good for an additional 41.0 Moz or 1,275 t of demand) was also important. The largely price insensitive baseload this provided made it easier for prices last year to hang on to the gains they had begun to enjoy in 2004. This offtake was also quick to materialize on any dips and contributed much to the flat underside to 2005's price graph. This was important as the apparently limited nature of downside price risk added confidence to investors.

Jewelry and silverware also added some support to prices, again particularly on dips, in the first three quarters of 2005 as this area's offtake looks to have been notably firmer, despite already higher prices. This sector weakened in the fourth quarter but signs of a slump anywhere were largely absent until December. This overall stable performance is testament to the importance of rapid GDP growth in the likes of India and China.

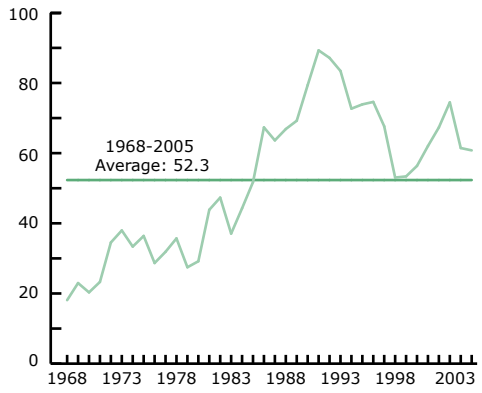
The price rise was also assisted by the modest supply response to higher prices. Scrap's limited gains were largely structural in nature, namely the high share of fabrication going to industrial ends (where recycling rates are low) and the ongoing retreat in the photographic sector due to digital inroads. These two mask the very real price-led rise in scrap from jewelry and silverware in such countries as India. Net government sales, also showed a limited price response, edging up just 2%. There was some opportunistic selling on price upticks but overall volumes were constrained, particularly by the Chinese, adding support to previous assertions that the latter's stocks were heavily reduced on previous levels.

Mine production did little to impact prices as its increase at 3% was modest and well telegraphed. Producer hedging grew fast in 2005 and much of this concerned secondary miners locking in what they perceive as attractive prices for their silver and some project hedging. However, the absolute scale of the increase was small and there was little evidence of a change in primary producers' typically negative attitude towards hedging.

Silver Leasing Rates



The Gold / Silver Price Ratio



Silver and Other Commodity Prices

The mixed performance of traditional investment markets, namely stocks and bonds, coupled with the positive trend in the prices of many "alternative investments", have driven an increasing number of investors towards this latter class of assets. In the case of commodities in particular, tight energy markets, geopolitical events and the rising demand for basic materials in developing countries have provided the fundamental drivers for what many analysts call a "supercycle". This has encouraged some investors to ride the bandwagon, by doing so providing further fuel for the continued rally in the price of many commodities.

The attention the overall sector has enjoyed has without doubt benefited investment in silver and, by implication, the price of the white metal. For instance, much of the boom in commodity investment has come through the buying of commodity baskets, some of which include silver. It is thus interesting to examine how this has translated into the forming of links between the silver price and other commodity prices.

The accompanying table illustrates the quarterly correlation coefficients between silver and a number of commodities, as well as the Goldman Sachs Commodity Index (GSCI) and the US dollar. Immediately it becomes obvious that the strongest link the silver price has maintained has been that with gold. GFMS have often discussed the relationship that exists between the two metals' prices, largely fuelled by investors trading silver on the back of changes in the gold price and expectations thereof. It is interesting to note how the strong correlation seen in the last quarter of 2005, when the whole precious metals complex went through a speculator-driven rally, was replaced by a much weaker link in the first three months of 2006, when silver investment's focus moved more towards the potential launch of a silver ETF.

Another link which can at times be significant is that between silver and base metal prices. There is, in fact, a school of thought that argues that, since silver as a commodity is closer to base metals in its end-uses than it is to gold, it makes sense to trade these together. Although this theory has a sound basis, the fact remains that the majority of investors view and trade silver as a precious metal, boosting the partly self-fuelled link that exists between the two. We can thus see that the correlation between the silver and base metals prices is both weaker and less consistent over time than that between the price of the white metal and gold, during the period examined.

Correlations of Changes in Daily Prices

(using log-returns in spot prices)

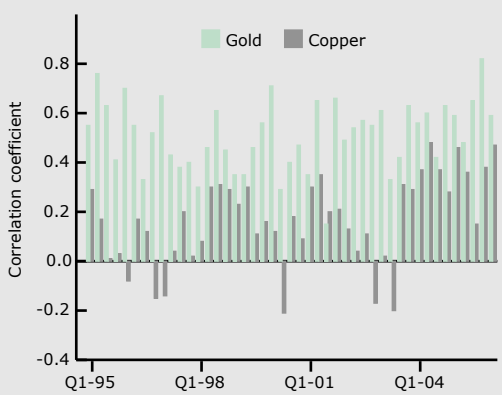
	2005 Q1	2005 Q2	2005 Q3	2005 Q4	2006 Q1
Gold	0.59	0.48	0.65	0.82	0.59
Copper	0.46	0.36	0.15	0.38	0.47
Zinc	0.49	0.39	0.14	0.37	0.48
Lead	0.35	0.40	0.25	0.29	0.32
Brent Oil	0.22	0.26	0.07	0.09	0.04
GSCI	0.29	0.39	0.09	0.08	0.11
US$/€ Rate	0.50	0.24	0.36	0.10	0.08

Source: GFMS, Reuters

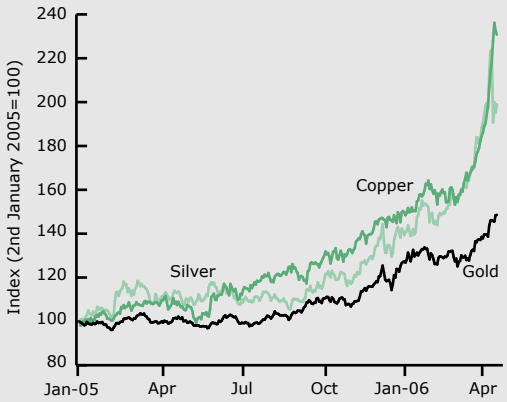
As can be seen in the table, silver's correlation with the oil price and the GSCI is significantly lower than those discussed previously. It is our understanding that any relationship that might exist between changes in their prices and silver investment demand is marginal and largely indirect.

Regarding the correlation that often exists between the silver price and the US dollar, it is our understanding that this is primarily indirect in nature. More specifically, it is largely fuelled by the aforementioned link between the white metal and gold, and the correlation between the gold price and the greenback.

Correlation of Silver and Other Commodity Prices



Gold, Silver and Copper Prices



3. Investment

- ***Investment demand, concentrated in the fourth quarter, was the principal factor behind the rise in the silver price last year.***

- ***Investors' purchases ahead of the launch of the first silver ETF drove the metal to fresh highs in the first quarter of 2006.***

Overview

Since 2004, investment demand has increasingly become the dominant influence on silver prices. Support from growth in fabrication demand (especially its industrial component) has become less important, with new highs being achieved largely on the back of growing speculative interest in the metal. For much of last year, nevertheless, investors were somewhat subdued. Certainly, demand - in the shape of a substantial core long position - remained fairly solid throughout 2005 but the fireworks really only started in the fourth quarter. Prior to that, the price was largely rangebound, with silver taking its cue from a similarly becalmed gold. Investors and speculators essentially did not have all that much to get their teeth into until the final months of the year when a series of factors came into play.

Arguably, chief among these factors, at least in the early stages of the move, was the rally in the gold price. Traditionally silver takes its lead from gold and this seems to have been the case in the fourth quarter, with for example a very strong 0.82 correlation over the period between daily price movements in the two metals.

Although silver's correlation with base metals is much less pronounced than it is with gold, there is little doubt that the powerful upward trend in, particularly, the copper price has encouraged investment in silver. More generally, the growing investor interest in commodities as a distinct asset class has benefited the white metal. This is partly because investors in commodities frequently choose to take exposure via baskets or indices that may well contain silver. For example, silver has a 2% weighting in the widely followed Dow Jones AIG index.

Silver Price and Investment Indicators

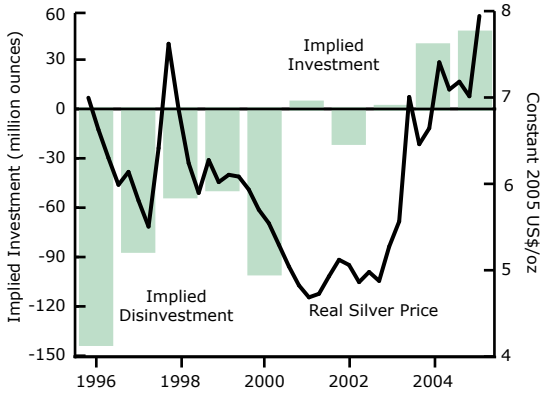
	2004 Average	2005 Average	Change y-o-y
Silver Price $/oz	6.658	7.312	10%
Contango (3-mth annualized)	1.52%	3.10%	n/a
US$ Libor (3-mth annualized)	1.62%	3.57%	n/a
S&P 500 Index	1,131	1,207	7%
CRB Index	297	296	0%
XAU Index	96	99	3%
World GDP Growth*	5.3%	4.8%	n/a
Advanced Countries Consumer Inflation*	2.0%	2.3%	n/a

*Annual rates, source: IMF World Economic Outlook, April 2006

Trend followers were important in fueling the rally that got underway with some force once silver had decisively broken through the long-standing $7.50 barrier in October. And, such buyers have only grown in number as silver has subsequently registered successive fresh highs in 2006.

Front-running investment ahead of the prospective silver ETF launch has also been an important source of investment demand, especially in the first quarter and in April of this year. However, although the "ETF premium" on silver rose dramatically as the product's launch appeared ever more likely in early 2006, it is worth bearing in mind that some investors were already positioning themselves for such an eventuality well before the fourth quarter 2005 rally in the price took place.

Implied Net (Dis)investment



London Bullion Market (LBM) and Comex Turnover

(daily averages)

	LBM No. of Transfers	Turnover Moz	Comex Turnover Moz	LBM/ Comex Ratio
1999	405	185	83	2.2:1
2000	256	116	63	1.8:1
2001	241	108	52	2.1:1
2002	241	87	63	1.4:1
2003	233	92	82	1.1:1
2004	326	104	101	1.0:1
2005	331	110	110	1.0:1

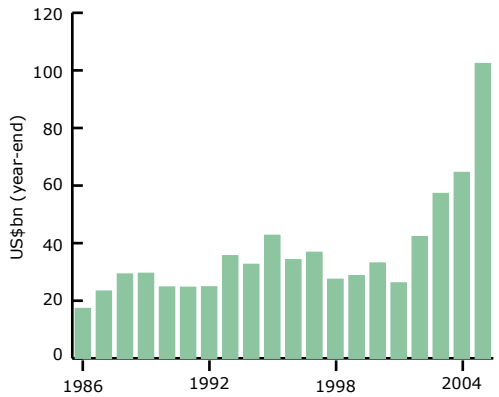
Source: LBMA, Comex

As indicated above, buying ahead of the ETF has been decisive in the first four months of 2006. As the product's launch became more certain a wave of new money came into the metal. At the same time, however, some of those that had earlier established long positions started to take profits. (For example, recently Warren Buffett confirmed that his entire silver position had been liquidated, although much of this would have been sold some time ago.) Net investment demand was therefore rather less than gross, a tendency also important in the fourth quarter of 2005, as higher prices encouraged some existing holders to part with their metal.

Although buyers have predominated, the fact that investors have been on both sides of the market helps to explain why the apparent volume of investment demand has not been higher. For instance, the residual balancing item in Table 1 on page 7 of this *World Silver Survey* shows "only" 47.5 Moz (1,478 t) of implied net investment. This may be considered a rather low figure in the light of last year's impressive price rise. However, the price has effectively been bid up at the margin by new investors coming into the market. In many cases, on the other side of the transaction existing holders of silver have required higher prices to sell.

Value of "Fund" Positions in 13 Commodities

Combined end-year positions



Source: CFTC, EcoWin

The bulk of the investor activity in silver has come from institutional investors, with a subsidiary role played by a relatively limited (certainly compared to gold) number of high net worth individuals. Small private investors have so far had little impact on the market, although there is arguably some scope for that to change in the future given silver's recent spectacular and widely publicized advance and the launch of the ETF, which has provided a more efficient vehicle for the retail investor in silver. When it comes to institutional investors, the running has mainly been made by the more speculative players, namely hedge funds and commodity trading advisors plus some banks' proprietary traders. Mainstream investors such as pension funds have only a minuscule exposure to the metal, mostly through investments in commodity indices and the like. Silver's investor base remains fairly narrow and a broadening of it would seem necessary if the metal is to move still higher or even consolidate its gains over 2006-to date.

Comex

The remarkable rise in silver investment demand seen over the course of 2005 was also reflected in the growth in activity in silver futures and options traded on the Comex. Total futures volume for the period reached 5.5 million contracts (equivalent to a nominal 27.7 billion ounces or 861,466 t), registering a further 11% gain on 2004's already impressive figure. At 131,229 contracts (equivalent to a nominal 656 Moz or 20,408 t), open interest at year-end was also up year-on-year, by 30%. Total turnover in options for the year registered a 11% year-on-year increase, although the figure, at 1.1 million contracts, remained at comparatively low levels.

CFTC reports on non-commercial positions in silver futures and options on the Comex are understood to proxy speculative activity on the exchange. Basis this data, fund activity in Comex silver futures was on average higher in 2005 than in 2004. Interestingly, activity on the short side saw disproportionately higher growth over the year, leading to non-commercial *net* positions being

lower, on average, in 2005 than in 2004. Nevertheless, the surge in silver investment seen in the latter months of 2005 saw the end-year net long in futures reach 61,193 contracts, up by 62% year-on-year. Non-commercial net positions in Comex options remained at comparatively low levels throughout 2005, scarcely exceeding 5,000 contracts either long or short. Interestingly, on a net basis, these options positions remained on the short side over the last two months of the year.

Tocom

Activity in silver futures traded on the Tocom accounts for only a small fraction of overall silver market turnover. Total volume on the Japanese exchange in 2005, at 817,624 contracts (equivalent to 1.6 billion ounces or 49,057 t), was down by 45% year-on-year, while the 16,897-contract end-year open interest was down by a shade on the end-2004 one.

Sumitomo Corporation provide GFMS with data on daily non-proprietary net positions in silver futures traded on the Tocom. Although strictly speaking these positions are not limited to speculative investors, they can be used as a rough guide to fund activity on the exchange. Net positions remained long over the bulk of 2005, growing strongly during the October to December period, to reach their peak of 15,759 contracts by mid-December, before a round of liquidations reduced the year-end level to 7,621 contracts, a figure that was still up by 49% on the end-2004 one.

Net "Fund" Position on Comex

		Contracts	Moz	Price
2001		7,284	36	4.36
2002		27,372	137	4.60
2003		29,153	146	4.90
2004		43,617	218	6.69
2005	Q1	36,601	183	7.00
	Q2	37,958	190	7.16
	Q3	24,260	121	7.07
	Q4	56,328	282	8.06
2006	Q1	54,042	270	9.74

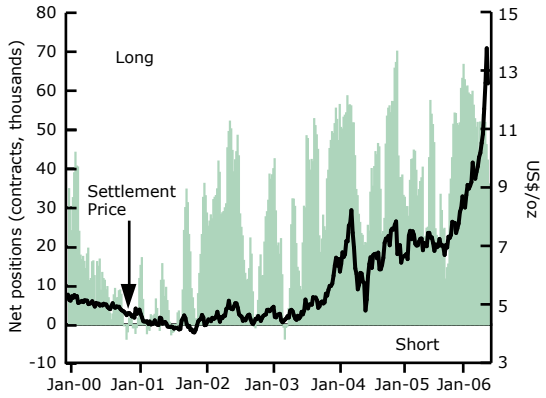
(period averages for non-commercial net futures positions, Moz equivalent and settlement price in $/oz; Source: CFTC)

OTC Market

There are no statistics on investor activity in the over-the-counter (OTC) market for spot silver, forwards and options. London Bullion Market turnover figures would capture much of this but the waters are muddied by the data also capturing the impact of transactions by other market participants. Our field research, however, points to the OTC market as having been a key arena for investors on both the buy and sell sides during the course of 2005, with its importance growing further in recent months. Indeed, data on Comex non-commercial open interest would seem to indicate that while long positions on the futures exchange expanded during the course of 2005, most robustly in the fourth quarter, in contrast the non-commercial net long declined in the first quarter of

Comex: Non-commercial Net Positions

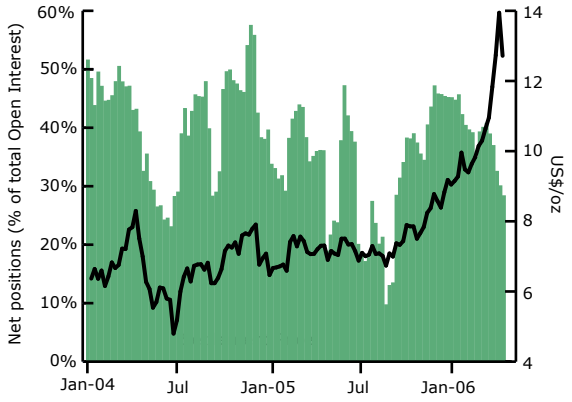
Weekly Net Positions & Settlement Price



Source: CFTC

Comex: Non-commercial Net Positions

Weekly Net-Positions as a Percentage of Total Open Interest



Source: CFTC

2006. Given the investment-driven rise in the price this year, the conclusion therefore has to be that buy-side interest has increasingly come via the OTC market rather than the New York futures exchange.

Physical Investment

Direct purchases by investors of physical bullion are overshadowed in terms of their market impact by the buying (and selling) of paper silver. This is particularly true in terms of turnover but the argument also applies when it comes to net investment demand. For instance the vast majority of the 47.5 Moz (1,478 t) of Implied Net Investment we calculate for 2005 would have come about through financial intermediaries net buying of metal against their exposure to investors' long positions. Even though, within this, the share of allocated silver is reported to have grown last year (for example, in Europe), most demand would have been in unallocated form.

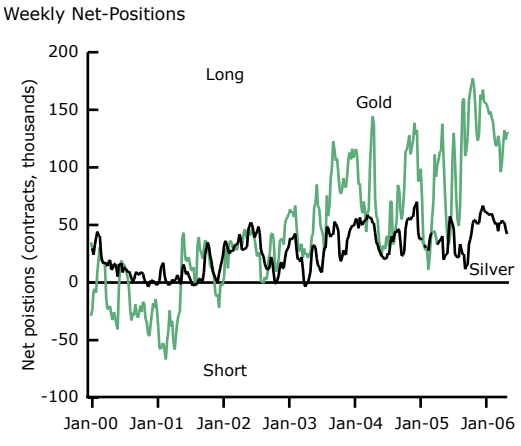
Leaving aside demand for allocated silver via metal accounts et cetera and the not insubstantial purchase of coins (the latter is treated separately in Chapter 7), only a small quantity of bullion is directly purchased by (and delivered to) institutional and private investors. An important reason for this is the lack of portability and relatively onerous storage costs of physical silver. (Even in the case of gold these are important reasons why investors in most countries prefer paper products.) In addition, buy-sell spreads on physical bullion are large and in some countries there are negative tax implications to holding the metal in bar form. These various factors are largely irrelevant when it comes to paper products and, of course, the silver ETF.

Last year there was nevertheless some growth in activity in physical investment products, something that has gathered pace in 2006-to date. In the United States, for instance, two-way turnover has increased in coin bags and 100 oz bars. And, even in Europe (where silver is burdened with Value Added Tax) there has been a jump in the quantity traded of small bars in sizes up to 5 kg. However, the biggest growth market for physical products has been India.

The GFMS data series for India does not currently split out investment demand for silver in coin and bar form. This is not to say that demand for investment silver in India is insignificant. To the contrary, our data suggests that offtake in this area is substantial. In the past we have simply included coin and small bar demand in our jewelry and silverware series because we did not believe we had enough hard data to accurately split the series.

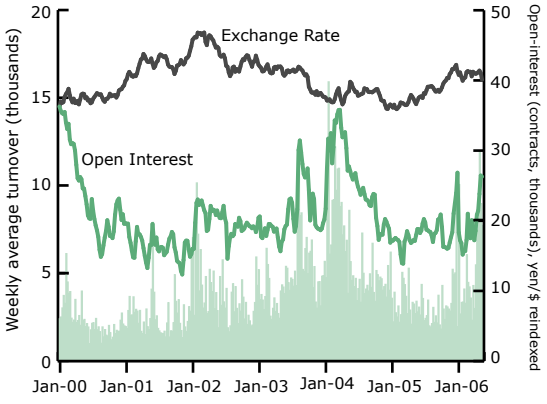
What has become apparent in the past few years is that there has been a secular shift towards buying coin and small bars (typically in the range 10 to 500 grams for both) at the expense of jewelry in particular. We believe that it is now becoming necessary to separate both jewelry from silverware, and these in turn from purchases of coin and small bar. We hope to publish estimates of these splits in next year's *World Silver Survey*.

Comex: Non-commercial Net Positions



Source: CFTC

Tocom Futures Turnover and Open Interest



Source: Tocom

The Silver Exchange Traded Fund

April 28th 2006 marked the launch of the iShares Silver Trust, the much awaited American Stock Exchange listed silver ETF. The Barclays Global Investors issued product is structured in a manner similar to the gold ETFs that have been available since as far back as March 2003. More specifically, each unit of the ETF is equivalent to 10 ounces of pure silver, and every security issued has to be backed by an equal amount of silver bullion, held in allocated form with the custodian bank, J.P. Morgan Chase Bank in London.

Despite being similar in structure to the gold ETFs, the potential impact of the iShares Silver Trust on the silver market could be (and, in fact, has so far proven to be) significantly more dramatic than the one gold ETFs have had on the gold market.

The most important reason for this is that the silver market is not nearly as liquid as the gold market. In Chapter 5 of this *World Silver Survey*, GFMS estimate identifiable stocks of silver at end-2005 stood at 607.9 Moz (18,907 t). Priced at the end-April Comex settlement price of $13.51, this pool of available metal amounts to just $8.2 billion. To put this figure in perspective, according to GFMS' *Gold Survey 2006* the volume of private and official stocks of gold bullion stood at over 1,700 Moz (around 53,400 t), equivalent to $1.1 trillion, basis the end-April London PM fix.

Due to this relative lack of readily available metal, the movement of a substantial quantity of silver bullion from unallocated into allocated form (which is essentially what the silver ETF translates into) could easily lead to a very tight market, as manifested by higher silver leasing rates and a rise in the metal's price.

Regarding the potential size of the projected inflow of funds into the iShares product, streetTRACKS Gold Shares, the first gold ETF to list in the United States, generated demand equivalent to $1.4 billion in its first week of trading alone. Given the end-April price mentioned above, this figure translates into a little over 100 Moz (3,100 t) of silver, equivalent to roughly one sixth of the identifiable stocks of the metal, as estimated in Chapter 5 of this *World Silver Survey*.

Looking at the impact the product has so far had on the market, in the last few months of 2005 and particularly during 2006, silver investment demand has experienced a remarkable rise, as investors have front-run the launch of the product, driving the price of the white metal through a series of multi-year highs. In addition to that, as is mentioned in the relevant section of Chapter 5, there was some precautionary borrowing in expectation that the ETF would result in higher silver leasing rates. Not surprisingly, the additional borrowing itself led to a noticeable increase in borrowing costs ahead of the launch of the ETF in April.

Through to May 11th, the product had accumulated 62.0 Moz (1,928 t) of silver, driving the silver price to the fresh high of $14.43 on the same day. Regarding lease rates, these have also risen markedly, the 3-month rate peaking at 4.97% on May 11th and the 12-month rate at 6.70% on May 4th. These compare to the 2005 averages of 0.46% and 1.81% respectively.

Top 10 Largest Commodity Trading Advisors

CTA Assets (US$ billion)

	2004	2005
Bridgewater Associates Inc - Pure Alpha Fund I	26.0	16.1
Campbell & Co Inc - Fin, Metals & Energy (Large)	8.5	10.0
FX Concepts Inc - Developed Markets Currency	3.3	5.8
Winton Capital Mgt Ltd - Diversified	1.5	4.0
Crabel Capital Mgt LLC - Div Futures 1x	1.7	2.2
Man Investments - Man AHL Diversified plc	2.0	2.1
Aspect Capital Ltd - Diversified Fund	2.2	1.7
John W Henry & Co Inc - Strategic Allocation	2.0	1.7
Grossman Asset Mgt - IPS Currency	1.7	1.6
Man Investments - Man AHL Alpha plc	1.5	1.5

Top 10 Largest Hedge Funds

Fund Equity (US$ billion)

	2004	2005
Orbis Global Equity	4.6	6.8
Fairfield Sentry Ltd	5.1	4.9
Shepherd Investments Intl Ltd	3.6	4.8
Millennium Intl Ltd	3.1	4.0
King Street Capital Ltd	3.3	3.7
Ashmore Emerging Markets Liquid Investment Portfolio	2.4	3.5
M Kingdon Offshore Ltd	2.5	3.3
Centaurus Alpha Fund	2.0	3.3
Orbis Japan Equity	1.8	2.9
JANA Offshore Partners Ltd	1.4	2.6

Source: MARHedge, 2006

All figures refer to end-December. Data is based on entities reporting to The Barclay Group database.

4. Mine Supply

- ***Global mine production posted a better than expected 3% increase year-on-year to attain 641.6 Moz (19,954 t) in 2005.***

- ***Primary silver production increased by 8%, with more modest rises in silver generated at both copper and lead/zinc operations. Silver sourced at gold mines was the only major category to decline, suffering a 5% drop year-on-year.***

- ***Cash costs ballooned by 24%. Higher charges for fuel and mining consumables drove the rise, which would have been more severe without the benefit of higher by-product credits.***

- ***Producers increased their end-year hedge cover in 2005, which in nominal terms rose by 20%. Additions were restricted to the options portion of the book, with forward sales posting a modest decline.***

Mine Production

- ***Higher output in Mexico, Australia, Peru, Russia and Kazakhstan helped global silver output touch a new high of 641.6 Moz (19,954 t).***

Strong growth in Mexico and Australia assisted global silver production to a record high of 641.6 Moz (19,954 t), a 3% or 21.2 Moz (657 t) increase year-on-year. The improvement was partly explained by record performances at two of the world's largest silver producing mines, namely Peñoles' Fresnillo in Mexico and BHP Billiton's Cannington in Australia. Peru, ranked as the number one producer, also registered healthy gains, with higher output at Antamina, El Brocal and Yanacocha all contributing to the country's 4% jump in recorded production volumes. Additional support came from the CIS, with double-digit gains in both Russia and Kazakhstan. Expanded capacity at Dukat and the start of

Top 20 Silver Producing Countries

Ranking 2005	Ranking 2004		Output (Moz) 2004	Output (Moz) 2005
1	1	Peru	98.4	102.6
2	2	Mexico	82.6	92.3
3	3	Australia	71.4	77.4
4	4	China	63.2	64.7
5	6	Chile	43.7	44.3
6	9	Russia	37.5	42.2
7	5	Poland	43.8	40.5
8	8	United States	40.2	39.2
9	7	Canada	41.6	34.1
10	10	Kazakhstan	22.6	25.9
11	11	Bolivia	14.0	12.8
12	13	Indonesia	8.6	9.9
13	12	Sweden	9.4	9.1
14	14	Morocco	6.7	7.4
15	15	Argentina	4.9	5.2
16	16	Turkey	4.0	5.2
17	18	South Africa	2.5	2.8
18	17	Iran	2.7	2.6
19	21	Uzbekistan	1.9	2.2
20	20	India	2.1	2.1

Top 20 Silver Producing Companies

Ranking 2005	Ranking 2004			Output (Moz) 2004	Output (Moz) 2005
1	1	BHP Billiton	Australia	49.7	53.8
2	2	Industrias Peñoles [1]	Mexico	44.5	47.4
3	3	KGHM Polska Miedź	Poland	43.2	40.0
4	5	Kazakhmys	Kazakhstan	17.7	20.5
5	7	Polymetal [1]	Russia	17.3	18.9
6	4	Grupo Mexico	Mexico	19.4	18.5
7	9	Cia. Minas Buenaventura [2]	Peru	14.2	15.3
8	8	Rio Tinto	UK	14.8	14.9
9	10	Coeur d'Alene [1]	USA	14.1	13.7
10	11	Xstrata	Australia	12.2	13.3
11	12	Falconbridge [3]	Canada	11.6	12.5
12	14	Pan American Silver [1]	Canada	11.2	12.5
13	6	Barrick Gold	Canada	17.3	12.5
14	13	Volcan Cia. Minera	Peru	11.3	11.1
15	15	Zinifex	Australia	11.0	9.7
16	16	Codelco [4]	Chile	8.9	9.2
17	17	Newmont Mining [2]	USA	8.5	9.2
18	18	Cia. Minera Ares [1]	Peru	7.9	7.6
19	19	Boliden AB	Sweden	7.7	7.3
20	21	Goldcorp [5]	Canada	6.6	7.2

[1] Primary silver producer based on revenue
[2] Includes equity production from Minera Yanacocha
[3] Merged with Noranda in June 2005; [4] Estimate
[5] Goldcorp acquired Luismin in the merger with Wheaton River in April 2005

Table 2 - World Silver Mine Production (million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Europe										
Poland	30.6	33.8	36.0	35.9	36.7	38.0	38.9	44.2	43.8	40.5
Sweden	7.7	8.5	8.6	8.9	9.5	8.8	9.4	9.9	9.4	9.1
Romania	1.4	1.4	1.2	1.2	1.1	1.2	1.0	0.9	0.9	0.9
Portugal	1.1	1.1	1.0	0.9	0.7	0.7	0.6	0.7	0.8	0.8
Bulgaria	1.1	1.0	0.8	0.7	0.6	0.8	0.8	0.7	0.6	0.7
Yugoslavia (former)	2.9	2.1	1.8	1.0	1.0	0.7	0.6	0.2	0.1	0.3
Czech & Slovak Republics	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Ireland	0.5	0.4	0.3	0.3	0.5	0.3	0.2	0.3	0.2	0.2
Spain	3.3	2.1	1.5	3.8	3.7	1.8	0.4	0.1	0.1	0.1
Italy	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Greece	0.5	1.2	1.4	1.3	1.0	2.0	2.4	0.1	0.0	0.1
Other Countries	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Europe	**50.0**	**52.1**	**53.3**	**54.3**	**55.0**	**54.7**	**54.7**	**57.4**	**56.2**	**52.9**
North America										
Mexico	81.3	86.1	86.4	79.8	84.3	88.7	88.3	82.6	82.6	92.3
United States	50.5	70.1	66.2	62.7	63.7	55.9	43.4	39.9	40.2	39.2
Canada	39.9	39.0	36.4	37.5	37.7	40.7	44.1	41.0	41.6	34.1
Total North America	**171.7**	**195.2**	**189.0**	**180.0**	**185.7**	**185.3**	**175.9**	**163.5**	**164.4**	**165.6**
Latin America										
Peru	63.3	66.8	65.1	71.7	78.4	86.0	88.8	93.9	98.4	102.6
Chile	36.8	35.1	43.1	44.4	39.9	43.4	38.9	42.2	43.7	44.3
Bolivia	12.3	12.4	13.1	13.6	14.9	12.2	14.9	15.8	14.0	12.8
Argentina	1.0	1.1	2.2	3.3	3.3	5.6	4.3	4.7	4.9	5.2
Honduras	1.2	1.5	1.5	1.6	1.7	1.6	1.8	1.7	1.6	1.8
Brazil	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3
Dominican Republic	0.5	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Other Countries	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4
Total Latin America	**115.8**	**117.8**	**125.9**	**135.4**	**138.8**	**149.4**	**149.3**	**159.0**	**163.3**	**167.5**
Asia										
China	39.0	40.7	43.6	48.0	51.3	55.6	52.9	58.8	63.2	64.7
Indonesia	7.6	8.1	10.0	8.7	10.0	12.0	10.7	9.6	8.6	9.9
Turkey	2.9	2.9	2.8	3.5	3.5	3.7	3.7	3.6	4.0	5.2
Iran	2.2	2.4	2.5	2.5	2.7	2.6	2.6	2.6	2.7	2.6
India	1.1	1.6	1.7	1.9	1.8	1.7	1.9	1.9	2.1	2.1
Japan	2.9	2.8	3.0	3.0	3.3	2.6	2.6	2.5	2.4	1.7
Papua New Guinea	1.9	1.6	1.9	1.9	2.4	2.2	2.1	2.0	1.7	1.6
Mongolia	0.9	1.0	1.1	1.1	1.0	1.2	1.1	1.1	1.2	1.2
North Korea	1.3	1.2	1.0	0.8	0.7	0.6	0.7	0.8	0.8	0.8
Thailand	0.2	0.1	0.1	0.2	0.2	0.2	0.7	0.6	0.5	0.6
Saudi Arabia	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.6	0.5	0.4
Philippines	0.8	0.6	0.6	0.6	0.7	1.1	0.3	0.2	0.3	0.2
Malaysia	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Other Countries	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2
Total Asia	**61.8**	**63.9**	**69.2**	**72.8**	**78.1**	**83.9**	**79.8**	**84.5**	**88.2**	**91.3**
Africa										
Morocco	6.4	8.4	9.8	8.9	9.3	9.1	8.5	6.2	6.7	7.4
South Africa	5.5	5.2	5.1	4.9	4.6	4.1	3.8	3.5	2.5	2.8

Table 2 - World Silver Mine Production (million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Dem. Rep. of the Congo	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.2	1.1	1.8
Namibia	2.1	1.2	0.4	0.0	0.5	0.6	0.6	0.9	0.9	1.0
Zambia	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Zimbabwe	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8
Total Africa	**15.0**	**15.8**	**16.2**	**14.7**	**15.3**	**14.7**	**13.9**	**12.8**	**12.3**	**14.1**
Oceania										
Australia	32.5	35.6	47.2	55.0	65.1	63.3	66.8	59.9	71.4	77.4
New Zealand	1.0	1.0	0.8	0.8	0.7	0.9	0.9	1.0	1.0	1.0
Fiji	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Total Oceania	**33.5**	**36.7**	**48.1**	**55.8**	**65.8**	**64.3**	**67.8**	**60.9**	**72.5**	**78.4**
CIS										
Russia	24.4	20.9	19.5	19.8	20.2	20.8	24.8	34.0	37.5	42.2
Kazakhstan	15.5	14.1	17.0	20.6	28.6	30.2	27.3	25.8	22.6	25.9
Uzbekistan	2.2	2.5	2.6	2.0	2.0	1.7	1.6	1.7	1.9	2.2
Armenia	0.9	1.0	1.0	1.1	1.1	1.2	1.3	1.3	1.3	1.2
Tajikistan	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Kyrgyzstan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total CIS	**43.1**	**38.6**	**40.2**	**43.7**	**52.1**	**54.1**	**55.1**	**62.9**	**63.5**	**71.7**
World Total	**490.9**	**520.0**	**542.0**	**556.7**	**590.7**	**606.4**	**596.5**	**601.0**	**620.4**	**641.6**

mining within silver-rich ores at Abyz and Artemyevskoe explained the bulk of the country's respective year-on-year improvements.

Offsetting the gains described above, lower output was noted, in order of increasing magnitude, in the United States, Bolivia, Poland and Canada. Canada generated the bulk of last year's losses, accounting for 52% of the gross decline in global mine production. Mine closures and reduced output at Eskay Creek, where reserves are expected to be exhausted by 2008, explained much of the fall. Elsewhere, Poland's KGHM reported substantially lower by-product silver at the company's copper operations, while in the United States and Bolivia losses were modest at a respective 1.0 Moz (30 t) and 1.1 Moz (35 t).

North America

The Mexican mine production series in this edition of the *World Silver Survey* has been revised in the light of a point of clarification from the National Statistics office (INEGI) with regards to imported (silver bearing) concentrates. Basis the new series, **Mexican** silver mine production registered a robust 12% increase in 2005 to reach 92.3 Moz (2,870 t). One of the biggest contributions to the rise was made by Industrias Peñoles, where silver output was 7% higher year-on-year at 47.4 Moz (1,475 t). There were noteworthy gains at the group's giant Fresnillo mine, which benefited from the effects of a completed expansion in September 2004, as well as at Tizapa and Sabinas, where combined year-on-year production gains totalled 0.82 Moz (25 t).

Elsewhere, Pan American Silver's La Colorada mine registered a sharp 52% improvement compared to the previous year to attain 3.1 Moz (96.2 t). The increase was explained by the start of production within the oxide portion of the mine which reached full capacity in the second quarter 2005. Additional support was provided by gains at Grupo Carso's Tayahua mine and at Luismin's operations. The improvement at the latter, which is wholly owned by Goldcorp, was concentrated at the group's San Dimas mine, where the operation benefited from improved infrastructure and, as a result, better access to higher ore grades.

Partly compensating for the described growth, there were year-on-year losses generated at Peñoles' Naica, where lower ore grades and reduced availability explained the shortfall, and at Hecla's San Sebastian. Mining at San

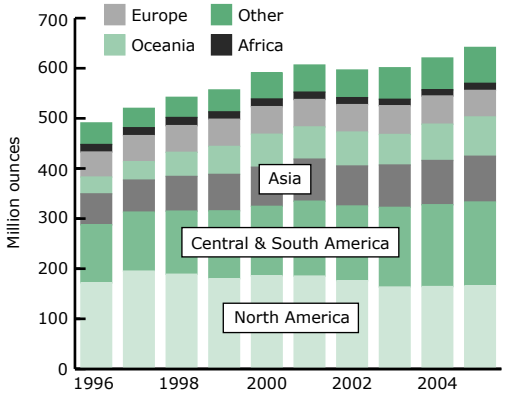
Sebastian's Francine vein was completed at the end of the first quarter and at the Don Sergio vein by end-October. Over a mine life of a little more than four years, San Sebastian generated 11.2 Moz (348 t) of silver.

Silver output in the **United States** declined a fraction in 2005 to reach an 18-year low of 39.2 Moz (1,220 t). Last year's modest 2% fall in production was due to a combination of factors, with growth at Bingham Canyon and Lucky Friday being offset by losses at Galena and Montana Tunnels. Concerning the country's gains, one of the biggest year-on-year rises was recorded at Hecla's Lucky Friday mine. Higher output was partly due to the ongoing development of the new 5900 level, which began to make a modest contribution towards the end of last year. Full production from the new level should be attained during the second half of 2006, with anticipated output in the current year of more than 3.0 Moz (93 t), ramping up to 4.0 Moz (124 t) in 2007.

At Bingham Canyon, a 10% hike in silver output was explained by higher throughput at the plant and a 6% rise in average silver grade. Countering the improvements, there were substantial losses reported at Coeur's Galena mine where production was adversely affected by reduced access to areas of the mine under redevelopment and more modest falls at Montana Tunnels where open pit mining was suspended on October 21st 2005.

Canada suffered a sharp decline in silver production in 2005, with a year-on-year decrease of 7.5 Moz (234 t). The cut left the country's full year figure at an 11-year low of 34.1 Moz (1,061 t). Mine closures and a decline at the country's largest silver producing mine, Eskay Creek, explained the majority of the fall. Concerning closures, ore depletion at Breakwater Resources' Bouchard-Herbert and Aur Resources' Louvicourt resulted in the respective closure of these operations on February 20th and July 12th 2005 with combined year-on-year losses totaling a modest 0.4 Moz (14 t). Further reductions were reported at Agnico-Eagle's LaRonde mine where a 10% decline in average grade contributed to a 15% decrease, or 0.9 Moz (27 t) cut in payable metal produced. Eskay Creek accounted for the bulk of Canada's drop, with output at the mine down by over 30% year-on-year to just over 10 Moz (311 t). The decline was in line with expectations and reflects the processing of lower ore grades as the mine approaches the end of its reserve life, currently timetabled during 2008.

World Silver Mine Production



Central and South America

The world's leading silver producer, **Peru**, registered the fourth largest year-on-year increase, amounting to 4.2 Moz (132 t), which left the country's production total at 102.6 Moz (3,192 t). On a company basis, the strongest improvements were noted by Minera Antamina (+16%) and Minera El Brocal (+29%). Minas Buenaventura's production from their wholly owned operations increased by 6%, with the bulk of the growth coming from the significant Uchucchacua, as well as the smaller Julcani mine. Combined, the two underground primary silver mines produced 11.5 Moz (358 t), making the company Peru's largest producer, before considering their holding in other companies including Minera Yanacocha and the Colquijirca lead/zinc operation. At the country's other leading producer, Minera Volcan, production fell by a modest 1%, with gains at San Cristobal and Cerro de Pasco more than offset by a hefty decline from the Andaychagua operation.

At Antamina, production was significantly improved for the full year, following lower levels of output during stripping activities of lacustrine sediments in 2004. The mine is owned by BHP Billiton (33.75%) and Falconbridge (33.75%), with minority shares held by Teck Cominco (22.5%) and Mitsubishi (10%). Growth was augmented by higher silver output from the country's largest gold mine, Yanacocha. Owned jointly by Newmont and Buenaventura, the mine recorded a greater than 0.9 Moz (28 t) improvement, primarily through an increased volume of ore processed.

Keeping part of the substantial gains in check, output at BHP Billiton's Tintaya mine fell by 16% as a consequence

of a temporary shutdown in May/June 2005 at a time of civil unrest in the region.

Chilean output recorded its third consecutive year of modest improvement in 2005, with production up by a marginal 1% to stand at 44.3 Moz (1,379 t). Meridian Gold's El Peñón primary silver mine reported a 15% increase to the year's production. Open pit mining was concluded in the third quarter, but Meridian has continued to increase underground production capacity through the year. A significant further gain came from a 14% improvement to silver output from BHP Billiton's majority-owned Escondida copper mine, while an additional contribution was seen from the re-start of operations at Kinross and Bema Gold's Refugio (gold) mine during the fourth quarter 2005. Offsetting part of the above increases, a significant 32% reduction was noted at Placer Dome and Kinross' La Coipa, as well as more modest declines at Coeur d'Alene's Cerro Bayo and Breakwater Resources' El Toqui.

Silver production in **Bolivia** fell by 8% to total 12.8 Moz (399 t) in 2005. Of the country's silver output, the majority originates from the private company, Glencore's Bolivian base metals division, Sinchi Wayra (formerly Comsur). While two expansion possibilities are understood to be in the pipeline, the company had a weaker year for silver, with combined output from the Bolivar and San Lorenzo mines down by roughly 20% year-on-year. Following the cessation of mining at Inti Raymi's Kori Kollo in Bolivia during October 2003, commercial production resumed from the Kori Chaca pit in the third quarter of 2005, the result being significantly improved production from the leach pads.

Argentina recorded a modest 7% rise in output to 5.2 Moz (162 t). Coeur d'Alene's primary silver Martha mine headed the gains with an improvement of 22%. Argentinean output was further aided by the commencement of Barrick's Veladero in September 2005.

Asia

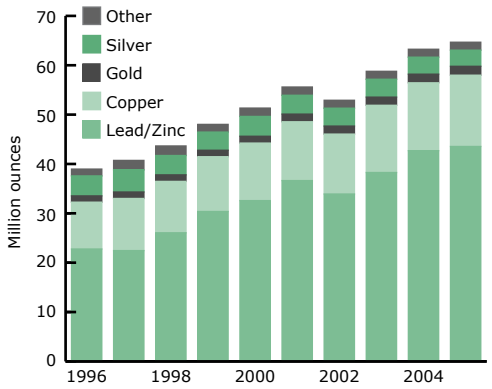
Mine production in **China** is thought to have increased by a (relatively) modest 2% year-on-year to stand at 64.7 Moz (2,011 t), representing approximately 71% of Asian mine output. Primary mine production, which constituted just over 5% of the country's domestically mined silver, is considered to have fallen a fraction in 2005, partly brought about by a number of mine closures. These included the Fengning and Pengjiagou primary silver mines, as well as a relatively sharp decline to production from the Wanquiansi gold/silver mining company, all of which are located in the Hebei province. Regarding silver as a lead/zinc by-product, which constitutes the most significant sector for China's silver production, strong performances were reported by the Mengzi, Fankou and Huangshaping mining companies. Overall, results were partly offset by lower base metal (and hence proportionately silver) output at, among others, the Chenzhou Quiaokou and Baiyin non-ferrous operations.

Indonesian production in 2005 was 9.9 Moz (308 t), representing a robust 16% increase against 2004. The improvement was chiefly due to higher output at the giant copper-gold Grasberg mine, where silver volumes were up by 50% compared to the previous year. Offsetting the boost provided by Grasberg, there was a 17% decline in silver generated at the country's gold mines. The completion of processing at Kelian on February 7th 2005 accounted for a part of the category's year-on-year decline. **Turkey** neared Indonesia's absolute increase and bettered the country's rise in percentage terms with an impressive 29% rise in silver volumes. Within Turkey's headline gain, a particularly strong performance was noted in the primary sector.

Oceania

Australian production stood at 77.4 Moz (2,407 t) in 2005, representing a 5.9 Moz (184 t) improvement year-on-year. A part of the increase was attributed to a 6% rise in (payable) silver volumes reported at BHP Billiton's Cannington mine. This result was chiefly explained by better haulage efficiencies, which assisted a 6% increase in ore milled. Reinforcing the advancement

Chinese Silver Mine Production by Source Metal



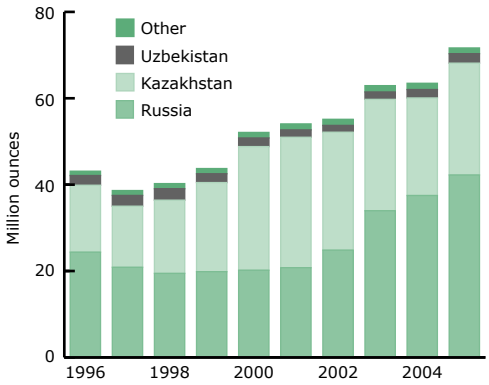
made by Cannington, further production gains originated at Xstrata's Mt Isa, where better mining rates and higher head grade saw output rise by 0.8 Moz (24 t). At Xstrata's McArthur River mine, for which the company acquired the residual 25% equity from ANT Minerals in December 2005, production increased by 40% in like-for-like terms, totaling 1.8 Moz (57 t). As of October 2005, development work has been initiated to convert the underground mine into an open cut operation. Output at Perilya's Broken Hill property, whose reserves and production were acquired by Coeur d'Alene in 2005, meanwhile, was essentially flat year-on-year at 1.9 Moz (59 t). **New Zealand's** contribution remained approximately constant at a total of 1.0 Moz (32 t) last year.

CIS

In its eighth year of consecutive growth, silver output in the CIS was measured at 71.7 Moz (2,229 t). Of the total, 59% was generated in Russia with a further 36% accounted for by Kazakhstan. The 5% balance chiefly originated from Uzbekistan and Armenia. In **Russia** silver mine production posted another year of strong growth with output registering a 13% gain year-on-year to attain 42.2 Moz (1,314 t). Higher volumes were partly explained by increases in both copper and lead/zinc metal production, although the country's leading primary silver producer, Polymetal, registered the strongest rise. The company's silver output improved by just less than 10% year-on-year to reach 18.9 Moz (589 t), the hike primarily due to increased production capacity at the Dukat deposit.

Silver output in **Kazakhstan** posted an impressive 3.3 Moz (103 t) increase to reach a three-year high of 25.9 Moz (805 t). The improvement was headed by a recovery at copper-silver producer Kazakhyms, with more modest support from lead-zinc-silver producer Kazzinc. The former reported a 15% increase in silver production chiefly explained by the start of mining silver-rich ores at the Abyz and Artemyevskoe mines. Kazzinc, meanwhile, announced silver production (excluding toll refining – the precious metal refinery has a capacity of 11.3 Moz, 350 t, per annum) at 5.4 Moz (167 t), representing a 10% increase year-on-year.

CIS Silver Mine Production



Europe

Poland's KGHM Polska Miedź, Europe's largest producer of silver, reported a 7% decline in volumes year-on-year to reach 40.0 Moz (1,244 t). The company generates silver as a by-product of copper mining at Lubin, Rudna and Polkowic-Sieroszowice. In 2005 copper content in the ore declined by 4% year-on-year and despite better recoveries and a decrease in losses in end waste, production of copper in concentrate registered a modest decline. Lower average grades were also responsible for the notable decline in silver output in the country. In **Sweden**, the region's only other silver producer of note, output registered a modest 2% decline to attain 9.1 Moz (284 t). The country's most important silver producer, Boliden, reported higher production in the Skellefte field (which includes the Kristineberg, Renström, Petiknäs, Maurliden and Storliden mines), although gains here were offset by losses at the open pit Aitik mine, situated near Gällivare and at Garpenberg. Lastly, it is worth mentioning that, in **Greece**, operations recommenced at the Stratoni mill in September 2005 (idled since January 2003).

Africa

African silver production enjoyed a robust 15% rise year-on-year to reach a four-year high of 14.1 Moz (439 t). The continent's three largest producers, namely, Morocco, South Africa and the Democratic Republic of the Congo (DRC) all reported better volumes. **Morocco**, which accounts for just over half of the region's total, registered a 10% gain to attain 7.4 Moz (231 t). The improvement was explained by higher output at Société Métallurgique d'Imiter's Imiter mine. In **South Africa,** the increase was due to higher by-product silver generated at the country's base metal operations, while in the **DRC** an increase at Anvil's open pit copper operation, Dikulushi, was behind an impressive 61% year-on-year rise in the country's total.

Outlook

• ***Growth in mine production expected to slow in 2006, with lower output at established mines partly offsetting production at new mines.***

Following two years of strong growth, mine production in 2006 is expected to post a more muted gain of around 1% or 6.4 Moz (200 t) year-on-year. Although a number of new mines should drive production somewhat higher, a large part of the increase is likely to be offset by reductions at a handful of the world's larger silver producing operations including year-on-year losses anticipated at Freeport's Grasberg, BHP Billiton's Cannington, Barrick's Eskay Creek and Polymetal's Lunnoye. Concerning new mines, a full year of production from Barrick's Lagunas Norte and Veladero mines, which started operations in Q2 2005 and Q3 2005, should respectively contribute additional silver volumes to Peru and Argentina. In Mexico, meanwhile, Gammon Lake's new Ocampo mine is forecast to contribute 6.6 Moz (205 t) of silver in its inaugural year of operation. Lastly, the Vysokovoltnoye gold and silver heap leach project in Uzbekistan (located within Amantaytau Goldfields' license) made its first pour in October 2005 and is expected to generate 2.5 Moz (78 t) of silver in 2006.

Modest contributions are also expected from Macmin's Twin Hills mine in Australia where commissioning of the crushing circuit and electro-winning plant is scheduled for July/August and at Pan America's Alamo Dorado mine in Bolivia, which is expected to start production in the fourth quarter of 2006.

Growth in 2007 is anticipated to be much stronger, with a full year's contribution from Alamo Dorado and a batch of new mines including Coeur d'Alene's San Bartolome in Bolivia (6.0 Moz - 8.0 Moz or 187 t - 249 t per annum), Minefinders' Dolores in Mexico (5.8 Moz, 180 t, per annum), and lastly, Apex Silver's San Cristobal project in Bolivia, which is in construction and currently on time to commence operations in the second half of 2007. At design capacity, the mine should generate 22.3 Moz (694 t) of (payable) silver per annum during its first five years of operation.

In relation to the outlook for global mine production - and a topic that is not widely debated - is the impact that this may have on the world's refining capacity. Consider, for example, that over the last ten years, mine production of silver has increased by just over 150 Moz (4,665 t), while recycling from scrap materials has risen by almost 30 Moz (933 t). As a result, silver refineries around the world are now out turning nearly 30% more silver than a decade ago. However, in contrast to this, the last ten years have seen a number of silver refinery closures, and, although some expansions have occurred (most notably in China), the refining industry as a whole now operates less capacity than it once did. Furthermore, the composition of the world's silver refining capacity has changed as well, with a much greater proportion now integrated with base metal operations.

As average utilization levels have improved, the availability of spare capacity in silver refining has not only declined but has arguably become less flexible. In the years ahead, this is likely to be taxed still further with higher mine production forecast in 2006 and more notably in 2007/2008. Beyond that, from 2009 there is the prospect of up to 30 Moz (933 t) per annum of by-product silver from Barrick's Pascua Lama gold project in Chile/Argentina. In this environment, it will be of increasing strategic importance for mining companies to secure long term access to appropriate silver refining capacity, both for existing and envisioned production. At the same time, the world's major silver refiners will be faced with investment decisions over capacity expansions and process flexibility together with questions concerning the longer term evolution of mine production and recycling volumes in the years ahead.

By-Product Analysis

• ***Silver output from primary mines increased by a hefty 8% year-on-year and accounted for 29% of the world total.***

• ***By-product output at copper and lead/zinc mines both registered 3% increases year-on-year, while silver generated at gold operations declined by 5%.***

Primary silver mines generated an estimated 29% of global mine production in 2005, or 188.2 Moz (5,855 t). The result, representing an 8% rise year-on-year, was chiefly due to record performances at Fresnillo and Cannington. The base metal sector also posted improved results, with silver attributed to copper and lead/zinc operations both registering increases of 3%. The only

Average Prices of Source Metals

	2001	2002	2003	2004	2005	Change y-o-y
Lead ($/t)	476	453	516	888	976	10%
Zinc ($/t)	886	779	828	1,048	1,382	32%
Copper ($/t)	1,578	1,558	1,780	2,868	3,684	28%
Gold ($/oz)	271	310	363	409	444	9%

Source: LME, GFMS

World Mine Production of Source Metals

(Thousand tons)

	2001	2002	2003	2004	2005	Change y-o-y
Lead	2,997	2,831	3,099	3,133	3,308	6%
Zinc	8,935	8,904	9,579	9,792	10,008	2%
Copper	13,637	13,581	13,680	14,508	14,910	3%
Gold (tons)	2,621	2,589	2,593	2,464	2,519	2%

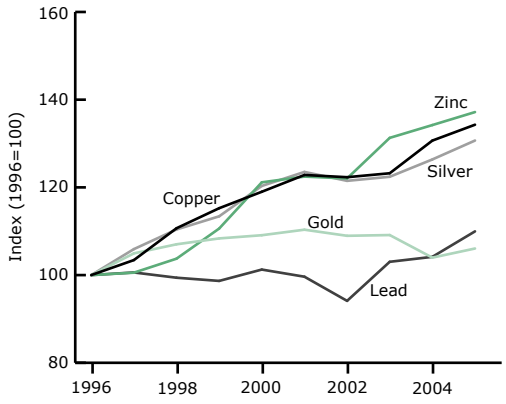
Source: ILZSG, ICSG, GFMS

decline of note was reported in the gold sector where secondary silver output dropped by a significant 5% year-on-year to reach 74.2 Moz (2,308 t), or 12% of global silver production. Further data on silver supply by source metal are shown in the table on page 28.

The base metals continued to enjoy bull market conditions in 2005, a trend carried over to the early part of 2006. One surprising aspect was the relatively weak demand conditions seen last year, with the notable exception of China. Prices were supported by continued investment activity from the long side, by a myriad of supply disruptions, and in some cases by a structural shortage of production capacity reflecting the low prices and lack of investment earlier this decade.

The supply tightness has been a particular feature of the zinc industry that has been reflected in changes to treatment charges, which have again moved firmly in the favor of the mining companies. Annual contracts in 2006 were set at $128 with a basis $1,400/ton. Using an equivalent base of $1,400, last year's outcome was $190. The spot treatment charge confirms the tightness in the concentrate market with some deals being concluded at close to negative terms.

Source Metal Mine Production



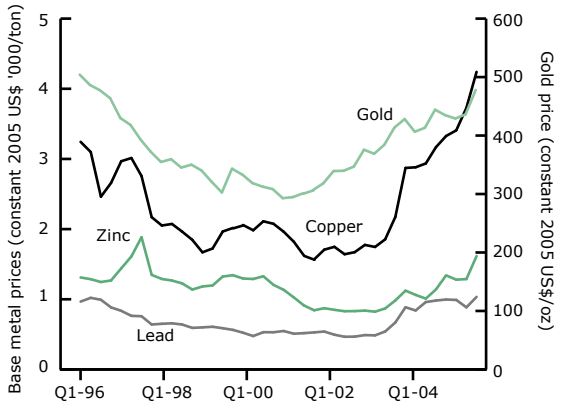
Source: ILZSG, ICSG, GFMS Metals Consulting, GFMS

Global **zinc** mine production increased by just 2.2% in 2005 to 10.008 million tons, which represented the second year in succession of growth in the order of just 2%. Such was the tightness at the concentrate stage that refined zinc production actually fell last year. A number of factors suggest only modest additions to zinc mine supply in 2006 and 2007. Many of the projects being developed are small in scale, such as Breakwater Resources' Langlois mine in Canada, which has a capacity slightly in excess of 50,000 tons per annum. Others are in areas of high, or increasing, political risk such as Mehdiabad in Iran, Duddar in Pakistan, and Dairi in Indonesia.

Crucially from the silver market's perspective, many of the additions to zinc capacity that are underway have no silver values. Hindustan Zinc will shortly complete a brownfield expansion program that will take capacity to 400,000 from 230,000 tons per annum. Recently Teck Cominco announced the restart of the Lennard Shelf operation in Western Australia, which was closed in late 2003. Hudson Bay Minerals plans to reopen the 60,000 tons per annum Balmat zinc mine in the United States, idled since 2001.

High **lead** prices have seen a revival in the lead mining sector that, with the exception of China, has been in decline for much of this decade. In 2005, concentrate production outside of China rose for the first time since 2000, increasing by 7.2% to 2.290 million tons. However, similar to the situation pertaining to the zinc market highlighted above, much of this expansion has little or no impact on the silver market. The largest increase to lead mine supply in 2005 took place in Australia, where output rose by 11.3% to 715,000 tonnes. In turn this primarily reflected the commissioning of the Magellan mine in

Source Metal Prices (real terms)



Australia by Ivernia Inc in 2005. Output last year was 31,300 tons, which should increase to 80-85,000 tons as the mine moves towards its 100,000 tons per annum capacity. The mine however does not yield any silver.

There are signs that the expansion in Chinese lead concentrate production is accelerating after a number of years of sluggish growth. Last year mine output in China grew by just 2.1%. Initial figures for the first quarter of 2006 suggest that lead concentrate output increased by 16.8% year-on-year to 131,800 tons. Given the structural shortage of mine capacity in the country, China remains a large importer of concentrate. In 2005 it imported 567,000 tons of lead-in-concentrate, up from 454,000 tons in 2004 and 153,000 tons at the beginning of the decade.

At one stage it appeared that higher supply would bring the bull market for **copper** to an abrupt end. Global mine production increased by 6.1% in 2004 to 14.508 million tons. With a number of expansions due onstream, and the return to normal operations at the giant Grasberg mine, copper concentrate was expected to post further sharp gains. However mine production grew by just 2.7% last year to 14.910 million tons. The copper mining sector continued to be plagued by technical problems, strikes and lower ore grades.

Many of these problems have been carried over to 2006. Strikes have emerged in Mexico and Peru. In Chile, production growth is being hindered by lower grades – part of this reflects the mining of molybdenum rich sections of the ore bodies to take into account the exceptionally high molybdenum price. However structural problems associated with water supply problems and

Silver Output by Source Metal

	2004 Output	% of Total	2005 Output	% of Total	Change y-o-y
Primary	173.8	28%	188.2	29%	8%
Lead/Zinc	204.1	33%	209.9	33%	3%
Copper	159.9	26%	164.5	26%	3%
Gold	77.9	13%	74.2	12%	-5%
Other	4.7	1%	4.6	1%	-1%

declining average grades are also limiting production growth. The somewhat unexpected curtailment to copper supply has seen spot treatment charges fall dramatically from around $200/ton in mid 2005 to under $100/ton in the second quarter of 2006. As such, GFMS Metals Consulting now forecasts 3.7% growth in global concentrate output in 2006 compared to an initial projection of 5.4% growth.

Production Costs

• ***Weighted average cash costs increased by $0.67/oz, but due to the higher average silver price, cash margins were steady at $4.03/oz.***

Industry average cash costs jumped by a sizable 24% or 67 cents per ounce year-on-year, to $3.28/oz. The sample volume of the analysis totaled 85.3 Moz (2,653 t), representing 13% of silver production or 45% of primary output in 2005. In the majority of cases, production is costed on the basis of the primary revenue product, so where silver is a by-product, meaningful comparisons cannot be made. Importantly, while the hike in cash costs was significant, producers' simple cash margins were essentially constant, having contracted by just two cents per ounce to $4.03/oz, due to the 10% year-on-year improvement in the silver price.

Tabled on page 29, industry cash costs ranged from a low of $0.54/oz at Coeur d'Alene's Cerro Bayo, to $8.37/oz at Galena. In the *World Silver Survey's* inaugural cash cost curve, with one exception, rises were relatively consistent across the costs spectrum.

Although costs in general were seen to increase due to the higher price of fuel and mining consumables, the rises were, to a certain degree, kept in check by the significantly increased value of by-products. In

Silver Mine Production Costs

		2003	2004	2005
Cash costs:	**highest**	$5.01	$6.23	$8.37
	lowest	($0.25)	$0.21	$0.54
	weighted average	$2.17	$2.61	$3.28
Average spot price		$4.88	$6.66	$7.31
% output with costs > spot price		3%	0%	2%
Sample size (million ounces)		81.8	80.8	85.3

some instances, year-on-year costs actually improved. For example, at Cerro Bayo higher gold credits were the sole reason for the mine's 47% reduction in cash costs. Elsewhere, at Pan American Silver's Morococha, a combination of higher silver production and a three-fold rise in revenues from lead, zinc and copper output resulted in a 42% improvement in cash costs at the mine.

Total production costs were also higher year-on-year, by an average of 65 cents per ounce at $4.32/oz. Part of the rise was due to a reserve write off and subsequently increased depreciation charges at La Colorada.

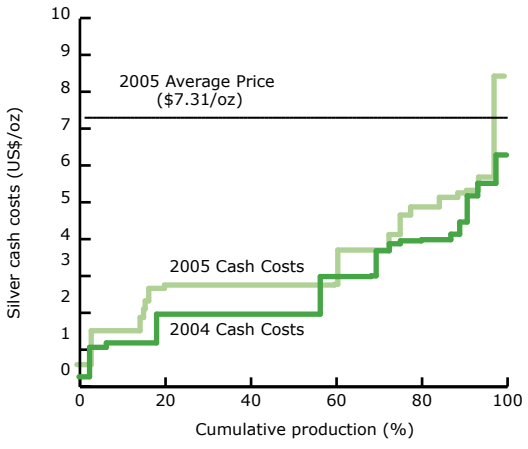
Producer Hedging

• ***The delta-adjusted hedge book at end-2005 was calculated at 76.6 Moz (2,383 t), equivalent to roughly 12% of global mine production and representing a 15.1 Moz (469 t) increase from the revised position reported at end-2004.***

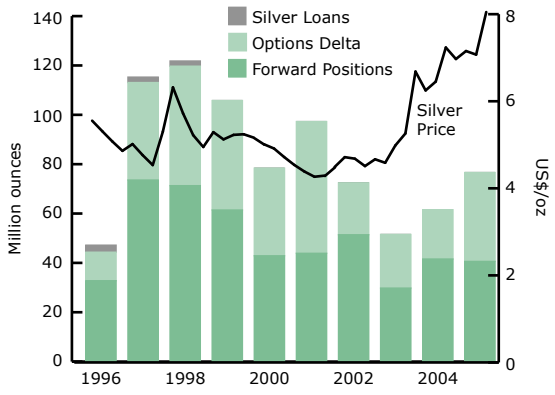
The nominal global silver hedge book amounted to 128.8 Moz (4,008 t) at end-2005 and was composed of: forwards 40.6 Moz (1,263 t) and (net) options 88.2 Moz (2,744 t). Within the latter category, sold calls and purchased puts contracts dominated the book, with the former amounting to 47.2 Moz (1,469 t), while bought puts were measured at 45.8 Moz (1,425 t). Nominal committed volumes, therefore, (the sum of forward sales and sold calls) totalled 87.8 Moz (2,732 t), representing a 15% increase against the comparable position at end-2004. The year-on-year growth was solely due to increased options hedging as the outstanding forward commitments actually registered a modest decline, with sales having fallen by just over 2% year-on-year.

In delta-adjusted terms, the steep change in the silver price towards the end of last year had a marked impact on the valuation of the contracts and hence the implied delta against the outstanding options positions. The delta against the sold call contracts, for instance, more than doubled compared to the figure at end-2004, while the delta against the purchased put contracts was slashed by roughly two-thirds. As a result, and despite an increase in the nominal volume of purchased put contracts described above, the delta hedge against the purchased puts actually declined by 55% year-on-year (as the puts moved further out, or out of-the-money). The delta hedge against the sold call contracts, in contrast, expanded by a factor of three due to the combined effects of a increase in nominal terms and an increase in the delta due to the higher valuation price (as the sold call contracts moved into, or further into-the-money). As at end-2005, the delta-adjusted hedge book stood at a provisional 76.6 Moz (2,383 t) compared to (a revised) 61.6 Moz (1,914 t) as at end-2004.

Silver Cash Costs



Producer Hedging: Outstanding Positions



Sensitivity of the Options Book (Moz, end-2005)

Move in Volatility (%)	Move in Silver Price ($/oz)				
	-6	-2	0	2	6
4	40.2	30.4	36.1	43.6	46.4
2	40.3	29.8	35.9	43.7	46.5
0	40.4	29.2	35.7	43.9	46.6
-2	40.5	28.5	35.5	44.0	46.7
-4	40.7	27.8	35.4	44.2	46.8

Twelve-month Hedge Conditions*

	2002	2003	2004	2005
Spot Price	$4.60	$4.88	$6.66	$7.31
Libor	2.2%	1.4%	2.1%	4.0%
Lease Rate	1.2%	0.7%	0.9%	1.8%
Contango	1.0%	0.7%	1.2%	2.2%
Forward Price	$4.64	$4.91	$6.74	$7.47
Premium	$0.04	$0.03	$0.08	$0.16

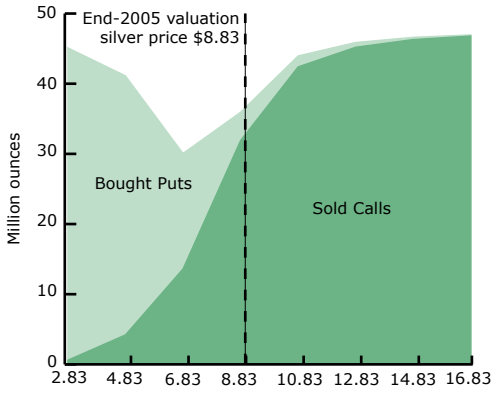
*12-month averages

To illustrate the sensitivity of the options portion of the silver hedge book to changes in the spot price, selected outputs from the Brady Trinity™ integrated trading and risk management system are presented in the table and accompanying chart on this page. As can be seen in the risk matrix table, the options portion of the hedge book at end-2005 was measured at 35.7 Moz (1,111 t). With a $6 increase in the spot price (from the end-2005 valuation price of $8.83), the position expands by a substantial 30% to 46.6 Moz (1,449 t). An accompanying 4% rise in volatility sees the position decline modestly to attain 46.4 Moz (1,443 t) while a 4% drop in volatility leaves the book a fraction higher at 46.8 Moz (1,456 t).

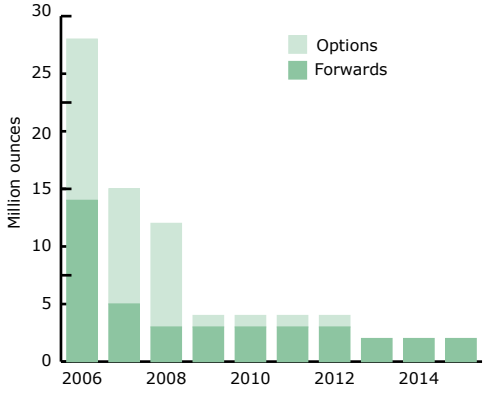
Concerning the graph, the delta-adjusted position has been charted against changes in the spot price, the responsiveness of which is solely the result of changes in the delta of the options contracts. To illustrate the broadly polar response of the delta against the sold calls and bought puts to changes in the spot price, the modeling has been split on a contract basis. As the price increases (in $2 increments) from $4.83 to $14.83, the sold call delta hedge increases from 4.2 Moz (132 t) to 46.3 Moz (1,440 t), while the bought put delta hedge declines from 36.9 Moz (1,148 t) to 0.3 Moz (10 t). The delivery profile of the outstanding delta-adjusted hedge book is illustrated in the chart below. One of the most striking features of the chart is the concentration of commitments in the near-years. For example, 72% of the outstanding silver hedge book (compared to only 52% in the gold hedge book) is scheduled to be delivered against by end-2008. A further noteworthy observation is the composition of the hedge book in comparison with the gold book. At end-2005, for example, forward sales accounted for 77% of the delta-adjusted gold book, against only 53% of the comparable silver book.

New hedging in 2005 was evident in all three of the major hedging groups, namely, the base metal, gold and primary producers. In the gold sector, Bema Gold reported the largest addition with a hedge against anticipated production at its Kupol project in Russia. In the base category, Xstrata and Breakwater both added cover during 2005 and lastly in the primary sector, it is worth mentioning the new hedge related to the financing requirements of Apex Silver's San Cristobal project in Bolivia.

End-2005 Delta Adjusted Options Position



Silver Hedge Book Delivery Profile (Delta-Adjusted)



5. Supply from Above-ground Stocks

- ***At 222.8 Moz (6,931 t), supply from above-ground stocks rose marginally in 2005.***

- ***The rise was due to higher producer hedging, scrap supply and government sales, partly offset by an increase in implied net investment.***

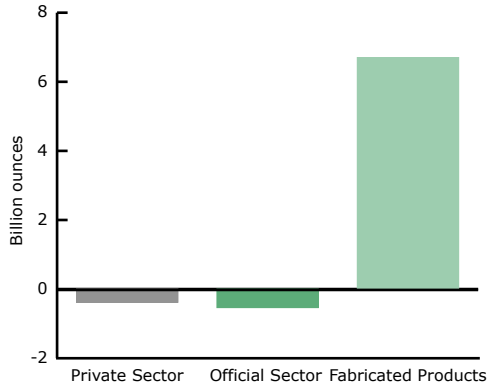
- ***The marginal growth in net government sales in 2005 was the result of falling sales from China and Russia being replaced by disposals from India.***

- ***Silver scrap supply rose moderately, mainly due to a price-related increase in Indian recycling.***

Overview

The different sources of supply of silver to the market can be broadly divided into two categories, namely supply from new mine production and supply from above-ground stocks. Supply from above-ground stocks consists of scrapped fabricated products plus the release of metal from private as well as government-owned silver bullion stocks. Mine production, which is discussed extensively in Chapter 4 of this *World Silver Survey,* stood at 641.6 Moz (19,954 t) in 2005, equivalent to 74% of total supply over the year, unchanged from its share in 2004. (Note: basis the definition of supply in Table 1 on page 7 mine production's share in 2005 was 70.4%.) The remaining 26% was accounted for by silver sourced from above-ground stocks of the metal. The figure includes the impact of changes in the producer hedge book and implied net (dis)investment, as both are essentially either inflows into or out of above-ground stocks of silver.

Changes in Above-ground Stocks (1996-2005)



Supply from Above-ground Stocks

(Million ounces)

	2004	2005
Implied Net Disinvestment	-38.7	-47.5
Producer Hedging	10.0	15.1
Net Government Sales	66.5	68.0
Sub-total Bullion	37.8	35.5
Scrap	181.2	187.3
Total	**219.0**	**222.8**

The accompanying table illustrates the net contribution to supply from each of the components included in the above-ground stocks category, namely implied net (dis)investment, net producer hedging, government sales of silver bullion and scrap supply.

Regarding the net impact of changes in the producer hedge book, it is important to note that the bullion involved in related transactions is almost entirely provided from private sector stocks (in contrast to gold, where most metal is sourced from central bank holdings). In 2005, the 15.1 Moz (469 t) addition to the producer hedge book partly offset the 47.5 Moz (1,478 t) of implied net investment, resulting in a 32.4 Moz (1,009 t) net inflow into privately held bullion stocks.

At 68.0 Moz (2,114 t), net sales from government silver stocks were up by a shade from their 2004 level. These sales accounted for 7% of total supply in 2005, down from an 8% share in 2004. To put these figures into perspective, they compare to net official sector sales providing 16% of global gold supply in 2005.

Looking at the breakdown of the global net government figure, sales from both China and Russia saw a marked decline, which was more than offset by the appearance of official silver bullion sales from India. As is discussed in detail later in this chapter, 2005 was the first year since 1999 when China did not account for the bulk of government sales.

Combining changes in government and privately held stocks, the overall decline in bullion stocks seen in 2005 is estimated at 35.5 Moz (1,105 t), down slightly from our revised estimate for 2004. This fall was the result of higher implied net investment more than offsetting increases in producer hedging and net government sales.

The other component of silver supply from above-ground stocks is scrap supply. The bulk of silver scrap supply comes from the recycling of photographic materials, with recycled electronic and other industrial products and scrapped jewelry and silverware providing smaller contributions. GFMS estimate scrap supply increased marginally in 2005 to 187.3 Moz (5,826 t).

In contrast to, for example, gold, silver scrap supply is largely price inelastic. This is due to most scrap coming from the recycling of products whose price is significantly higher than the value of the small amount of silver they contain per unit (for instance, photographic film and electronic products). Thus, the amount of silver recovered from these products tends to be related to non-price factors. These factors include the performance of the relevant market, environmental legislation and general trends in industrial output.

The exception to the rule is provided by India and some of the Middle Eastern markets where stocks of low-margin silver jewelry and coins are important. Indeed, a rise in Indian jewelry scrap accounted for the bulk of the moderate increase in overall scrap supply recorded during 2005. In fact, had Indian scrap supply not risen by 5.7 Moz (177 t), the continued secular decline in photographic scrap (driven mainly by slumping sales of color film) would have resulted in lower overall scrap supply last year, in spite of the rise in the silver price.

Identifiable Bullion Stocks

In our analysis of identifiable bullion stocks, GFMS include inventories for which sufficient evidence is available to form a statistical picture. The data described in this section therefore excludes the large amount of silver bullion held in non-recognized depositories or by private individuals. These additional stocks - for the most part very widely dispersed - cannot be accurately quantified. The table on page 33 as well as the chart below illustrate the levels at which identifiable bullion stocks stood at year-end. As one can see, 2005 saw such stocks experience a further decline from their end-2004 level.

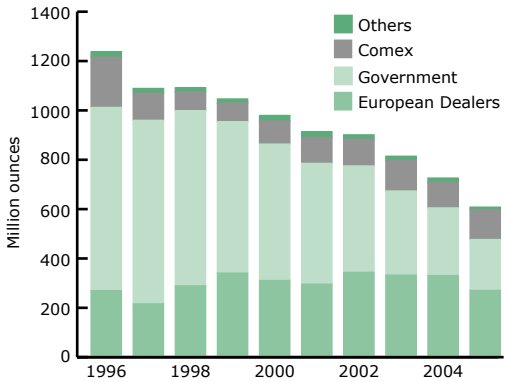
In aggregate, identifiable silver bullion stocks fell by 117.9 Moz (3,666 t) in 2005. This is a significantly higher number than the 35.5 Moz (1,105 t) implied figure shown in the table on page 31. Part of the 82.4 Moz (2,561 t) difference between the two is likely to have been related to the 38.7 Moz (1,203 t) increase in lending that we estimate took place last year. Furthermore, it is possible that some of the bullion that was released from identifiable sources was moved to non-identifiable stocks held by private individuals and non-reporting institutions.

The individual components of our identifiable bullion stocks series are discussed in more detail below.

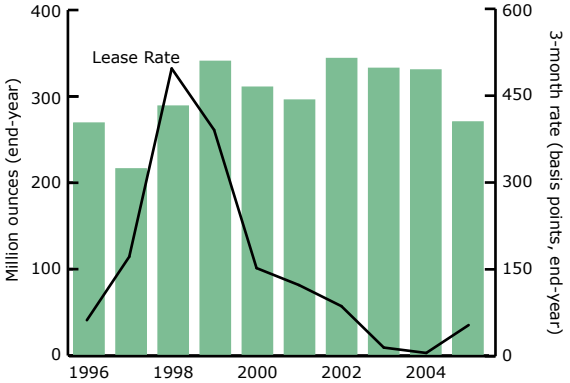
European Dealers' Stocks

For over a decade GFMS has conducted a confidential survey of bullion stocks held in European dealers' vaults and has reported an aggregate end-year total for such stocks in the *World Silver Survey*. At the end of 2005 these stocks had collectively fallen by some 60 Moz (1,870 t) compared to their end-2004 level. This decline followed three years of relative stability, during which stocks had remained within the 310-345 Moz (9,600-10,700 t) range. This decline may appear somewhat counter-intuitive given positive investment demand in

Identifiable Bullion Stocks



Bullion Stocks in Dealers' Vaults in Europe



Identifiable Bullion Stocks

(Million ounces)

	end-2004	end-2005
European Dealers	330.6	270.5
Comex	103.6	120.0
Government	274.2	206.3
Other Stocks	17.3	11.2
Total	**725.7**	**607.9**

Comex Silver Stocks (end period)

(Million ounces)

	Q1	Q2	Q3	Q4
2003	108.7	107.2	105.9	124.3
2004	122.1	118.4	107.8	103.6
2005	103.6	104.7	116.7	120.0
2006	125.0			

2005. However, not all that demand would have been reflected in movements in European dealers' stocks. Furthermore, other factors could have offset some growth in stocks due to investor demand. For example, one apparent reason why stocks fell last year was the large rise in bullion exports from the United Kingdom to India (not all of which metal would have been consumed). In addition, a rise in borrowing demand and, perhaps, some silver being stored in other locations (not covered by our survey) would seem also to have contributed to the registered decline in stocks.

Comex Stocks

At end-2005, registered and eligible silver stocks held at Comex depositories stood at 120.0 Moz (3,732 t), up by 16.4 Moz (510 t) on their end-2004 level. The increase would seem in part to have been driven by the premium the silver price quoted on the Comex bore over the London fixing for much of the year. This resulted in some metal, that would otherwise have been exported to Europe, being delivered onto the New York exchange.

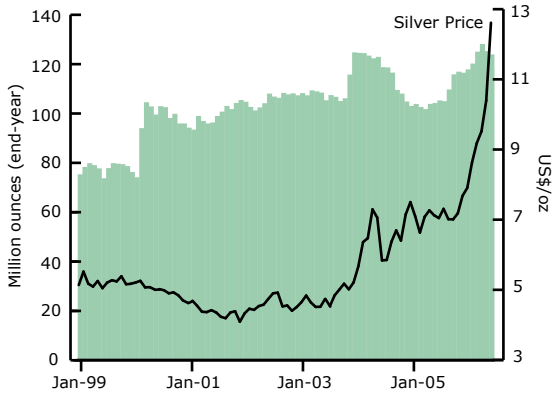
In addition to the rise in overall stocks held at Comex depositories, some change of ownership between individual depositories took place over the year. More specifically, stocks held at the Delaware depository fell by 6.5 Moz (201 t), while those held at the other three depositories rose by a combined 22.8 Moz (710 t).

Government Stocks

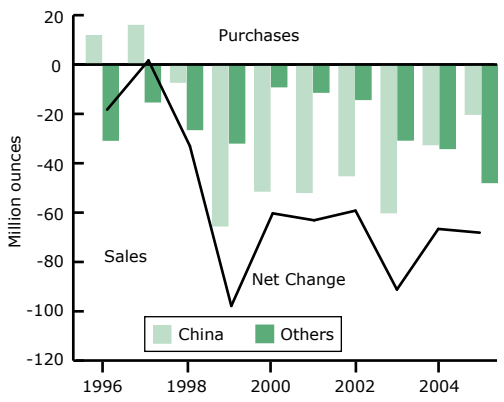
GFMS estimate that government silver stocks totaled around 206 Moz (6,415 t) at the end of 2005. This is a conservative figure and has been revised upwards in the light of continued substantial sales last year. There is very little published data on official holdings of silver bullion and therefore any estimates are subject to a significant margin of error. Nevertheless, we are far more confident when it comes to measuring the annual changes in stocks, as shown in our government sales data. In 2005, net sales came to 68.0 Moz (2,114 t). The vast majority of these sales came from just three countries: India, China and Russia. In addition, a small contribution was made by ongoing disposals of old coin stocks by several European countries.

India announced in 2004 that it would commence sales from government silver stocks during the course of the following year. In 2005 approximately 39 Moz (1,200 t) of silver was sold into the local market from a stockpile that is understood to have totaled around 67.5 Moz

Comex Warehouse Stocks



Changes in Government Stocks



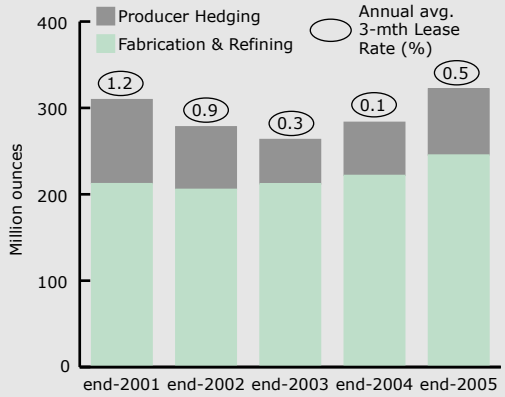
Silver Borrowing

Silver is borrowed for two main purposes: to fund short selling or producer hedging and to provide the necessary liquidity for the efficient functioning of the physical market, for example, the fabrication and refining of metal. Unlike the gold market, there is no obvious lender of last resort in the shape of the central banks, with most silver borrowed from unallocated private stocks.

In 2005 the lending/borrowing market expanded in size, reaching an estimated end-year volume of 322 Moz (10,000 t). Part of this growth was accounted for by the 15.1 Moz (469 t) expansion in the producer hedge book (described in detail in Chapter 4). A larger contribution, though, came from higher fabrication-related borrowing. This, in turn, had several causes. The first was the simple expansion in fabrication last year, especially its industrial component, which necessitated a higher level of work-in-progress funding. Second, the rising price and considerable price volatility encouraged increased borrowing from fabricators to manage their exposure. Third, we believe that consignment-related borrowing probably increased, especially for stocks destined for the Indian market. (As explained in Chapter 6, by the end of the year imported bullion stocks in India had risen to a high level.) And, finally, fear that the silver exchange traded fund (ETF) would lead to higher leasing rates encouraged precautionary borrowing in the latter part of 2005 (and, still more so, in early 2006).

The underlying growth in borrowing referred to above coupled with increased demand ahead of the launch of the ETF led to a significant increase in silver borrowing costs last year. For example, the 3-month leasing rate averaged 0.5% in 2005 compared to, the admittedly very low, 0.1% recorded the previous year. And, silver ETF and price factors have been even more important in the first few months of 2006. A surge in borrowing demand has resulted in 3-month leasing rates averaging an noteworthy 2.3% over the first four months of the current year. Indeed, further out along the curve – where liquidity is less abundant – in recent months leasing rates have occasionally risen sufficiently to push silver into a modest backwardation. It may seem perverse that leasing rates have risen in an environment of strong investment demand because this usually would be expected to boost the amount of liquidity available to the market and result in lower borrowing costs – the experience in 2004 and early 2005. However, if investment demand is in the form of allocated metal that cannot be lent to the market – the case with the silver ETF – then this can, conversely, reduce liquidity and push up the cost of borrowing.

Silver Borrowing



(2,100 t) at the start of the operation. However, these stocks were of variable quality, with some of them fairly low grade. Indeed, we estimate that the amount of fine silver disposed of last year came to more like 25.7 Moz (800 t), a third less than the headline figure. Sales from the government stockpile have continued during the first few months of 2006.

Since 1999 China has been the single most important source of government silver sales. In the last two years, however, supply from Chinese stocks has moderated. For instance, GFMS estimate that in 2005 disposals came to just over 20 Moz (625 t), less than a third of the peak annual levels seen in the past. It would seem that China's stocks are now much reduced and that sales have recently been more opportunistic, driven by the silver price rising to fresh highs and, in part, stemming from call options coming into-the-money.

Price has also been a factor when it comes to Russian government stock sales. It is no coincidence that supply from this source has re-emerged in the 2003-05 period on the back of higher silver prices. In 2005 sales are estimated to have totaled a little over 19 Moz (600 t). Although no figures are published on state holdings of silver, we believe that these may still be substantial and expect supply from this source to continue at a fairly high level in 2006.

Other Stocks

The remaining identifiable silver bullion stocks consist of those registered on the Tokyo Commodities Exchange, the Chicago Board of Trade as well as Japanese trade stocks reported by the country's Ministry of Trade and Industry. Due to their small volume, all these appear in the table on page 33 and in the chart on page 32 aggregated under the "Others" category. Over the course of 2005, these stocks collectively declined by 6.1 Moz (190 t) to reach an end-year figure of 11.2 Moz (347 t).

Scrap

• ***Global scrap supply edged higher in 2005, largely due to growth in end-year jewelry recycling, which outweighed the fall in photographic scrap.***

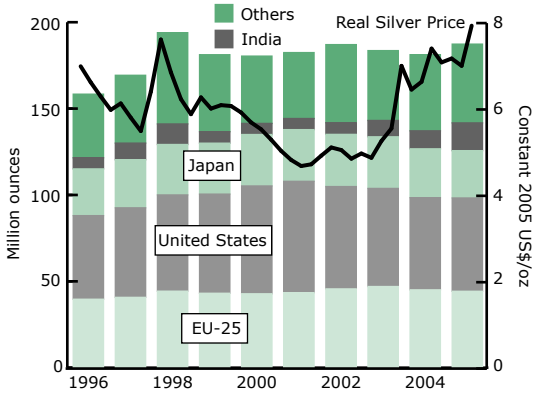
Last year's gain of 3% in scrap to 187.3 Moz (5,826 t), the most significant annual rise since 1998, may seem modest in the light of the silver rally. However, the upward move in silver did not fully materialize until the fourth quarter, at which time scrap supply from silverware and jewelry did increase. Nowhere was this more pronounced than in India whose annual scrap supply was some 54% higher. However, the response last year was not limited to price-sensitive, low markup, countries; Italy, in particular, witnessed the second highest growth rate in its recycled silver in 2005, largely due to elevated levels of trade destocking in the face of higher prices.

As for industrial scrap, the move in recent years towards tighter environmental legislation might suggest that this sector also made an important contribution to last year's rise in global scrap. Although tighter recycling standards, particularly in Europe and North America, have started to have a bearing on recovery rates, rising costs have tempered the growth in industrial scrap. Finally, the decline in photographic output, which has fallen in each of the last six years, has resulted in less recovery from the majority of silver-related uses in this market, the key exception being the motion picture industry.

Looking ahead to this year, the higher silver price is expected to lead to a rise in the quantity of silverware and jewelry being sold back, either by consumers or the retail or wholesale trade. In addition, there is likely to be a further contribution from the industrial sector as higher silver prices offset at least part of the ongoing rise in recovery costs. However, the question remains as to whether the greater contribution from silverware and jewelry, together with industrial, will again be sufficient to offset a further reduction in supply originating from the photographic sector.

Japanese scrap volumes fell by just over 3% in 2005, the third year in a row in which it has declined. As in 2004, the primary driver behind this drop was waning volumes of photographic scrap, in particular from the amateur market but increasingly from the graphics arts sector too. Recovery from other sources, including

World Scrap Supply



electronics, is believed to have increased during the year, offsetting some of the decline in photographic recovery.

In the **United States** last year there was little change in domestic scrap volumes, with 2005's total of 54.0 Moz (1,680 t), just 1.3% higher year-on-year. Although the change may appear modest, the fact that total US recycling increased last year in itself was noteworthy, given the much documented fall in the country's photographic consumption in recent years, with an associated decline in domestic scrap volumes from this sector. In fact, in 2005, scrap recycling from the photographic sector did shrink and last year's reduction marked the fifth year in succession that recovery from this industry has declined in the United States.

However, in 2005 there was a notable rise in scrap originating from the ethylene oxide (EO) sector. As noted in last year's *World Silver Survey*, in 2004 the rate of replacements of spent catalysts fell sharply, compared with the previous year, partly as a result of high product prices in 2004, which meant that it remained profitable to run catalysts even as efficiency rates were deteriorating. However, this recycling could only be delayed for a limited period of time and, as a result, in 2005 there was a wave of replacements, the volume of which is estimated to have offset the fall in photographic scrap supply.

Silver scrap in **India** showed a sharp rise year-on-year in 2005, up from 10.4 Moz (324 t) to 16.1 Moz (500 t). At first sight this would seem to be at odds with the stock build up towards the end of the year and the release of government (mint) silver into the market (see Chapters 5 and 6 for more on this). In addition to this, it is worth bearing in mind that the average silver price was in

Table 3 - Supply of Silver from the Recycling of Old Scrap (million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Europe										
Germany	15.4	16.1	16.4	16.1	16.7	16.8	16.7	19.0	18.3	17.6
UK & Ireland	7.6	8.4	10.8	11.5	10.9	11.1	13.6	13.0	12.4	11.6
Italy	3.5	3.4	4.7	3.4	3.4	3.5	3.6	3.6	3.3	4.3
France	4.5	4.3	4.1	4.0	3.5	3.9	3.9	4.1	3.8	4.1
Netherlands	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4
Austria	1.8	1.8	1.8	1.7	1.6	2.0	1.9	1.5	1.6	1.3
Sweden	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0
Belgium	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.7
Denmark	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.5
Czech & Slovak Republics	0.9	0.8	0.7	0.6	0.6	0.5	0.4	0.4	0.4	0.4
Portugal	0.4	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.4	0.4
Spain	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Finland	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Switzerland	1.7	0.8	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Norway	1.0	1.0	0.8	0.9	1.1	0.7	0.7	0.5	0.3	0.3
Other Countries	1.2	1.2	1.2	1.2	1.1	1.1	1.2	1.1	1.1	1.0
Total Europe	**42.5**	**42.7**	**45.9**	**44.6**	**44.2**	**44.8**	**47.1**	**48.4**	**46.5**	**45.6**
North America										
United States	48.4	51.8	55.7	57.4	62.4	64.5	59.2	56.8	53.3	54.0
Mexico	2.4	4.3	10.6	2.3	1.5	1.4	1.5	1.8	1.9	2.1
Canada	1.8	1.6	1.9	1.6	1.4	1.4	1.4	1.5	1.4	1.5
Total North America	**52.6**	**57.7**	**68.3**	**61.3**	**65.4**	**67.3**	**62.2**	**60.1**	**56.7**	**57.5**
Latin America										
Brazil	1.9	1.6	1.6	1.8	1.5	1.6	1.0	1.2	1.0	1.0
Argentina	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6
Chile	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5
Other Countries	0.7	0.7	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.9
Total Latin America	**3.8**	**3.4**	**3.7**	**3.7**	**3.4**	**3.5**	**2.8**	**3.0**	**2.8**	**3.1**
Middle East										
Turkey	1.9	1.6	1.7	1.4	1.3	1.3	1.4	1.8	1.9	2.1
Saudi Arabia & Yemen	1.3	3.2	2.1	7.5	2.3	0.8	7.2	0.7	1.3	1.6
Egypt	0.7	0.3	0.4	0.3	0.9	1.1	1.3	1.1	1.4	1.4
Oman	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other Countries	0.4	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.5	0.4
Total Middle East	**4.4**	**5.7**	**4.7**	**9.7**	**4.9**	**3.7**	**10.4**	**4.2**	**5.2**	**5.6**
Indian Sub-Continent										
India	6.4	9.6	11.9	6.7	6.4	6.4	6.8	9.5	10.4	16.1
Other Countries	0.2	0.3	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5
Total Indian Sub-Continent	**6.6**	**10.0**	**12.4**	**7.0**	**6.8**	**6.9**	**7.2**	**9.9**	**10.9**	**16.6**
East Asia										
Japan	27.1	27.8	29.2	29.5	29.8	29.9	30.2	29.9	28.3	27.4
China	4.5	4.6	5.8	5.9	6.0	6.2	6.3	6.6	7.7	8.7
South Korea	3.4	3.6	7.8	5.3	5.3	5.5	5.8	6.1	6.3	6.4
Taiwan	0.7	0.8	0.8	0.9	0.9	0.9	0.9	1.0	1.0	1.0
Thailand	0.4	0.8	1.0	0.4	0.3	0.4	0.5	0.5	0.5	0.5
Singapore	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5
Hong Kong	0.3	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Indonesia	0.3	0.4	0.4	0.4	0.5	0.4	0.3	0.3	0.4	0.4

Table 3 - Supply of Silver from the Recycling of Old Scrap (million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Vietnam	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3
Philippines	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Malaysia	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total East Asia	**37.7**	**39.3**	**46.6**	**43.7**	**44.2**	**44.6**	**45.4**	**45.8**	**45.6**	**45.9**
Africa										
Morocco	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.3	0.6
Other Countries	0.7	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.6
Total Africa	**1.1**	**1.1**	**1.1**	**1.1**	**1.1**	**1.1**	**1.0**	**1.1**	**1.8**	**1.2**
Oceania										
Australia	2.3	2.3	2.4	2.4	2.4	2.4	2.3	2.1	2.0	1.8
Total Oceania	**2.3**	**2.3**	**2.4**	**2.4**	**2.4**	**2.4**	**2.3**	**2.1**	**2.0**	**1.8**
CIS										
CIS	7.4	7.1	8.8	7.7	7.9	8.1	8.5	9.0	9.5	10.0
Total CIS	**7.4**	**7.1**	**8.8**	**7.7**	**7.9**	**8.1**	**8.5**	**9.0**	**9.5**	**10.0**
World Total	**158.4**	**169.3**	**193.9**	**181.2**	**180.4**	**182.4**	**187.0**	**183.6**	**181.2**	**187.3**

fact down by around 8% in the first quarter of the year (quarter-on-quarter), which should have resulted in lower scrapping at that time. That scrap rose was a result of rising prices in the final three quarters of the year and some distress selling from areas affected by floods.

The primary driver of higher scrap appears to have been rising silver prices. Clearly the average price of over Rs.11,000 per kilogram did encourage higher levels of scrap generation, especially when this is viewed in light of the fact that only two years previously Rs.8,000/Kg had been a very strong sell signal. (This may appear to contradict the fact that demand rose in 2005 but, as we explain in Chapter 7, offtake increased mainly in the price insensitive areas of the market.) More to the point, scrap volumes escalated rapidly towards year end as silver scaled its peak of well over Rs.13,000/Kg. If it were not for the fact that the average price rose only modestly year-on-year, there is little doubt that much higher volumes would have been recorded.

Although many aspects of the market dynamics in 2005 were "predictable", there were some elements that were not. For example, somewhat counter-intuitively, there were flurries of selling during some of the bigger price retracements, suggesting that some in the market wanted to cash in on (still) higher prices fearing that they had missed the real highs. Market participants' commentary suggests that many were offloading silver fearing that the market would go down further. In addition, the heavy rains in some parts of India appear to have affected crop production, resulting in a mild up tick in distress sales.

Despite the price rise, **European** scrap actually fell in 2005, if only by 2% to 45.6 Moz (1,418 t). This was largely due to the importance of industrial uses, whose scrap is rarely price sensitive, and to lower levels of photographic scrap, though the scale of the drop from this source was often surprisingly restrained. There were, however, marked differences between countries. **Italy**, for example, saw a marked rise of almost 30% in scrap in 2005. The gains were particularly strong in the closing months of the year, were largely in response to the price rise and came chiefly from silverware and jewelry. In contrast, photographic scrap fell noticeably. Imported scrap may also have slipped a little. A fair portion of this is still composed of autopastes though there were further quantities of old coin from western Europe. A rise in supplies from old coin scrap also contributed much to the 8% rise in **French** scrap last year, a change that was very much ascribed to the rally in the euro price of silver.

In contrast, scrap in **Germany** overall fell by a modest 4%. This was partly as a result of lower yields from electronic and photographic sources and a decline in gross volumes from the latter. There was also a slight drop in coin scrap though this change should prove much more marked in 2006. **UK** scrap behaved similarly, declining by 7% last year with much of the drop being driven by lower photographic volumes.

6. Silver Bullion Trade

- ***The most notable year-on-year change in 2005 was seen in India, where the country's bullion imports were some 70% higher, compared with a year ago, although the total still remained below the levels achieved at the turn of the millennium.***

- ***A recovery in bullion imports into the United States accounted for the double-digit rise recorded in 2005.***

- ***Gross exports of silver bullion from China grew notably in 2005 although, excluding round tripping with Hong Kong, net Chinese bullion exports are estimated to have actually fallen year-on-year.***

Europe

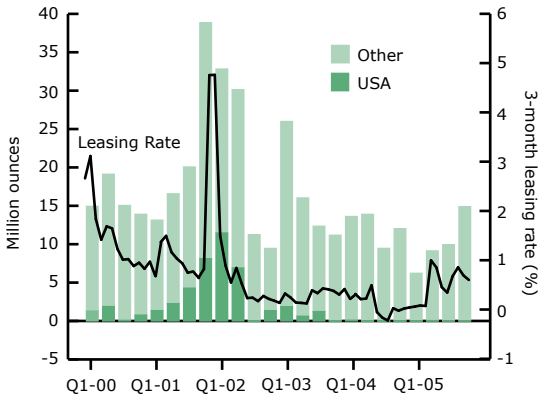
As a result of its sizable fabrication (in 2005 this stood at 203.5 Moz (6,331 t) and a far smaller contribution from scrap of 45.6 Moz (1,418 t) and mine production, 52.9 Moz (1,647 t), Europe has a significant structural deficit. The substantial imports needed to bridge the gap typically take the form of refined bullion, concentrates or doré and less so old scrap from price sensitive regions. Total extra-regional imports look to have declined somewhat in 2005, chiefly on account of the end to large scale refining in the United Kingdom. Despite that change, the UK remains one of the four largest importing countries, along with Italy, Germany and Switzerland.

Silver bullion exports from Europe are nonetheless substantial, despite this structural deficit, with Switzerland and the United Kingdom accounting for much of this trade (especially on an extra-EU basis). This is largely the result of Zurich and London being major trading centers for physical bullion.

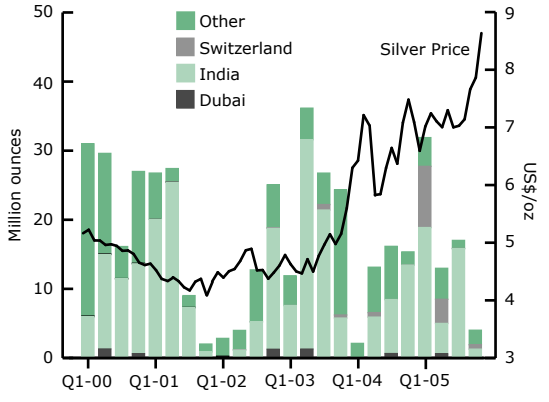
Switzerland's importance is also elevated through it being home to some of the world's largest refineries. These receive sizable volumes of mine output from elsewhere in the world, though these flows in 2005 may have slipped somewhat given market talk of lower receipts from the former Soviet Union. The refineries in turn produce bullion bars and other products for export. These outflows are understood to have fallen quite sharply in 2005, partly as a result of lower offtake from consuming countries such as Italy.

The 18% fall last year in **UK** imports of silver bullion, to its lowest level since 1993, was broadly due to two separate factors. Firstly, the reduction in UK refining capacity, towards the end of 2004, resulted in a sharp drop in doré imports, notably from South America. Secondly, trade with the United States has failed to recover, in the wake of the duties imposed by the European Union (EU) in March 2003, although these were lifted a year later and backdated to January 2004. In contrast, one of the few countries to ship significantly higher quantities of silver to the UK was Russia, whose trade leapt to 23.7 Moz (737 t), from the already elevated levels achieved the previous year. The rise in exports was partly due to higher government sales, combined with the impact of sharply higher domestic mine supply which

UK Bullion Imports



UK Bullion Exports



precipitated a significant rise in Russian exports of refined bullion, although not just to the United Kingdom.

Turning to UK exports, these recovered some of the volume lost in 2004, rising by 41% year-on-year to 65.9 Moz (2,050 t). Despite the increase, total UK silver exports remained some way below the recent high of 99.1 Moz (3,083 t) posted in 2003. The fortunes of UK exports are closely tied to trade with India, although the UK has, in recent years, seen its position as the foremost source of bullion for the Sub-Continent eroded (in part, due to increasing trade between India and China as well as, in 2005, Russia). Even so, last year the volume of UK bullion delivered to India rose by 49%, in the process accounting for nearly 70% of the increase in total UK exports.

Germany looks to have been Europe's largest silver bullion importer in 2005 at 53.4 Moz (1,659 t), with over 60% of the metal sourced from other EU countries and around 30% from Kazakhstan. Bullion exports were also substantial at 50.9 Moz (1,583 t), of which slightly over 80% went to other EU countries. That this could be done in addition to its sizeable fabrication of 41.0 Moz (1,276 t) reflects the contribution to supply from scrap and imported concentrates.

Bullion imports into **Italy** according to the official statistics fell a notable 13% in 2005 to 46.9 Moz (1,458 t), though a review of data from some of the origins suggests the true decline may have been a little steeper. However, bullion exports also fell, and by a yet more marked 25%, such that net imports dropped by a couple of percentage points less than the gross figure.

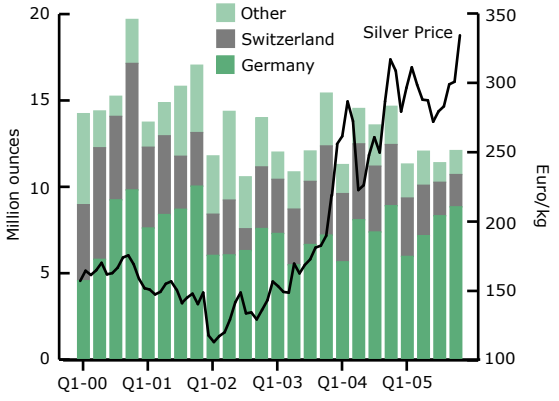
This decline was of little surprise as it reflects the slump in Italian jewelry and silverware fabrication. It cannot be used as a strict guide, however, given the higher contribution to supply from domestic scrap (though imported scrap is understood to have fallen somewhat). It was also of note that the price looked to have had only a limited impact on bullion inflows; the year-on-year drop for the fourth quarter was only slightly steeper than those for the second and third and it was only the first quarter that was more stable, with a 0.3% rise. Within the fourth quarter, however, the year-on-year decline for each month did grow progressively greater (from 12% down in October to 23% lower in December).

The countries of the **Commonwealth of Independent States** (CIS) are collectively significant surplus producers and net exporters of silver to the international market. Between 2002 and 2004, CIS exports roughly doubled and shipments remained at a high level last year. The growth in exports has mainly been driven by higher mine production in Russia, coupled with a renewed wave of government stock mobilization by the same country.

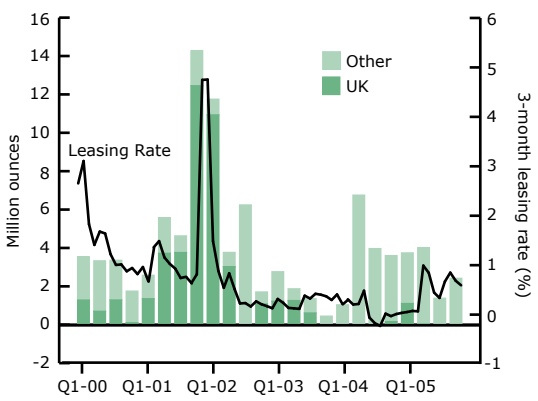
North America

Last year's 11% year-on-year rise in bullion imports into the **United States** effectively represented a return to the levels seen in 2003. In spite of 2004's decline, since 2002, total US imports have remained at elevated levels, in the region of 128 to 148 Moz (4,000 to 4,600 t) per annum, compared with 80 to 106 Moz (2,500 to 3,300 t) brought in during the 1995 to 1999 period. One of the most significant reasons behind this development was the increase in bullion shipments from Mexico, which has largely been due to a rise in imports into Mexico of silver-

Official Italian Bullion Imports



US Bullion Exports



containing base metal concentrates, together with higher primary silver output within the country.

Elsewhere, US shipments from Canada were nearly 9% higher in 2005 but this simply meant a recovery back to the level achieved two years previously. Turning to South America, the region achieved higher exports to the US last year, notably from Peru and, to a lesser extent, Chile. In each case this was largely due to a relocation of mine output, away from Europe, in favor of the United States.

Turning to bullion exports, in 2005 shipments from the United States fell back from their already depressed levels in 2004. Trade with the United Kingdom has in part never recovered from the retaliatory EU duties imposed on a range of precious metal products (which ran from March 2003 to the end of that year). Last year, instead of being exported, it appears that a considerable amount of silver was delivered onto Comex, with end-2005 stocks on the exchange 16.4 Moz (510 t) higher than their end-2004 position.

Middle East and Indian Sub-Continent

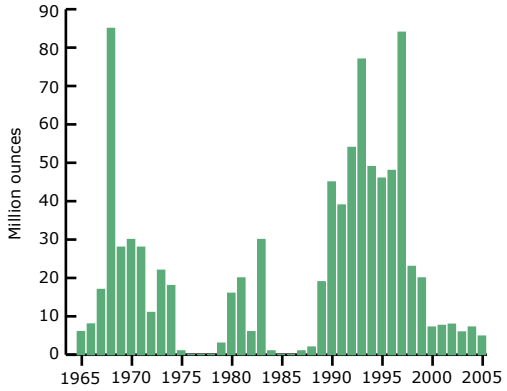
In **Egypt**, official bullion imports during 2005 remained depressed and therefore little changed from a year ago. For much of last year the local silver price matched international silver prices but the lack of a price premium therefore meant that the Egyptian price made no allowance for transport costs, nor the 17% value added tax. This situation therefore discouraged official flows, which meant that the local silverware and jewelry industry relied on flows of unofficial material (together with locally generated scrap supplies).

In contrast, the **Turkish** silver industry is almost entirely serviced by official imports of silver bullion, together with locally generated mine production. Last year, imports of silver through the Istanbul Gold Exchange were little changed on 2004's elevated total, with last year's volume falling by just 1% to 6.7 Moz (208 t). This limited change in imports was slightly surprising, given the weakness in local silverware and jewelry fabrication (see Chapter 7 for more on this), as well as the fact that domestic mine supply is thought to have risen in 2005.

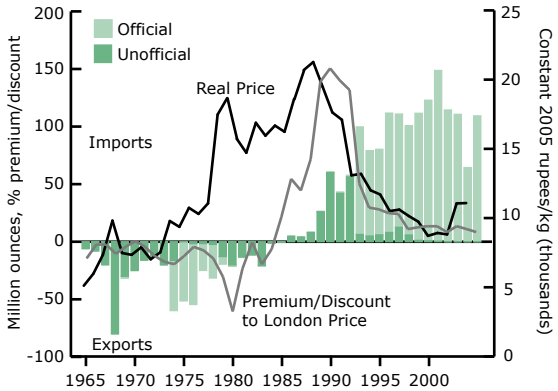
The **United Arab Emirates**, once a major entrepôt for silver bullion trade, again suffered a decline in imports as India sourced more silver directly from Hong Kong and mainland China. Data suggests imports fell sharply in 2005 with shipments from East Asian countries, once a major source of silver bullion shipments, having all but ceased (volumes are a fraction of previous quantities).

GFMS estimates point to gross **Indian** silver imports having risen, by a spectacular 70%, to around 109 Moz (3,400 t) in 2005 (that is excluding exports of bullion under the guise of jewelry; see below for more on this). This increase was in spite of the 4.5% rise in the average Indian silver price and the not inconsiderable 20% intra-year boost in the rupee price of the white metal. At first sight, the rise in imports appears surprising given the price sensitive nature of the Indian market. A cursory glance at demand, however, puts this into context (see Chapter 7 for more on this); jewelry demand was actually quite muted while the non-price sensitive elements of demand such as industrial uses rose markedly.

Dubai Bullion Imports



Net Indian Bullion Imports and Exports



Another supportive factor was the fact that the price early in the year actually fell (the average silver price fell by around 8% quarter-on-quarter in the first quarter of the year), fuelling some speculative purchases. Moreover, much of the price action was only seen in the final quarter of the year and imports remained very robust up until October. Indeed, it was only in the last quarter of 2005 when the silver price averaged over Rs.12,000 per kilogram that imports were choked off dramatically (in December effectively nothing was shipped into the country).

The bullion import/export picture in 2005 has been complicated by a number of factors, including the release of government stocks into the market (which directly substituted for imports), some exports of bullion under the guise of jewelry and the build up of loco-Indian stocks (as discussed below, these have been substantial). Certainly, simply looking at the available metal in the market last year, one would have drawn the conclusion that offtake was substantially higher than what is recorded in this *World Silver Survey*. GFMS data suggests that available metal in the Indian market (including scrap) would have topped the 153 Moz mark (around 4,800 t) in 2005, but that a significant portion of this did not end up in final demand.

Turning to the first of these points, the Indian government announced during the year that it would sell 67.5 Moz (2,100 t) silver in a phased manner from its stocks into the market (see Chapter 5 for more on this). As a result, GFMS estimate that the equivalent of around 25.7 Moz (800 t) of fine silver was released into the market. Most of this was sold at a discount of between Rs.1,000-1,100 per kilogram to the import parity price, substituting directly for imports. Our information is that much of this metal was used directly by the manufacturers of payals (ankle bracelets) and other silver items where quality is not of paramount importance. Some of the metal was sent to Jodhpur (in Rajasthan) for refining into smaller choursa bars and then re-sold into the market.

Secondly, GFMS data suggests that, as has been the case in gold for some considerable time, some silver bullion was exported under the guise of jewelry and coin. While nowhere nearly as important for the supply and demand balance as in the case of gold market, the volumes were material enough to warrant accounting for in our market analysis. As with gold, GFMS do not include this fabrication in the demand numbers because it is, for all intents and purposes, a bullion export.

Indian Bullion Imports

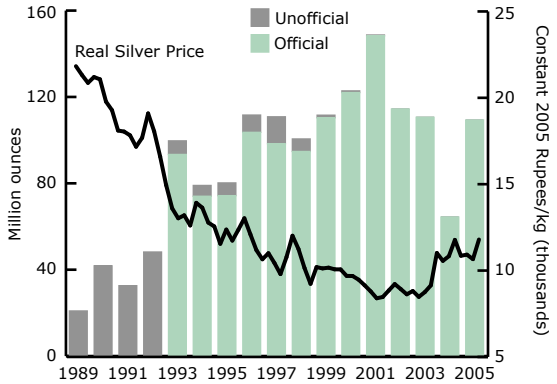
Moz	2001	2002	2003	2004	2005
OGL^	145.5	109.1	107.7	60.3	106.1
NRI^	1.1	0.1	0.1	0.1	0.1
SIL^	0.0	0.0	0.0	0.0	0.0
Replenishment**	1.7	4.8	2.9	4.0	3.1
Sub-total	148.3	114.1	110.6	64.4	109.3
Unofficial	0.4	0.0	0.0	0.0	0.0
Total Imports	148.7	114.1	110.6	64.4	109.3
Local Premium*	12%	7%	12%	10%	7%

* percentage above London price at the official exchange rate (excluding all local duties and taxes)

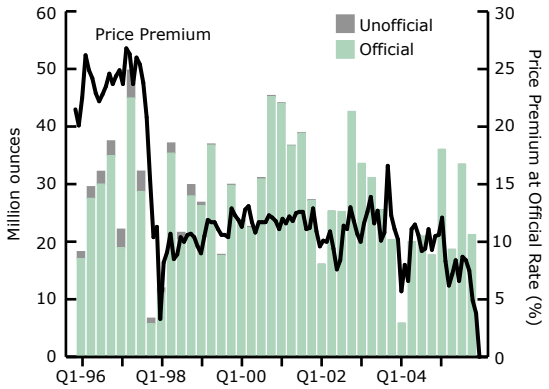
** imports of silver bullion for manufacture and re-export

^ Open General Licence, Non-resident Indians, Special Import Licence

Indian Bullion Imports



Indian Bullion Imports



Finally, the data for 2005 has been distorted by the substantial build up of silver stocks, particularly in the latter stages of the year. As already noted above, much of the sale of government silver was in the second half of the year, and this saw manufacturers opt for cheaper government material (so-called "mint silver") at this time. From the broader perspective of the importers of silver, the timing of this could not have been worse because it coincided with very large shipments that had been ordered on expectations of substantial demand during Diwali (traditionally a strong time for silver demand). Add into the equation the fact that prices were on the rise at this time, and one had the ideal mix to see stocks begin to rise. And indeed, GFMS data points to huge inventories of imported silver being accumulated from September onwards.

One very clear reflection of how large these were was the fact that importers began to export silver in bar form even though this realized a 2% loss on unrecoverable import duty (with longer dated lease rates rising, and the threat of yet higher rates in the future, some banks, dealers and government agencies decided it was too risky to hold onto large loco-India silver stocks). By the end of 2005, GFMS estimate that silver stocks with banks and agencies across India were around 38.6 Moz (1,200 t). Moreover, an additional 9.6 Moz (300 t) of "mint silver" was also in stock at the year-end.

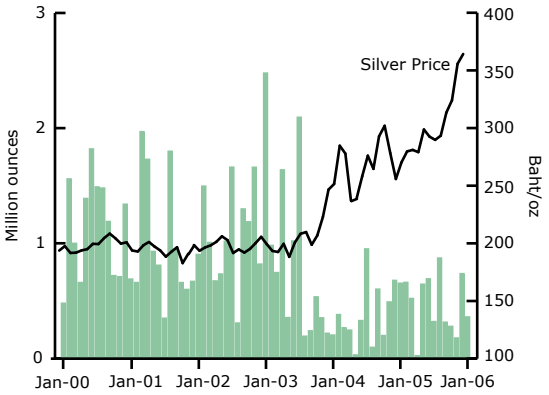
As far as the source of imported metal is concerned, this saw few changes in spite of the substantial increase in volumes. GFMS data suggests that the United Kingdom and China/Hong Kong accounted for well over 70% of the total (compared to around 80% in 2004). The other substantial source of metal was the CIS.

East Asia

Since 2000, the deregulation of the **Chinese** state controlled monopoly for buying and selling of silver has resulted in the rapid expansion of silver exports. The supply of silver has come from a mixture of rising mine production, growth in imported concentrates with a silver by-product credit and, finally, a flood of supply from (mostly government owned) above-ground stocks built up over previous decades.

The growth in silver bullion exports is illustrated by the rise in the level of the annual export quotas issued by the Ministry of Commerce (MOFCOM). In 2000, for example, the quota totaled 13.5 Moz (420 t). However in 2005, MOFCOM issued an export quota for 112.5 Moz (3,500 t) of silver, representing a 15% increase over 2004. Approximately 60% of the 2005 total was granted to producers and the balance to traders, while foreign-owned companies (including joint ventures) obtained 11% of the total. According to official trade data released by Chinese Customs, bullion exports reached 132.4 Moz (4,118 t) last year, a rise of 18% year-on-year, while the value of those exports was reported as reaching just under $1 billion.

Singapore Bullion and Semis Imports



Using GFMS' own calculations, we estimate that Chinese silver supply rose by 13%, with the increase coming primarily from imported sources (concentrates and unwrought) while local mine production rose modestly (refer to Chapter 4) and scrap increased by around an eighth. Recovery from industrial scrap and base metal slags has risen impressively over the past two years as more private producers have expanded their sourcing channels throughout China, driven by expectations of higher silver prices.

Importantly, we believe that bullion exports from the mainland actually fell slightly last year. It is necessary to point out, however, that this takes into account the round-tripping of silver between the mainland and Hong Kong. While the higher silver price did encourage exports, the Value Added Tax (VAT) rebate policy continued, as it has in the recent past, to encourage manufacturers and traders to export crude silver "products" to Hong Kong in order to claim back the 17% VAT, only to then ship the silver back to the mainland again. Overall, we think that around 14.5 Moz (450 t) of silver was round tripped to the mainland last year. In

terms of genuine shipments to the international market, around three quarters of Chinese silver was shipped to Hong Kong, with the remainder mostly being shipped directly to India and Thailand.

Silver imports into **Hong Kong** rose by 47% to 82.8 Moz (2,576 t) in 2005. China dominated the official imports, providing almost 75% of shipments, with an increase of 27% year-on-year to reach 62.1 Moz (1,930 t). European imports were noticeably higher in 2005, although shipments from Australia and South Korea both recorded double digit declines. Interestingly, on the export front, it is worth noting the massive rise in shipments from Hong Kong to India last year. Official data indicates a greater than 100% increase in silver that originated from the mainland. Much of China's silver shipments are exported via Hong Kong which has well established trading routes.

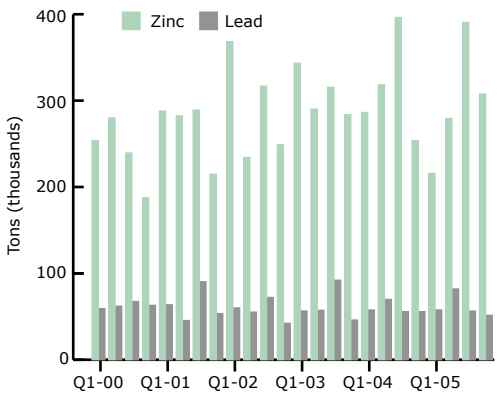
Japanese bullion imports fell sharply in 2005, down by over 28% to 36.7 Moz (1,141 t). As is usual in the case of Japan, these shipments ebb and flow in line with local recovery of metal from domestic sources, imported concentrates and scrap, or if demand is weaker and/or there is a run down in stocks (2004's imports were boosted by the problems at Dowa Mining that year). Last year, the flow of metal from these local sources was effectively flat year-on-year at around 57 Moz (approximately 1,800 t) and demand was up (in spite of falling photographic fabrication), which in the context of lower bullion imports points to a run down in trade stocks.

South Korean bullion imports increased by 6% in 2005 to 4.7 Moz (146 t) while exports grew in a similar fashion to 30.3 Moz (944 t). The rise in exports was a result of the additional output from the two local smelters treating imported base metal concentrates. South Korea continues to be a large domestic user of silver though the volumes required are easily met and surpassed by refined material providing a surplus for international export.

Singapore remains a major conduit for the supply of silver into south east Asia, mainly Indonesia and Thailand, though in recent years the volumes have dwindled as these major manufacturing countries have sourced their feed stock directly from producing nations. However, import volumes rebounded 30% year-on-year in 2005 after a substantial decline the previous year with the increased supply attributable to a return of European bullion imports and an increase in shipments from Australia. Imports fell notably in the second half of the year as silver prices began to follow gold's rising trend.

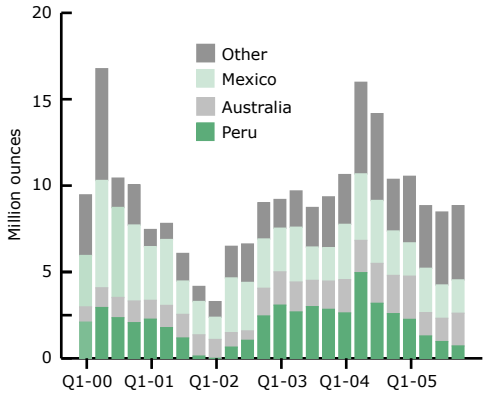
The reduction of import tariffs on silver introduced in 2003 has had a profound impact on the flows of silver into **Thailand** as the official data is now far more in line with actual imports then previously reported, with the majority of fabricators now registering their imports. Local traders reported that bullion is still finding its way across borders in the north but the volumes have dropped significantly since the tariffs were reduced with GFMS estimating the volume of unofficial trade had now reduced to 5-10% of total imports. Total bullion imports fell 4% in 2005 to an estimated 40 Moz (1,244 t) with imports from South Korea falling over 20% for the year and Polish silver also suffering a double digit decline. Official Thai bullion exports fell by nearly a third to 1.6 Moz (50 t) with shipments to Singapore declining by almost 70%.

Korean Lead and Zinc Concentrate Imports



Source: WBMS

Japanese Bullion Imports



7. Fabrication Demand

- ***World silver fabrication rose by 3% in 2005 to a four year high of 864.4 Moz (26,885 t), despite the 10% rise in the annual average price.***

- ***Industrial fabrication contributed most to the increase, with its 11% rise to record levels of 409.3 Moz (12,732 t) - growth that has taken its share of total fabrication to 47% from 37% ten years prior.***

- ***Electrical & electronics demand, with its 10% rise, accounted for much of the industrial category's growth.***

- ***Jewelry & silverware offtake posted a modest 1% gain to 249.6 Moz (7,763 t), though this was still the second lowest total of the past 10 years.***

- ***Indian jewelry & silverware fabrication rose in 2005, partly as its export industry, along with that of China, took market share from the Italians.***

- ***Photographic offtake continued its secular decline due to digital inroads, with the fall accelerating to 9% and cutting demand to just 164.8 Moz (5,126 t) or 72% of its 1999 peak.***

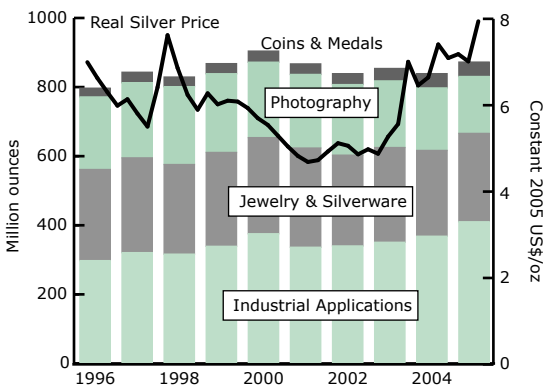
- ***Coins and medals fabrication slipped 4% to 40.6 Moz (1,264 t) as respectable gains for the two largest producers, the United States and Germany, could not counter losses in Portugal.***

The prime change for fabrication in 2005 was the acceleration in growth in industrial offtake to 11%, equating to an extra 41.0 Moz (1,275 t) of demand. Much of this increase came from Japan and the United States but Europe was absent from this developed world growth picture. This was largely due to the relocation of consuming industries to Asia often going hand in hand with the creation of fabrication capacity there to satisfy transplants' needs. As for industrial offtake in the developing world, this often focuses on East Asia. However in 2005, this sector grew far more strongly in India, though some was related to semi-industrial areas.

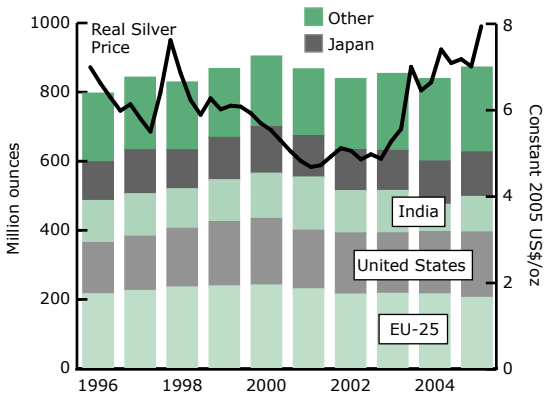
To see a rise in industrial offtake with global GDP growth over 4% should come as little shock. However, to see an increase for jewelry and silverware, even one as small as 1%, might cause some surprise, given the 10% price rise. However, it is important to remember that the price was co-operatively stable for much of the year and that the bulk of consumption takes places in the less price sensitive West, even though increasingly the pieces are fabricated in Asia. This also helps explain why much of the fabrication growth came from China and India and the only substantial loss was in Italy.

Two issues stand out in photographic offtake's steep 9% drop. The first was that US demand did not suffer the double-digit slumps that Europe and Japan saw, due to corporate relocations. The second was the unexpectedly rapid scale of digital inroads in the developing world.

World Silver Fabrication (by category)



World Silver Fabrication (by region)



Industrial Applications

- ***Total global industrial fabrication demand increased by 11% to 409.3 Moz (12,732 t), led higher by strong world economic growth and robust consumer demand.***

- ***India rebounded solidly with a 58% increase last year, while the United States, China and Japan all experienced impressive gains.***

Europe

A common theme to industrial fabrication here is the relocation of factories consuming silver bearing items to lower labor cost countries. At present, much of these relocators' needs continue to be met by exports of semis from western Europe, though, a gulf within the continent is opening up. At the one extreme, there are the multi-nationals who can transfer capacity more easily to distant countries such as China and, once there, a switch to locally fabricated supplies at some point is likely.

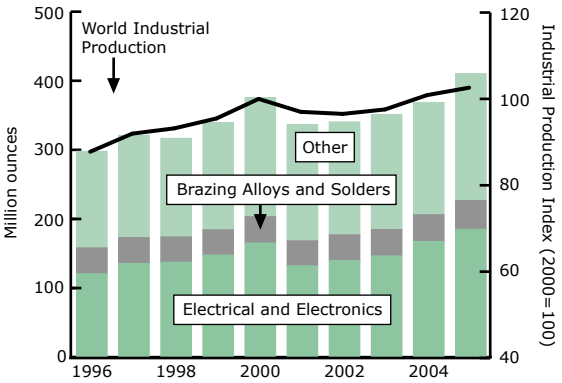
In contrast, small and medium sized manufacturers with the resources or desire to only move to eastern Europe are more likely to continue consuming silver items fabricated in western Europe. Given the greater importance in Germany and Italy of small and mid-sized companies on top of geographical proximity, the pressure on fabrication in such countries is less than in the more westerly EU. Very few silver fabricating EU companies have set up operations in eastern Europe, yet many have established additional (but not replacement) capacity in East Asia, in particular China.

A second theme to industrial offtake is the limited extent to which the silver price is important. There are instances of substitution away from silver, for example in brazing alloys, but this is invariably due to the large gap between silver and base metal prices, not the silver rally. Another example is the switch to aluminum from silver in photovoltaic cells (the pastes for which are largely fabricated in Italy). However, this substitution process has largely reached its technological limits and so silver usage in this booming area should return to growth.

German industrial offtake rose a modest 2% to 23.8 Moz (741.0 t) in 2005, with the gains derived overwhelmingly from the electronics sector. Consumption within Germany looks to have eased slightly, partly due to end user relocation though the sluggishness of the construction sector and the technologically driven decline in the use of contact rivets were also important. There were some areas of growth within Germany, such as high voltage applications. However, more of the increase in offtake was attributable to a rise in exports to other EU countries and to East Asia. Silver's price rise was felt to have had a very limited effect in this area, though the rise in lease rates was seen as more problematic.

Brazing alloy fabrication slipped a fraction from last year's buoyant volumes. This was partly due to thrifting efforts, despite the benefit for silver from the ongoing reduction in cadmium use. Brazing alloys were also a clear example of the diverging impact of consuming industry relocation, namely rising sales to transplanted factories in central/eastern Europe, broadly steady exports to continental EU-15 and a slump in the UK take.

Components of Industrial Applications



EU Industrial Fabrication

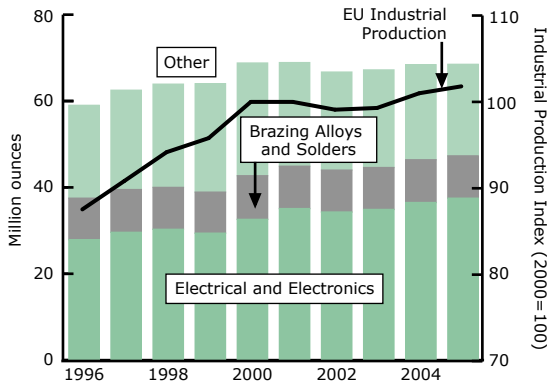


Table 4 - World Silver Fabrication (including the use of scrap - million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Europe										
Italy	52.2	56.5	56.3	62.1	65.2	58.3	55.7	54.6	54.3	49.2
UK & Ireland	34.4	35.5	39.2	39.9	43.2	46.4	43.6	44.6	52.7	47.0
Germany	47.2	47.6	48.4	42.1	40.6	40.4	35.4	39.1	40.3	41.0
Belgium	25.3	27.2	33.8	37.5	35.3	32.1	30.8	29.3	27.6	26.2
France	27.2	28.7	28.7	26.9	29.2	29.2	27.7	26.3	13.0	12.5
Spain	9.3	8.7	8.8	7.5	6.7	5.5	5.2	4.8	6.3	5.4
Poland	3.0	3.4	3.6	3.7	3.9	3.4	3.2	3.8	4.3	4.7
Switzerland	7.8	9.6	10.7	11.1	9.0	3.5	3.4	3.0	3.1	3.3
Greece	4.3	4.5	4.1	4.1	3.3	3.0	2.8	2.9	2.9	2.9
Netherlands	2.5	2.4	2.2	2.8	1.9	1.8	2.1	1.9	2.5	2.2
Norway	1.4	1.5	1.5	3.0	2.9	2.3	1.9	1.9	2.1	1.8
Portugal	2.8	2.9	3.1	3.2	3.5	2.6	1.7	2.7	4.1	1.7
Austria	1.5	1.3	1.4	1.2	1.1	1.1	1.2	1.2	1.3	1.3
Sweden	1.5	1.7	1.4	1.4	1.3	1.0	1.0	1.2	1.2	1.2
Denmark	1.0	1.1	1.0	1.0	1.0	0.9	0.8	0.7	0.7	0.7
Czech & Slovak Republics	0.7	0.8	0.9	0.8	0.8	1.0	0.7	0.7	0.7	0.6
Hungary	0.5	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4
Romania	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Finland	1.0	0.9	0.7	0.7	0.6	0.5	0.5	0.4	0.4	0.4
Cyprus & Malta	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3
Yugoslavia (former)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
Other Countries	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Total Europe	**224.7**	**235.7**	**247.3**	**250.5**	**251.1**	**234.4**	**219.1**	**220.6**	**218.9**	**203.5**
North America										
United States	147.6	157.2	169.7	185.9	192.5	169.6	176.9	175.3	180.3	189.4
Mexico	20.8	23.5	21.9	21.7	17.3	17.1	18.1	20.2	21.9	22.2
Canada	2.7	2.8	3.4	3.5	3.0	2.9	3.1	2.5	3.4	3.6
Total North America	**171.1**	**183.5**	**195.0**	**211.1**	**212.8**	**189.6**	**198.1**	**198.0**	**205.6**	**215.2**
Latin America										
Brazil	8.4	8.4	8.1	7.7	6.8	6.6	6.4	6.6	7.3	7.5
Argentina	3.8	3.8	3.1	2.7	2.3	1.8	1.9	2.3	2.3	2.6
Peru	1.1	1.1	1.1	1.0	1.0	1.0	1.0	0.7	0.7	0.7
Colombia	1.1	1.1	1.1	0.9	0.8	0.7	0.7	0.7	0.7	0.7
Chile	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Ecuador	0.7	0.7	0.7	0.5	0.5	0.5	0.5	0.4	0.4	0.3
Other Countries	0.9	1.3	1.6	1.8	1.1	0.9	0.7	0.9	1.1	1.2
Total Latin America	**16.4**	**16.8**	**16.2**	**15.1**	**12.8**	**11.8**	**11.6**	**12.0**	**12.9**	**13.4**
Middle East										
Turkey	6.7	6.9	6.6	6.0	7.4	5.5	6.8	7.6	8.2	7.3
Israel	3.7	4.0	3.9	3.9	3.6	3.3	3.3	3.2	3.3	3.4
Egypt	2.3	2.1	1.9	2.0	2.0	1.8	1.6	1.8	2.0	1.8
Iran	1.7	1.6	1.3	1.4	1.4	1.5	1.4	1.5	1.5	1.6
Other Countries	1.4	1.7	1.7	1.8	1.9	1.8	1.8	1.8	1.9	2.0
Total Middle East	**15.8**	**16.3**	**15.4**	**15.1**	**16.4**	**13.9**	**14.9**	**15.9**	**16.9**	**16.1**
Indian Sub-Continent										
India	122.2	122.9	114.7	121.5	131.0	154.0	122.5	122.5	79.2	102.9
Bangladesh & Nepal	5.8	6.4	5.1	5.7	6.0	5.9	4.8	4.5	4.2	3.7
Other Countries	2.7	4.1	2.8	3.4	3.2	2.2	2.1	2.1	2.3	2.4
Total Indian Sub-Continent	**130.7**	**133.5**	**122.6**	**130.6**	**140.2**	**162.1**	**129.4**	**129.1**	**85.7**	**109.0**

Table 4 - World Silver Fabrication (including the use of scrap - million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
East Asia										
Japan	112.1	127.2	112.8	122.5	135.0	119.3	118.7	115.9	125.2	128.8
China	28.6	32.2	33.9	33.1	33.6	35.7	42.7	47.2	52.2	55.5
Thailand	27.6	27.1	24.2	25.1	28.5	30.9	32.6	37.1	40.5	39.9
South Korea	18.5	18.6	13.8	16.7	19.6	17.1	17.8	19.2	19.8	20.2
Taiwan	6.4	6.9	6.8	6.7	9.4	8.5	9.0	10.3	11.3	11.7
Indonesia	3.4	4.1	2.7	3.2	3.9	4.3	4.8	4.9	5.4	5.4
Hong Kong	3.7	4.4	3.6	3.9	4.4	3.2	3.4	3.2	3.4	3.5
Vietnam	0.7	0.7	0.6	0.7	0.7	0.7	0.8	0.9	1.0	1.0
Myanmar, Laos & Cambodia	1.1	1.0	0.8	0.9	0.8	0.9	1.0	1.0	0.9	0.9
Malaysia	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.7
Other Countries	0.4	0.3	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.5
Total East Asia	**202.8**	**222.8**	**199.8**	**213.6**	**237.0**	**221.5**	**231.8**	**240.8**	**260.9**	**268.1**
Africa										
Morocco	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.6
Tunisia	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
South Africa	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3
Algeria	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Libya	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total Africa	**1.8**	**1.8**	**1.7**	**1.7**	**1.8**	**1.7**	**1.7**	**1.7**	**1.8**	**1.8**
Oceania										
Australia	5.2	5.2	5.6	5.8	7.0	5.9	5.8	6.2	5.7	3.9
Total Oceania	**5.2**	**5.2**	**5.7**	**5.8**	**7.0**	**6.0**	**5.8**	**6.3**	**5.7**	**3.9**
CIS										
CIS	28.2	27.2	25.4	24.3	24.9	25.8	26.0	28.5	31.0	33.3
Total CIS	**28.2**	**27.2**	**25.4**	**24.3**	**24.9**	**25.8**	**26.0**	**28.5**	**31.0**	**33.3**
World Total	**796.8**	**842.9**	**829.0**	**867.8**	**903.9**	**866.8**	**838.5**	**853.0**	**839.4**	**864.4**

Industrial demand in **Italy** fell a notable 6% to 10.8 Moz (335 t). A fair slice of the decline was due to the intra-EU relocation of fabrication within the electronics sector. Consumption in this area within Italy was hit by the move by consuming industries to, for example, eastern Europe but many of their needs continued to be supplied by pieces fabricated in Italy. Lastly, there was marked weakness in sales for decorative purposes such as plating for silverware and silver alloys for the fabrication of karat gold jewelry.

French industrial fabrication was comparatively stable in 2005, easing just 1% to 10.2 Moz (317 t). The key area of electrical/electronics offtake, for example, was threatened by the shift in consuming industries to East Asia (in particular China) but, at present, these are still being largely supplied by exports of French fabricated items. The only area of overt weakness for industrial demand was at the more decorative end.

The modest growth in the **UK** silver industrial sector, which was seen in 2003 and 2004, appears to have ended last year, with 2005's total effectively unchanged at 16.6 Moz (516 t). Even so, it was of note that industrial demand in the United Kingdom remained about 500 t for the second year in succession. Much of the growth was driven by higher export orders. This was due to robust growth in a number of key consuming markets for silver-bearing industrial products, as well as reflecting a shift from domestic to overseas shipments in the wake of ongoing offshore corporate relocations. Last year, many of these relatively new factories were still serviced from the United Kingdom, although widely held expectations are that, in due course, metal will be sourced from suppliers located in close proximity to the relocated operations. Returning to last year, there appeared to be little material impact from the rising silver price, although higher leasing rates, towards year-end, did begin to affect the ability to finance work in progress.

EU-15 Industrial Production

(Index, 2000=100)

2001	2002	2003	2004	2005
100.0	99.1	99.3	101.0	101.8

Source: OECD

United States Industrial Production

(Index, 2000=100)

2001	2002	2003	2004	2005
96.6	96.2	97.2	101.1	104.5

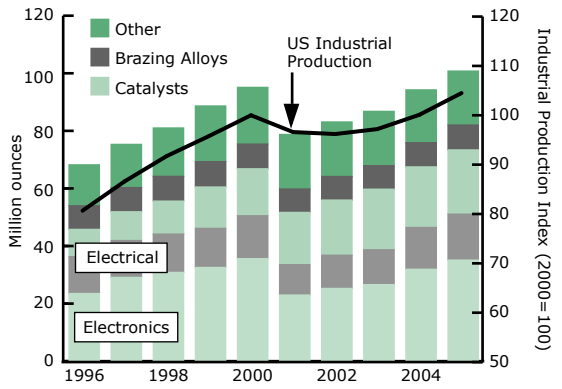
Source: OECD

North America

Last year, industrial demand in the **United States** topped 100 Moz for the first time in GFMS' series (which stretches back to 1990). In doing so, domestic fabrication surpassed 2000's total, which, at the time, had represented a record high, before the slide in US offtake the following year. Since then, the use of silver in industrial applications has been steadily growing and four years of continuous growth have contributed to 2005's record total of 100.8 Moz (3,134 t).

As in recent years, growth in electrical and electronics applications led the way, with a 10% rise in silver demand last year, which took the total to 52.1 Moz (1,622 t). One area to see higher demand was the use of silver in multi-layer ceramic capacitors (MLCCs). As we have discussed in previous editions of the *World Silver Survey*, the early part of this decade saw significant attrition in this industry (and not just in the United States), with respect to precious metals consumption, in the wake of palladium's run up to $1,000. In the last two to three years, the move to nitrogen furnaces, capable of processing base metals, has lessened considerably. Those companies left using silver-palladium alloys can broadly be categorized as small to medium sized enterprises, with limited access to finance that would enable them to switch to copper-nickel products. As well as seeing little move away from precious metals, there appears to have been only a modest progression to higher silver containing alloys (at the expense of palladium). On average, the United States typically consumes alloys in the range of 70:30 to 75:25 silver-palladium compositions (although 80:20 alloys did start to gain greater acceptance last year).

US Industrial Fabrication

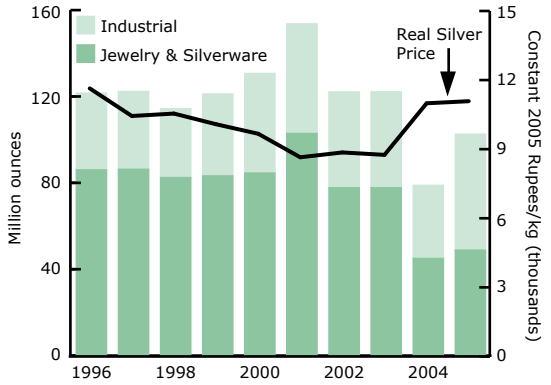


With the domestic industry broadly stable, from a technological standpoint, the growth in silver fabrication was due to higher demand from a variety of consuming industries. These ranged from high-end military applications (although these would typically use very little silver and, even in some cases, pure palladium components) to consumer electronic products, including cell phones.

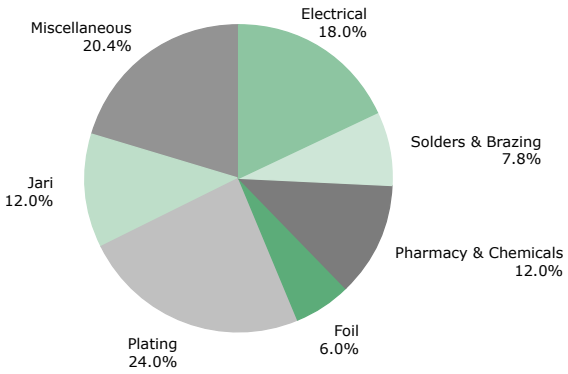
Silver demand from a range of consumer products featured prominently last year, not just in traditional goods, such as cell phones noted above, but also in relatively new lines. In particular, the use of silver in plasma display panels (PDPs) not only achieved significant growth, but, taking into account its relative infancy, accounted for a considerable portion of fine ounce silver demand last year. The technological aspects of PDPs are covered in a little more detail in the 'New Developments in Silver' focus box, but it worth pointing out that even the smaller PDP units still consume a not inconsiderable amount of pure silver. Staying with consumer electronics, silver demand was also higher in the liquid crystal display (LCD) sector, with demand for LCD units boosted by an increasing number of companies introducing this technology across their operations.

Away from the consumer market, silver fabrication in the photovoltaic industry also rose last year. Although silver has been used in this application for more than a decade, it is only in recent years that this sector has seen a pronounced increase in demand. In part, this has been facilitated by a small but rising number of states legislating for the use of solar cells, for example, in existing real estate, partly through rebates to encourage their take-up. Last year, silver fabrication in solar cells grew strongly and it appears as though the use of silver

Indian Fabrication



Indian Industrial Fabrication, 2005



in this field would have been higher were it not for a lack of polysilicon supplies, which held up solar cell production. Elsewhere, fabrication of ethylene oxide (EO) catalysts picked up last year, by an estimated 6% year-on-year, as a result of the start-up of at least one new EO plant. In recent years, there has been a trend towards larger catalysts and a newly commissioned plant would now require approximately 1.5 Moz (47 t) of fine silver.

The use of silver in brazing alloys and solders last year also rose, by 5%, to 7.7 Moz (240 t). Demand for brazing alloys in particular (which dominate this category) was higher across a range of categories. This included the after care market for air conditioners, which, as in recent years, enjoyed modest growth in 2005. Interestingly, silver bearing alloys are only used in repairs, not in the manufacture of new units, which, from a brazing perspective, are effectively silver-free. Higher construction spending, particularly in the hurricane affected south of the country, also boosted demand for brazing alloys, for example in switch gear devices. In contrast, weakness in the US auto market led to a slowdown in the use of brazing alloys in this area.

Turning briefly to this year, it appears as though industrial fabrication has started brightly, particularly in the electrical and electronics sector. However, high lease rates and the increase in the silver price could well contribute to difficulties, in terms of the financing of work in progress. In addition, the high silver price may eventually encourage some substitution away from silver although, in many cases, there appear to be few suitable replacements. The one exception might be the MLCC sector, especially for small and medium sized companies, although yet higher silver prices may be required to encourage a move to base metal alloys.

India

GFMS estimate that industrial offtake rose very sharply in 2005, by 58% to 53.7 Moz (1,680 t) from the previous year's level of just under 34 Moz (1,053 t). The rise takes this demand above the previous record in 2001.

Perhaps as significantly for price elasticity, GFMS estimate that industrial demand surpassed jewelry and silverware for the first time since we began our data series. The basis of this overtaking lies in the phenomenal shifts in India's economic structure in recent years, namely the strong growth in manufacturing and services which means the economy is no longer primarily agricultural (in the last financial year, agriculture only accounted for around 20% of GDP versus 35% 10 years ago, with services pushing above 50% and industry moving towards 30%).

In 2005, almost all categories of industrial demand grew strongly with the exception of pharmacy and chemicals, where offtake fell by around 7% to 6.4 Moz (200 t). This could be attributed to lower usage in *ayurvedic* medicines (traditional Indian medicine), due in part to the high price as well as recent controversies over the lack of quality control in the usage of heavy metals in these products.

The 'true' industrial categories of electrical/electronics and brazing alloys/solders both recorded impressive year-on-year growth. The latest data suggests that industrial production for the year 2005-06 (April-March period) grew by an impressive 8.2% (following another robust 8% in the previous year). The manufacturing sector too recorded notable growth of 9.2% in the same period, sucking in increasing volumes of silver in a variety of applications (which, by contrast with jewelry, and to a lesser extent silverware, are relatively price inelastic).

Table 5 - Silver Fabrication: Industrial Applications (including the use of scrap - million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Europe										
Germany	17.2	17.8	18.4	18.3	20.8	21.4	21.2	21.7	23.5	23.8
UK & Ireland	12.2	12.5	16.3	15.2	17.6	15.4	15.0	16.0	16.7	16.6
Italy	11.2	11.4	10.6	10.6	10.9	10.4	10.4	10.2	11.5	10.8
France	11.7	13.4	11.2	11.6	12.3	15.9	14.6	13.8	10.3	10.2
Switzerland	6.9	8.6	10.0	10.4	8.3	2.7	2.7	2.3	2.4	2.6
Spain	2.0	2.9	3.1	2.7	2.0	1.3	1.3	1.2	2.1	1.9
Netherlands	1.7	1.7	1.7	1.7	1.7	1.5	1.5	1.5	1.6	1.6
Poland	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Norway	0.4	0.4	0.4	1.4	1.2	0.7	0.6	0.6	0.8	0.7
Austria	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6
Sweden	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3
Czech & Slovak Republics	0.5	0.4	0.4	0.5	0.3	0.3	0.3	0.3	0.3	0.3
Belgium	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other Countries	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Total Europe	**66.6**	**71.9**	**74.6**	**75.2**	**77.8**	**72.3**	**70.1**	**70.1**	**71.6**	**71.0**
North America										
United States	68.2	75.3	81.0	88.6	95.1	78.7	83.1	86.8	94.2	100.8
Mexico	2.6	2.7	3.0	3.3	3.4	3.0	3.0	3.1	3.0	3.2
Canada	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total North America	**71.4**	**78.7**	**84.5**	**92.5**	**99.1**	**82.3**	**86.6**	**90.4**	**97.7**	**104.5**
Latin America										
Brazil	3.3	3.4	3.5	3.2	3.2	3.2	3.2	3.0	3.7	4.5
Argentina	1.2	1.2	1.2	1.0	0.8	0.6	0.6	0.6	0.6	0.9
Colombia	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Ecuador	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total Latin America	**5.2**	**5.3**	**5.4**	**4.8**	**4.6**	**4.5**	**4.5**	**4.3**	**5.0**	**6.0**
Middle East										
Turkey	1.2	1.4	1.3	1.2	1.4	1.1	1.2	1.5	1.6	1.7
Israel	1.0	1.0	1.0	0.9	1.0	0.8	0.8	0.8	0.8	0.8
Egypt	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Middle East	**2.5**	**2.6**	**2.5**	**2.4**	**2.6**	**2.2**	**2.3**	**2.5**	**2.6**	**2.7**
Indian Sub-Continent										
India	35.5	36.0	31.9	37.9	46.1	50.8	44.4	44.4	33.9	53.7
Pakistan	0.5	0.7	0.5	0.6	0.5	0.3	0.3	0.3	0.3	0.3
Total Indian Sub-Continent	**36.0**	**36.7**	**32.4**	**38.5**	**46.7**	**51.1**	**44.7**	**44.7**	**34.1**	**54.0**
East Asia										
Japan	52.1	59.4	52.8	60.8	72.1	55.4	59.1	60.3	73.7	84.5
China	19.1	20.3	20.7	20.9	21.9	22.3	25.6	27.6	30.1	31.8
South Korea	11.9	12.3	11.2	12.2	14.8	12.4	13.4	14.5	15.2	15.5
Taiwan	5.8	6.3	6.2	6.3	8.8	8.0	8.7	9.9	10.9	11.3
Hong Kong	2.8	3.4	3.0	3.3	3.9	2.7	3.0	2.9	3.1	3.2
Indonesia	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6
Total East Asia	**92.2**	**102.3**	**94.5**	**103.9**	**122.0**	**101.4**	**110.2**	**115.8**	**133.5**	**146.9**

Table 5 - Silver Fabrication: Industrial Applications (including the use of scrap - million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Africa										
Morocco	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.3
South Africa	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Other Countries	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Africa	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.5**	**0.5**	**0.5**	**0.6**	**0.6**
Oceania										
Australia	2.3	2.1	2.3	2.4	2.5	2.1	2.1	2.2	2.2	2.0
Total Oceania	**2.3**	**2.1**	**2.3**	**2.4**	**2.5**	**2.1**	**2.1**	**2.2**	**2.2**	**2.0**
CIS										
CIS	21.1	20.6	19.6	18.8	19.6	20.1	19.3	20.3	20.9	21.6
Total CIS	**21.1**	**20.6**	**19.6**	**18.8**	**19.6**	**20.1**	**19.3**	**20.3**	**20.9**	**21.6**
World Total	**297.7**	**320.8**	**316.4**	**339.2**	**375.5**	**336.4**	**340.2**	**350.8**	**368.3**	**409.3**

A vital component of this growth story is the fact that India has begun to fabricate much further down the value chain than in the past. This has resulted in the domestic production of a variety of intermediate silver containing products that would have previously been imported. Our data suggests that the manufacture of, in particular, silver nitrate and plating salts to a high (electronic) specification for local use has risen sharply.

As was reported in last year's *World Silver Survey*, India is now rapidly becoming a major manufacturing hub for many of the global consumer product giants, producing a vast array of items such as DVDs, CDs, cell phone handsets, TV receivers, color monitors, air conditioners, refrigerators, washing machines and so on. Although data is patchy on the output of final products, India-wide data suggests that the production of air conditioners, for example, rose by close to 70% in the April-November 2005 period, while other electrical and electronic items grew by over 20%. The automotive sector continued to show robust growth too, with motor vehicle production rising by well over 8%, following a 30% rise in 2004, and motorcycle output shot up by 23% in the April-November period of 2004-05. Another area of rapid growth has been the production of cell phone handsets, with LG Electronics and Nokia both reporting significant output gains last year. India even has its own global market leaders in the electronics/electrical area. For example, Moser Baer has an estimated market share of over 20% in the manufacture of DVDs and CDs worldwide and, last year, they recorded revenue growth of 28%.

Indian Vehicle Production

('000s)

2001	2002	2003	2004	2005
749	803	989	1,270	1,364

Source: Global Insights

Global Billings

(semi-conductor shipments per year, millions)

	World	Americas	Europe	Japan	Asia
2004	213.0	39.1	39.4	45.8	88.8
2005	227.5	40.7	39.3	44.1	103.4
Change	14.5	1.7	-0.1	-1.7	14.6
Change %	7%	4%	0%	-4%	16%

Source: SIA

GFMS estimate that the use of silver in plating rose by a phenomenal 176%, to 12.9 Moz (400 t). Although electrical and electronics end uses helped to boost this, one important "low tech" use of the metal that drove this total significantly higher was jewelry. When the silver price first began to rise in 2004, consumption of both fine and costume silver jewelry fell. However, as the price level crossed the Rs.11,000-12,000 per kg mark in 2005, the demand for costume pieces rose spectacularly as urban consumers appear to have migrated en masse to this cheaper option. The growth in this segment can be seen in places like the Zaveri Bazar in Mumbai, where there has been an explosion in costume jewelry outlets, and the same is true in most other Indian

Japanese Industrial Production

(Index, 2000=100)

2001	2002	2003	2004	2005
93.7	92.6	95.4	100.5	101.9

Source: OECD

Japanese Non-Photographic Nitrate & Contact Production

Million ounces

	2002	2003	2004	2005
non-photo nitrates	14.0	15.3	20.0	23.3
contacts	8.6	8.5	10.5	11.4

cities. However in 2006 as the silver price doubled to over Rs.22,000 per kg in April, even the use of silver in plating took a beating. It seems that the costings for costume jewelry became unworkable with the steep rise in precious metal prices.

GFMS estimate that the fabrication of silver in decorative applications rose by 52% to 6.4 Moz (200 t). One of the main areas of use was jari (a decorative thread), which enjoyed huge export orders as well as buoyant domestic sales. There was further growth via strong exports of gold-plated silver jari. The use of silver in foils also looks to have risen, climbing by 43% to 4.2 Moz (100 t) as the gutka manufacturers made a comeback as the government failed to impose a ban on tobacco products. These semi-industrial areas are expected to remain strongly influenced by volatile price movements, in contrast to 'true' industrial demand.

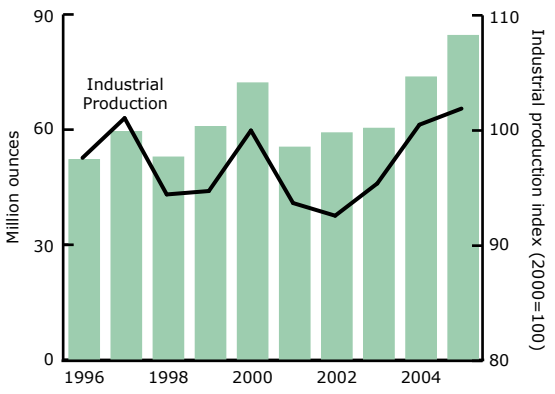
East Asia

GFMS estimate that **Japanese** industrial uses of silver rose sharply in 2005, up by close to 15% at 84.5 Moz (2,630 t). Last year's offtake was the largest ever recorded in a *World Silver Survey*, 17% higher than the level seen in 2000 at the peak of the technology bubble. If nothing else, the rise in silver consumption in this area is a tribute to its indispensable technical characteristics across a range of applications. Indeed, in our field work in Japan over the past research cycle, it has become increasingly difficult to pinpoint any particular use of silver that has been driving total consumption inexorably higher. Most of our contacts who operate relatively far down the production chain (for example, those producing non-photographic nitrates which will then be used in an intermediate application before ending up in a final product) simply report that demand is up because of "digital products".

Before continuing to discuss the growth in demand in more detail, it is worth reiterating a point that has been made in previous *World Silver Surveys*. Japanese fabricators, especially of lower tech intermediate products, are facing unrelenting competitive pressures from across the Asian region, but from China, Taiwan and South Korea in particular. This has been reflected in the basic data sets that we collect on industrial uses of silver. For instance, brazing alloys and solders have typically grown less rapidly than non-photographic nitrates. This is due to the fact that the former, especially basic brazing alloys and solders used in the refrigeration industry, are more often than not being fabricated outside of Japan these days (even if by a Japanese company). Somewhat ironically, the move to leadless solders may turn out to be something of a fillip for the Japanese industry. At least two major players in this market have stated that their production of lead free solders has increased substantially. Although this is starting from a relatively small base, the WEEE directives in Europe and similar mandates in Japan will eventually completely ban the use of lead in electronics soldering and this may precipitate a substantial increase in silver based products (our information is that tin-silver-copper alloys are the leading candidate to substitute for lead based solders).

As a further aside before looking at the specifics of the market in 2005, it is interesting to examine the impact of rising prices on silver use in industrial applications. Our

Japanese Industrial Fabrication



information is that prices below $10 were 'acceptable' to fabricators who felt that this could be comfortably absorbed into their cost structure. What is less clear are the pressures for substitution that will occur at $10-plus silver prices. Indications are that thrifting and the search for substitutes will increase at prevailing price levels. Turning to actual offtake in 2005, as already mentioned, the overwhelming view from the market has been that 'digital applications' have been the key drivers. For example, one of the largest fabricators of non-photographic nitrates estimates that over 80% of their production ends up in a digital product at some stage. The range of applications is simply staggering, but one of the biggest growth areas, as was the case in 2004, has been in Plasma Display Panels (PDPs), simply because of the quantity of metal used per application (which can be as high as an ounce per screen).

The strength of this market last year was reflected in the fact that Fuji Film announced at the beginning of 2005 the intention to use their expertise in fabricating silver halide for the photographic industry to produce electromagnetic radiation shielding film for PDPs, which is attached beneath the surface of a PDP to prevent electromagnetic radiation being irradiated from the panel. For this, a fine mesh of silver halides is fabricated on a transparent film, and this provides excellent transmittance, high shielding and improves image quality.

Elsewhere, contact production rose somewhat more modestly, mainly due to the somewhat lackluster performance of the automotive sector (diesel and gasoline automobile production rose by just over 1% in 2005). Furthermore, the use of silver in lower tech areas such as EO catalysts, mirrors and anti-bacterial applications remained stable year-on-year.

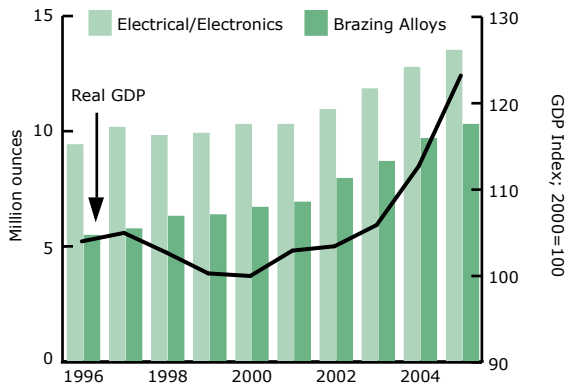
Chinese industrial demand rose by 6% in 2005 to 31.8 Moz (990 t), led higher by further development in sectors such as the motor vehicle and electronics industries as well as continued strong growth in building and infrastructure construction. Electronics and electrical demand accounted for the largest proportion of industrial demand, reaching 13.5 Moz (420 t) last year, up from 12.8 Moz (397 t) the year before. The degree of expertise among the Chinese workforce in the sector continues to rise, leading to foreign and Chinese companies opening more sophisticated production facilities and investing in staff training, leading to a virtuous circle of an even more competitive and skilled labor force. Symbolic of the technological leaps that China has made, a second manned spacecraft was launched in mid-October carrying two astronauts.

China manufactured close to three million passenger cars last year, up by more than a quarter over 2004 while the electronics sector also advanced forward on the back of heightened consumer demand for electronic gadgets. Rising real incomes combined with urbanization and a rudimentary fixed-line telephone system have led to a boom in cell phones. Last year saw cell phone production increase by just over a quarter while sales rose slightly more. Computers are also benefiting from the same trends, with sales up 18% in 2005 and PCs and cell phones are just two of the products that have led to more demand for silver based contacts and connectors.

Capital investment in housing and infrastructure in China has led to solid growth in demand for brazing alloys and solders, with a silver content anywhere from 5% to 60% (or even higher). GFMS estimate that demand for silver in this area rose by 6% to 10.3 Moz (320 t). As in other manufacturing industries in China, foreign companies have been attempting to enter the local market and several medium sized joint venture production facilities in southern China were established during the last two or so years. These new players have raised the level of competition by offering higher quality products to cater for use with materials from steel to ceramics.

Although cadmium based alloys are still being produced in some areas of China, volumes are declining on a market share basis as attempts to adopt a more environmentally

Chinese Industrial Uses of Silver



The Main Uses of Silver

Silver's unique properties include its strength, malleability and ductility, its electrical and thermal conductivity, its sensitivity to and high reflectance of light and, despite it being classed as a precious metal, its reactivity which is the basis for its use in catalysts and photography. This versatility means that there are few substitute metals in most applications, particularly in high-tech uses in which reliability, precision and safety are paramount.

Industrial

Silver is the best electrical and thermal conductor of all metals and is hence used in many electrical applications, particularly in conductors, switches, contacts and fuses. Contacts provide junctions between two conductors that can be separated and through which a current can flow, and account for the largest proportion of electrical demand.

The most significant uses of silver in electronics are in the preparation of thick-film pastes, typically silver-palladium for use as silk-screened circuit paths, in multi-layer ceramic capacitors, in the manufacture of membrane switches, silvered film in electrically heated automobile windshields and in conductive adhesives. Silver inks are now also being used in smart cards and radio frequency identification (RFID) tags.

The ease of electro-deposition of silver from a double-alkali metal cyanide, such as potassium silver cyanide, or by using silver anodes accounts for its widespread use in coating. Silver solutions are made up of a cyanide, a carbonate, silver and a brightener. The silver is usually added as the single salt, silver cyanide, or the double salt, potassium silver cyanide. Various forms of silver are used as anodes and may be in the form of plates, bars, rods, grain or in custom-designed shapes. Silver is also used as a coating material for compact disks and digital video disks.

The unique optical reflectivity of silver, and its property of being virtually 100% reflective after polishing, allows it to be used in mirrors, glass coatings and cellophane or on other metals. Many batteries, both rechargeable and non-rechargeable, are manufactured with silver alloys as the cathode. Although expensive, silver cells have superior power-to-weight characteristics than their competitors. The most common of these batteries is the small button shaped silver oxide cell (approximately 35% silver by weight) used in watches, cameras and similar electrical products.

Silver, usually in the form of mesh screens but also as crystals, is used as a catalyst in numerous chemical reactions. For example, silver is used in formaldehyde catalysts for the manufacture of plastics and, to an even greater extent, in ethylene oxide catalysts for the petrochemical industry.

Silver is employed as a bactericide and algicide in an ever increasing number of applications, including water purification systems, surface treatments and disinfectants.

The joining of materials (called brazing if done at temperatures above 600º Celsius and soldering when below) is facilitated by silver's fluidity and strength. Silver brazing alloys are used widely in applications ranging from air conditioning and refrigeration equipment to power distribution equipment in the electrical engineering sector. It is also used in the automobile and aerospace industries. Bearings electroplated with high purity silver have greater fatigue strength and load carrying capacity than any other type and are used in various high-tech and heavy-duty applications.

Photography

The photographic process is based on the presence of light-sensitive silver halide crystals, prepared by mixing a solution of soluble silver, usually silver nitrate, with a soluble alkali metal halide such as sodium chloride or potassium bromide. These grains are then suspended in the unexposed film. The effect of light on the silver halide disturbs the structure of this compound, rendering it selectively reducible to metallic silver by reducing agents called developers. The resulting negative image is converted to the positive by repeating the process under specific conditions. Photographic film is used in radiography, the graphic arts and in consumer photography. Photographic film manufacturers demand very high purity silver.

Jewelry and Silverware

Silver possesses working qualities similar to gold, enjoys greater reflectivity and can achieve the most brilliant polish of any metal. Consequently, the silversmith's objective has always been to enhance the play of light on silver's already bright surface. Pure silver (999 fineness) does not tarnish easily but to make it durable for jewelry, it is often alloyed with small quantities of copper. It is also widely used with base metals in gold alloys. Sterling silver, at a fineness of 925, has been the standard of silverware since the 14th century, particularly in the manufacture of "hollow-ware" and "flatware". Plated silverware usually has a coating of 20-30 microns, while jewelry plating is only 3-5 microns.

Coins

Historically, silver was more widely used in coinage than gold, being in greater supply and of less value, thus being practical for everyday payments. Most nations were on a silver standard until the late 19th century with silver coin forming the main circulating currency. But after the gold rushes, the silver standard increasingly gave way to gold. Silver was gradually phased out of regular coinage, although it is still used in some circulating coins. However, the most important application today is in bullion and commemorative pieces.

friendly approach are gradually forcing the industry to move away from deleterious materials such as cadmium.

Lastly, other industrial demand for silver in China rose by 5% to 8 Moz (250 t) with this category including a diverse range of products such as batteries, mirrors and anti-bacteria compounds.

Hong Kong's industrial use of silver grew a modest 3% last year to a reach 3.2 Moz (99 t). The electronics industry, which accounted for almost 50% of Hong Kong's total exports last year, surged 18% in 2005 due a large increase in business and household consumer demand. While sales to the United States and Europe were robust, exports to the mainland increased by more than 20% in the period. Hong Kong and China agreed in October 2005 to further open the mainland market to Hong Kong companies under the third phase of the Closer Economic Partnership Arrangement (CEPA III) which will ensure all imports obtain tariff free status from January 1st 2006, providing a level playing field for Hong Kong based industry.

Industrial demand for silver in **South Korea** experienced a minor increase of 2% to reach 15.5 Moz (481 t) in 2005. Strong demand for mass produced, low cost electronic and consumer household items assisted in maintaining demand. Products that require electrical contacts, switches or relays, which is the majority of electrical equipment, all impact on the volume of silver required in the industrial sector.

It has been in the area of electronics that technical advancements continue to push consumer demand, as new models of cell phones, PDAs and laptop computers are constantly being improved and released into the market. As electronic gadgetry becomes more affordable, it is quickly absorbed into general mainstream use. For example, the recent trend to install home theaters with large format Plasma Display Panel (PDP) flat screen televisions with CD and DVD players, now available with

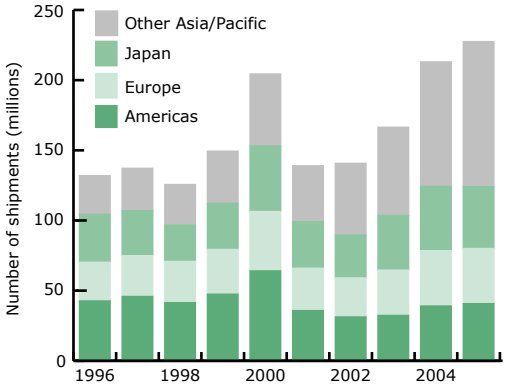
Korean Industrial Production

(Index, 2000=100)

2001	2002	2003	2004	2005
100.7	108.8	114.6	126.3	134.1

Source: OECD

Global Semiconductor Billings



Source: SIA

hard drive (HDD) capabilities, only increases industrial demand, and therefore offtake of the precious metal consumables.

Looking at the other main sub-category of South Korean silver industrial demand, brazing alloy production increased almost 4.5% in 2005 to 1.5 Moz (47 t). Domestic use of brazing alloys was estimated to have been lower last year as the construction sector again experienced weakness though exports made up for the shortfall with sales to the United States performing well.

Industrial offtake in **Taiwan** rose by almost 4% in 2005, driven by robust demand in the electronics sector which accounted for over 70% of total Taiwanese offtake. This raised industrial demand by 0.4 Moz (13 t) to 11.3 Moz (351 t) last year. Plating solutions, by far the largest industrial category, again experienced an upwards move as the thick film pastes required in the electronics sector and more specifically in the manufacturing of liquid crystal displays (LCD) spurred demand.

Readers of past *World Silver Surveys* would be aware of the move by some Taiwanese manufacturing facilities to relocate a part or all production to China in an attempt to reduce costs. This trend continued in 2005, albeit at a lower rate, with local manufacturers attempting to lower their operating cost structures internally to remain viable. In addition, several foreign manufacturers from Europe and Japan have chosen to set up operations in Taiwan, which has reduced the hemorrhaging of local industry to the mainland.

Table 5a - Silver Fabrication: Electrical and Electronics (including the use of scrap - million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
United States	36.3	41.9	44.1	47.1	51.5	34.1	37.6	39.5	47.4	52.1
Japan	22.7	25.8	23.7	30.0	36.7	26.6	29.4	30.2	38.0	43.7
Germany	11.6	11.9	12.2	12.2	14.3	15.7	15.6	16.2	17.7	18.2
China	9.4	10.2	9.8	9.9	10.3	10.3	10.9	11.8	12.8	13.5
India	3.2	4.2	4.2	4.5	4.8	4.7	4.9	5.1	5.4	9.6
Taiwan	4.2	4.7	4.8	4.8	7.0	6.5	7.2	8.4	9.2	9.6
South Korea	6.4	6.5	6.0	6.6	8.2	7.2	7.6	8.4	8.8	9.0
France	6.3	7.7	6.7	6.8	7.3	11.0	9.9	9.5	8.1	8.0
UK & Ireland	5.0	5.1	6.8	5.7	6.8	4.9	5.3	5.5	5.8	6.2
Italy	3.3	3.2	2.9	3.0	3.1	2.8	2.8	2.9	3.8	3.5
Hong Kong	2.2	2.7	2.5	2.9	3.5	2.5	2.8	2.7	3.0	3.0
Brazil	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.2	1.7	2.1
Mexico	1.1	1.2	1.3	1.9	2.1	1.8	1.8	1.9	1.8	2.1
Turkey	0.9	1.0	0.9	0.8	0.9	0.7	0.8	1.0	1.1	1.1
Australia	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7
Netherlands	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5
Switzerland	4.1	5.5	7.3	7.5	5.3	0.4	0.4	0.5	0.5	0.4
Spain	0.9	0.9	1.0	1.0	0.3	0.0	0.0	0.0	0.3	0.3
Austria	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Romania	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Egypt	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
World Total	**120.5**	**135.4**	**137.2**	**147.5**	**165.0**	**132.0**	**139.7**	**146.4**	**166.9**	**184.2**

Table 5b - Silver Fabrication: Brazing Alloys and Solders (including the use of scrap - million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
China	5.5	5.8	6.3	6.4	6.7	6.9	7.9	8.7	9.7	10.3
United States	8.2	8.4	8.6	9.0	8.7	8.3	8.4	7.9	7.3	7.7
India	2.1	1.6	1.5	1.6	1.8	1.8	1.9	2.1	2.2	4.2
Japan	5.1	5.0	4.2	4.2	4.4	3.5	3.3	3.3	3.7	3.9
Germany	2.9	3.1	3.1	3.0	3.2	2.8	3.0	3.1	3.2	3.2
UK & Ireland	2.3	2.3	2.4	2.2	2.3	2.6	2.3	2.6	2.8	2.9
Italy	2.1	1.9	1.7	2.0	2.1	2.0	2.1	2.0	2.0	2.0
Switzerland	1.7	1.7	1.6	1.5	1.6	1.3	1.3	1.4	1.4	1.5
South Korea	1.2	1.1	0.8	0.8	1.0	1.2	1.4	1.4	1.4	1.5
Taiwan	1.1	1.1	1.0	1.0	1.2	0.9	1.0	1.1	1.1	1.1
France	1.4	1.4	1.0	0.9	1.1	1.0	1.0	0.8	0.7	0.8
Brazil	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.8
Spain	0.6	0.9	1.0	1.1	1.1	1.0	1.0	0.9	0.8	0.6
Mexico	0.9	0.9	1.0	0.6	0.6	0.5	0.5	0.5	0.5	0.5
Australia	0.7	0.6	0.7	0.7	0.8	0.6	0.6	0.6	0.6	0.5
Canada	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Netherlands	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
Austria	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Israel	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
World Total	**37.3**	**37.4**	**36.6**	**36.7**	**38.1**	**36.1**	**37.2**	**37.8**	**39.0**	**42.3**

New Developments in Silver

While silver experienced a resurgence in investor interest last year, it is the industrial applications of the metal that will ensure physical silver demand will continue, with the metal expected to play a pivotal role in future industrial advancements. The main growth areas for silver in the last few years have been in health, electronics and in the renewable energy fields, all of which rely on the properties of the metal as a catalyst, biocide and for conducting and storing electricity.

The anti–bacterial properties of silver have been well published over centuries but it is the recent development of biocide technology that has the medical community racing to investigate how this technology can best be utilized. Silver sulfadiazine has been widely used in the treatment of burns and now other related products are being tested and appearing for mainstream use. Bandages that release silver ions on application have been used in the management of wounds by hospitals in recent years but this product has now been developed and released into the domestic market. For instance, medical supplier Beiersdorf last year began promoting their range of "Silverhealing Elastoplast" bandages for the consumer market. A silver-based surface disinfectant has now been introduced which also uses silver ion technology to combat common bacteria, with a push now to investigate silver as a low cost environmentally sensitive option for use in food processing facilities, care centers and households.

The use of silver biocides for preserving timber products and preventing mildew and other forms of bacterial damage to building structures has increased significantly in recent years as manufacturers shift from solvent based to water based systems and the replacement of traditional biocides by more expensive environmentally sound options.

Gold has been regarded as the preferred metal for use on circuit boards though with the high cost of the yellow metal, electronic manufacturers are turning to other materials to act as substitute semi-conductors. Silver has been competing strongly with other low cost options like copper and aluminum for use in electronic products because silver bonding wire offers substantial gains in conductivity, and thereby circuit speeds. The use of silver, and other alternative semi-conductors, will become more prevalent as consumers demand yet lower cost electronic goods.

The recent introduction to the consumer market of televisions using Plasma Display Panels (PDP) has boosted silver demand for these electronic products. The large flat screens, once unaffordable to the masses, have reduced in price dramatically in recent years and are no longer considered a luxury purchase. Currently PDP screens, over 42 inches, contain up to an ounce of silver, stimulating further demand for the white metal and, with sales tipped to increase three fold to 10 million units by 2008, manufacturers' requirements for the precious metal will only increase though LCD screens are encroaching into this market.

Finally, the advancement of silver being used in renewable energy production is thought to have substantial potential to generate demand with over 90% of solar cells manufactured today containing silver. The silver is contained in thin wafers of ultra-pure silicon that covert solar energy into electricity and are backed by silver to gather the current and transport it to electric lines. With pressure on the world's fossil fuel supply, renewable energy should become a major focus and could potentially increase demand for silver greatly.

Photography

- ***Photographic demand for silver fell by 9% last year to 164.8 Moz (5,126 t).***

- ***The bulk of the decline came from a major reduction in the output of color film.***

In 2005, photography required 16.2 Moz (503 t) less silver than in 2004. The larger part of the decline was due to reduced production of color films. Color film sales have been falling sharply in North America, Europe and Japan due to consumers moving away at an accelerated rate from analog to digital technology for image capture. In addition, color film sales in developing markets such as China are failing to increase at the rates once expected by the major manufacturers due to a rapid expansion in the digital camera population in major cities and only sluggish growth in traditional photography elsewhere.

Another factor behind the global slide in silver use is the lower than forecast demand for photographic paper. At one stage, it was widely held that the sizable increase in the number of pictures taken with digital cameras would flow through to growth in demand for paper. In practice, though, this has not happened, with paper demand as a result tending to stagnate. Digital camera users are not only printing fewer images than some pundits had expected but also non-silver using thermal and ink jet systems are capturing an increasing share of image output.

The impact of digital technology is also being felt in other areas of photographic demand for silver, although last year this was to a lesser extent than in the case of consumer paper and, especially, color negative film. For instance, radiographic film has seen some demand erosion but on a global basis this has been slight. After several years of decline, it seems that demand from the

Table 6 - Silver Fabrication: Photographic Use (including the use of scrap - million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Europe										
EU-25	70.5	73.4	77.2	77.0	72.4	71.5	66.9	65.0	61.6	54.6
Other Countries	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Europe	**70.7**	**73.5**	**77.4**	**77.2**	**72.6**	**71.7**	**67.1**	**65.2**	**61.8**	**54.8**
North America										
United States	59.9	62.9	69.0	73.5	70.2	65.5	64.8	58.9	55.2	56.4
Mexico	3.4	4.1	3.4	2.9	0.0	0.0	0.0	0.0	0.0	0.0
Total North America	**63.3**	**66.9**	**72.5**	**76.4**	**70.2**	**65.5**	**64.8**	**58.9**	**55.2**	**56.4**
Latin America										
Argentina	1.8	1.8	1.8	1.6	1.3	1.0	1.1	1.5	1.5	1.5
Brazil	3.4	3.4	3.2	3.2	2.4	2.3	2.1	2.2	2.2	1.4
Total Latin America	**5.2**	**5.2**	**5.0**	**4.8**	**3.7**	**3.3**	**3.2**	**3.7**	**3.7**	**2.9**
Indian Sub-Continent										
India	0.6	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Sri Lanka	0.3	0.3	0.4	0.4	0.4	0.1	0.1	0.1	0.1	0.1
Total Indian Sub-Continent	**0.9**	**1.0**	**0.7**	**0.7**	**0.7**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**
East Asia										
Japan	57.9	58.6	58.2	59.9	61.2	62.2	57.8	53.9	49.6	42.2
China	5.8	6.0	6.1	3.7	3.9	4.5	5.7	5.8	6.1	5.4
Total East Asia	**63.7**	**64.6**	**64.3**	**63.6**	**65.0**	**66.7**	**63.5**	**59.7**	**55.7**	**47.6**
Oceania										
Australia	1.6	1.6	1.6	1.7	2.7	2.4	2.3	2.1	1.5	0.1
Total Oceania	**1.6**	**1.6**	**1.6**	**1.7**	**2.7**	**2.4**	**2.3**	**2.1**	**1.5**	**0.1**
CIS										
CIS	4.7	4.5	3.8	3.4	3.2	3.1	3.0	2.8	2.7	2.6
Total CIS	**4.7**	**4.5**	**3.8**	**3.4**	**3.2**	**3.1**	**3.0**	**2.8**	**2.7**	**2.6**
World Total	**210.1**	**217.4**	**225.4**	**227.9**	**218.3**	**213.1**	**204.3**	**192.9**	**181.0**	**164.8**

graphic arts sector has stabilized somewhat. And, when it comes to motion picture film, there was a marginal rise in silver use last year.

The **United States** seemingly bucked the trend last year, with photographic fabrication climbing by just over 2% to 56.4 Moz (1,753 t). This did not, however, signal any overall growth in US consumption of traditional analog products. For instance, according to *Photofinishing News Inc.*, US amateur film sales declined by over 24% in 2005, with paper demand also down heavily. In fact, the rise in manufacturers' silver demand referred to above simply reflected the impact of corporate restructuring on the location of analog products' production.

After reaching a peak of 77.4 Moz (2,408 t) in 1998, **European** photographic fabrication has subsequently recorded successive year-on-year declines. This in itself is perhaps not surprising. However, last year's fall of 11%, which took the total to a record low (basis our post-1989 statistical series) of 54.8 Moz (1,705 t), represented the most significant drop in annual production to-date. This fall was largely due to reductions in the consumer and medical fields. With regards to the former, Agfa-Gevaert's closure of its consumer imaging division, in 2004, was an important factor behind the region's weaker photo-related silver fabrication, driven by the ongoing rise in digital camera sales (according to Lyra Research, European sales grew by 10% last year) and the associated collapse in 35mm camera purchases. In addition, the rapid uptake of digital technologies in the medical sector (for example, roughly two-thirds of UK hospitals have switched to digital solutions) has led to a pronounced fall in fabrication of X-ray products.

GFMS estimate that **Japanese** silver offtake in photographic applications fell even more sharply than in 2004, by around 15% to 42.2 Moz (1,311 t). This is the lowest level ever recorded in the *World Silver Survey*, and is all of 32% off the peak recorded only five years previously. Not surprisingly, the key driver of this trend has been the ongoing shift to digital technologies across all aspects of the market. There is an important caveat that should be added to this estimate of a 15% decline in offtake. GFMS field research in Japan in 2005 and 2006 has pointed to a decline in the stocks of silver held by the industry as a whole, in some instances well in excess of this figure. What is not clear is how much of the fall in perceived silver use was due to stock reductions and how much was due to a fall in actual production. Our information is that actual purchases of silver fell by more than 20% and that the actual use of silver declined more modestly. Notwithstanding these reservations, it is certain that silver halide production fell in 2005 and, highly probably, by a significant, double-digit amount.

Turning to the components of the market, a considerable portion of the fall in silver use was accounted for by further sharp declines in the amateur film and paper market, which, given that this segment is a relatively small user of the metal compared to say X-ray, suggests that it must have fallen very sharply indeed (GFMS estimate this segment of the market to have fallen by over 20% year-on-year; data from *Photofinishing News Inc.* shows that Japanese film sales in 2005 fell by close to 20%). Looking at the slowing growth rate in digital camera sales in Japan would, as we suggested last year, point to a maturing market where the transition from halide is well advanced. This means that one would expect any substantial declines in future metal use to come from falls in other sectors.

Film & Paper Consumption & Photographic Fabrication

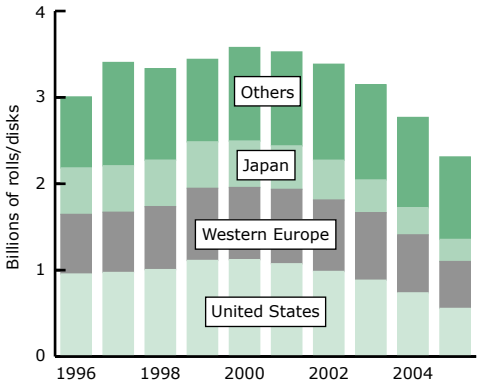
	2001	2002	2003	2004	2005
Film**	3,526	3,384	3,146	2,768	2,310
Paper^	1,777	1,717	1,640	1,503	1,365
Fabrication*	213	204	193	181	165

**Million of rolls, ^millions square meters, *Moz
Source: Photofinishing News Inc., GFMS

In addition to the substantial falls seen in the amateur photographic market, 2005 witnessed markedly lower silver halide use in the graphics arts (following on from the trend seen in 2004). As we discussed in *World Silver Survey 2005*, the transition to digital technologies in this sector in Japan has been relatively slow, primarily because of cost considerations, but that this is now changing rapidly. In particular, the shift to Computer to Plate (CTP) has started to pick up pace, with estimates showing penetration of around 15% in 2003, rising to 30% in 2004 and as much as 45% last year. This has had a marked impact on silver demand over the past two years. As far as the other segments are concerned, our information suggests that X-ray use of silver was down, but only slightly in 2005 (certainly not more than a few percent). Motion picture use of silver has not been majorly impacted by digital technologies and offtake was stable year-on-year.

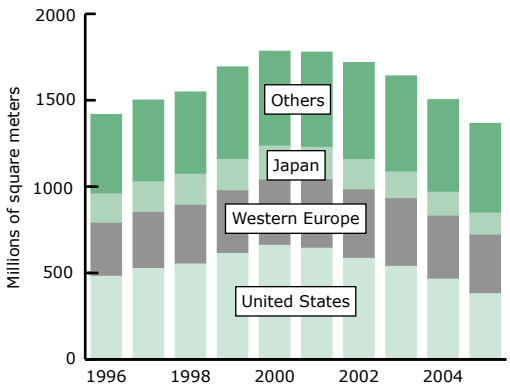
One final comment on the Japanese market concerns the announced closure of Konica Minolta's camera and color film and paper business. At the beginning of this year,

World Consumer Film Sales



Source: Photofinishing News Inc.

World Color Photographic Paper Consumption



Source: Photofinishing News Inc.

Digital Technology and the Photographic Market

To few market participants' surprise, 2005 saw silver fabrication demand for photographic uses experience further decline from its 2004 levels, the sixth year in a row it has fallen. Since 1999, global photographic demand has dropped by a total of 63.1 Moz (1,961 t). The driver of the continued retracement was again the ongoing penetration of digital photography, which has mainly hit sales of consumer film. In 2005, these fell by 17%, according to *Photofinishing News Inc.*, in contrast to digital camera sales which, according to Lyra Research Inc., rose by 12%.

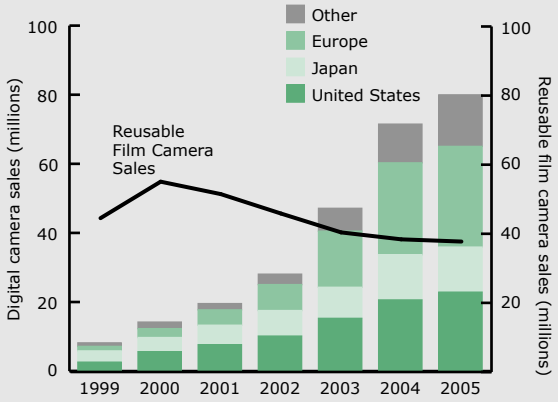
The impact of the rise of digital photography on consumption of photographic paper, which also contains silver, is less straightforward. The elimination of the marginal cost of taking more pictures, due to the lack of film usage and declining costs of storage media, has led to a much higher number of pictures being taken, which has created the theoretical potential for an increase in the number of pictures printed. Recent trends in the photographic industry indicate that the sector has tried to capitalize on this potential. Firstly, aggressive advertising campaigns and the installation of numerous print stations have been used to promote printing on photographic paper. Secondly, many of the major players in the market have expanded their business into inkjet printers and the relevant consumables.

Nevertheless, the ability to view pictures on screen, without the costs and trouble of printing, has led to a different situation. It is apparent that many consumers tend to keep their collection in electronic form only. Furthermore, much of whatever printing takes place is done at home, using relatively low cost inkjet printers, which utilize paper that does not contain silver halide.

Moving away from consumer photography, the digital revolution seems to have had a far less pronounced impact on radiographic film demand, due to the significantly higher costs that replacement involves, coupled with the marginal growth of conventional technology in parts of the developing world. Elsewhere, silver demand in motion picture film has in fact grown, as the heavy investment that has already taken place in conventional technology, coupled with high costs of replacement and an arguably limited marginal benefit, has continued to act as a disincentive to switching to digital.

One final factor to note with regards to the decline in photographic silver demand is the increasing number of non-photographic products with integrated camera functions, particularly given the fact that the quality of pictures taken using camera phones, camcorders, PDAs and other handheld devices is ever rising. For instance, March 2006 saw the launch of the first ever 10 mega pixel camera phone. Despite such products, as a rule, lacking the optical and digital components necessary to produce truly comparable output to conventional and digital cameras, GFMS believe that their success has and will continue to affect sales of both categories.

Digital and Film Camera Sales



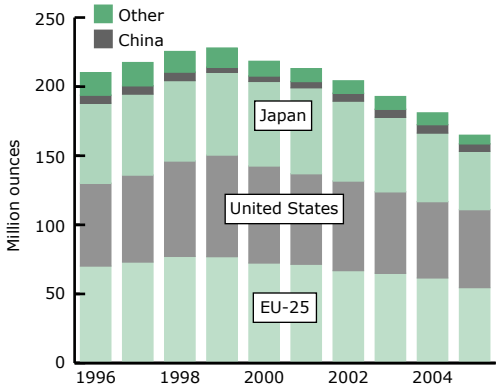
Digital camera sales include toy & entry level cameras
Source: Lyra Research Inc., Photofinishing News Inc., GFMS

they stated that there would be a phased closure of color film and paper production by the end of the fiscal year ending March 31st, 2007.

After five years of continuous annual growth, **Chinese** photographic demand fell in 2005 by 12% to 5.4 Moz (167 t). It appears that the Chinese are open to trying new technology, providing the price is right and if the person's budget allows for it, and digital cameras have been readily accepted by the market, along with cell phones and mp3 music players. Digital cameras have become very popular among the urban population with those who have ready access to a computer more likely to also own one. Young urban residents are the key target market for the cameras because of their willingness to try and knowledge of technology based products. The continuous product improvement cycle has meant that Chinese digital cameras now cater for just about all budgets and wants.

By contrast, in rural China the digital camera is finding it harder to penetrate the camera market due to a combination of lower disposable income levels, a much more limited level of education about technology and a lack of supporting infrastructure to assist with the take up of digital cameras such as picture processing booths. However, this situation is changing and while film cameras still have a large share of the rural market because of the previously mentioned reasons, the trend for film is not favorable going forward. Statistics released

World Photographic Fabrication



by the National Bureau of Statistics (NBS) provide support for the above commentary. In 2004, around a quarter of those living in urban areas owned a digital camera while more than 40% had a film camera. This contrasts starkly with ownership percentages in the rural regions with only an estimated 1.5% of rural dwellers owning a digital camera compared to 5% ownership of a film camera. Recent data released by the NBS showed that nationwide sales of digital cameras soared by 44% in 2005 while film camera sales fell.

Besides consumers, demand for analog photographic products also comes from the commercial sector and trends here have been critical for silver photographic demand. The gradual development of the Chinese publishing industry has helped boost demand for professional grade photographic paper. In 2005, the value of sales of newspapers and books rose by 6% and signs of a degree of liberalization in the licensing requirements for publications will assist in further boosting demand for high quality silver halide paper.

Likewise the production of X-ray film is an important component of photographic demand in China and one that should become more important in the future. The reason for this is that the Chinese health sector is steadily expanding to cope with the needs of a large population that is aging, is becoming better educated about physical and mental health issues and can increasingly afford treatment for ailments that were previously coped with. Many private health insurance companies have joined the yearly physical examination system, further adding to the demand for medical services. The modernization of the public hospital system is leading to new technology being introduced (medical equipment imports rose by 14% last year) although this could be a double-edged sword for X-ray demand as digitally based systems as well as film based X-ray systems are introduced.

Jewelry and Silverware

- ***Despite higher prices, jewelry and silverware fabrication rose in 2005, if only by 1%, to 249.6 Moz (7,763 t).***

- ***Much of the growth occurred in low labor cost countries such as India and China as these took export market share from the main loser, Italy.***

- ***Jewelry consumption in many western markets tended to show slower growth or to even retreat, though silverware is thought to have shown more marked weakness.***

Europe

Silver jewelry and silverware fabrication in Europe last year declined by 8% to 61.8 Moz (1,921 t). Most countries registered falls though the vast bulk of the drop was due to a further contraction in Italian offtake. Extra-European rival producers taking market share of both domestic and exports markets was perhaps the most important cause of this fall. Another contributory factor was lower consumption in some countries, for example, Italy and the United Kingdom.

Jewelry and silverware offtake in **Italy** last year fell by approximately 10% to 38.1 Moz (1,185 t). Much of the decline was driven by another sharp drop in silverware but jewelry also saw a single-digit slide. Looking firstly at the more important jewelry area, the greatest percentage fall was in domestic sales, which some feel suffered a slump well over 10%. At first glance, imports appear the main culprit. Gross inflows certainly rose a hefty amount, 29% in gross weight terms, with much of the increase being attributable to India. However, the bulk of this is thought to have been re-exported, leaving net jewelry imports only slightly higher. The main driver instead was a large fall in consumption, which most blame on the rise of keenly promoted steel jewelry. There was also a further dilution of the fine silver weight by a higher gemset share.

Table 7 - Silver Fabrication: Jewelry and Silverware (including the use of scrap - million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Europe										
Italy	40.5	44.8	45.3	51.2	54.0	47.6	45.2	44.1	42.3	38.1
Germany	10.0	10.0	10.1	10.0	9.3	9.4	7.8	7.7	7.2	6.8
Poland	1.8	2.3	2.7	2.9	3.0	2.5	2.3	2.9	3.1	3.4
Greece	4.2	4.5	4.1	4.1	3.3	3.0	2.8	2.9	2.9	2.9
France	2.0	2.2	2.6	2.7	2.8	2.7	2.7	2.6	2.2	1.8
Spain	4.5	4.0	4.1	3.4	3.0	2.4	2.4	2.4	1.9	1.7
UK & Ireland	3.3	3.4	3.3	3.1	3.2	2.9	2.2	1.7	1.5	1.4
Portugal	1.9	1.9	1.9	2.1	2.1	1.8	1.6	1.7	1.5	1.3
Norway	1.1	1.1	1.1	1.5	1.6	1.5	1.3	1.3	1.2	1.0
Sweden	1.1	1.3	1.0	1.0	0.9	0.6	0.7	0.8	0.9	0.9
Denmark	0.9	1.0	0.9	0.9	0.9	0.8	0.7	0.6	0.6	0.6
Switzerland	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Cyprus & Malta	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3
Finland	0.8	0.8	0.6	0.6	0.5	0.4	0.4	0.3	0.3	0.3
Other Countries	1.2	1.3	1.3	1.1	1.0	1.0	1.0	1.0	1.0	0.9
Total Europe	**74.0**	**79.2**	**79.7**	**85.3**	**86.4**	**77.3**	**71.6**	**70.7**	**67.2**	**61.8**
North America										
Mexico	14.2	16.3	15.3	15.1	13.2	12.9	14.1	15.6	16.2	16.4
United States	12.4	12.5	12.6	13.1	13.7	13.0	13.7	15.1	15.4	15.7
Canada	1.3	1.5	1.8	1.5	1.4	1.5	1.5	1.7	1.6	1.4
Total North America	**28.0**	**30.4**	**29.7**	**29.7**	**28.4**	**27.4**	**29.3**	**32.4**	**33.2**	**33.5**
Latin America										
Brazil	1.8	1.6	1.4	1.3	1.2	1.2	1.2	1.4	1.4	1.6
Peru	1.0	1.1	1.0	1.0	0.9	0.9	0.9	0.6	0.6	0.6
Colombia	0.8	0.8	0.8	0.6	0.6	0.5	0.5	0.5	0.5	0.5
Ecuador	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3
Argentina	0.8	0.8	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Other Countries	1.0	1.4	1.7	1.9	1.2	0.9	0.8	1.0	1.2	1.3
Total Latin America	**6.0**	**6.3**	**5.8**	**5.4**	**4.5**	**4.1**	**3.9**	**3.9**	**4.2**	**4.4**
Middle East										
Turkey	5.5	5.5	5.2	4.7	5.9	4.3	5.5	6.0	6.5	5.5
Israel	2.6	3.0	2.8	2.9	2.6	2.4	2.5	2.4	2.5	2.5
Egypt	2.1	2.0	1.7	1.9	1.9	1.6	1.5	1.7	1.9	1.7
Saudi Arabia & Yemen	0.4	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7
Other Countries	2.6	2.6	2.4	2.5	2.6	2.7	2.5	2.6	2.7	2.8
Total Middle East	**13.3**	**13.6**	**12.8**	**12.6**	**13.7**	**11.6**	**12.5**	**13.3**	**14.1**	**13.2**
Indian Sub-Continent										
India	86.0	86.3	82.5	83.2	84.6	102.9	77.7	77.7	45.0	48.9
Bangladesh & Nepal	5.8	6.4	5.1	5.7	6.0	5.9	4.8	4.5	4.2	3.7
Other Countries	2.0	3.1	1.9	2.4	2.3	1.7	1.7	1.7	1.9	1.9
Total Indian Sub-Continent	**93.8**	**95.8**	**89.5**	**91.4**	**92.8**	**110.5**	**84.3**	**84.0**	**51.1**	**54.5**
East Asia										
Thailand	27.1	26.8	23.9	24.9	28.3	30.7	32.3	36.8	40.3	39.8
China	2.4	3.1	4.7	6.3	6.7	7.4	9.4	11.5	13.7	16.4
Indonesia	2.9	3.6	2.2	2.7	3.4	3.8	4.3	4.4	4.9	4.8
South Korea	6.6	6.3	2.6	4.5	4.9	4.6	4.5	4.6	4.7	4.7
Japan	2.1	1.9	1.8	1.8	1.7	1.7	1.7	1.6	1.8	2.1
Vietnam	0.7	0.7	0.6	0.7	0.7	0.7	0.8	0.9	1.0	1.0

Table 7 - Silver Fabrication: Jewelry and Silverware (including the use of scrap - million ounces)

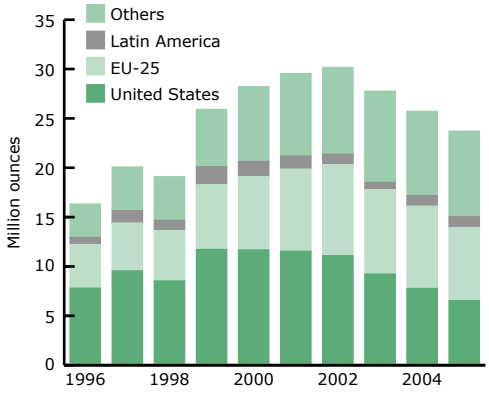
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Myanmar, Laos & Cambodia	1.1	1.0	0.8	0.9	0.8	0.9	1.0	1.0	0.9	0.9
Malaysia	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7
Taiwan	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.4	0.4
Hong Kong	0.9	1.0	0.6	0.6	0.5	0.5	0.4	0.3	0.3	0.3
Other Countries	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.4
Total East Asia	**45.0**	**45.6**	**38.3**	**43.5**	**48.3**	**51.6**	**55.5**	**62.5**	**69.0**	**71.5**
Africa										
Morocco	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Tunisia	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Algeria	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2
Other Countries	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total Africa	**1.2**	**1.2**	**1.2**	**1.1**	**1.2**	**1.1**	**1.1**	**1.2**	**1.2**	**1.2**
Oceania										
Australia	0.5	0.6	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.7
Total Oceania	**0.6**	**0.6**	**0.7**	**0.8**	**0.8**	**0.7**	**0.8**	**0.7**	**0.8**	**0.7**
CIS										
CIS	1.9	1.7	1.7	1.8	2.0	2.5	3.5	5.1	7.1	8.7
Total CIS	**1.9**	**1.7**	**1.7**	**1.8**	**2.0**	**2.5**	**3.5**	**5.1**	**7.1**	**8.7**
World Total	**263.7**	**274.4**	**259.4**	**271.7**	**278.1**	**286.9**	**262.4**	**273.8**	**247.8**	**249.6**

Jewelry exports also fell a fair amount. Shipments to the US market, Italy's largest destination, dropped heavily, largely as rival producers, in particular Mexico, India and China, took market share. Exports to Italy's second largest export market, the United Kingdom, fell by even more, around a quarter, again as a result of lower cost producers taking market share. Shipments to most other EU countries also fell, if not as sharply, and again due to growing competition, a trend not helped by the swing to gemset in many western markets which tends to favor rivals such as India. Not all markets shrank in 2005, however. Exports (official and unofficial) to eastern Europe grew and several of the Latin American countries took greater volumes. The largest gain, basis the official statistics, was a little surprisingly to Hong Kong.

Assessing the true level of exports is made more complex by the possible inclusion of re-exports in published numbers. Unofficial exports also featured though only on a small scale, being far less proportionately important than for gold, as is the triangulation of trade flows to disguise origin. Lastly, there were some incidences of production relocation, though most just involved the hand finishing of Italian fabricated semis.

Silverware offtake in Italy suffered another slump in 2005, reaching a level roughly a third of its size ten years ago. Unsurprisingly, the year was characterized by a number of high profile bankruptcies. The decline in fine weight was partly so severe as one of the weakest areas was traditional, mid-market center pieces such as trays which use a thick plate. In contrast, thin plate (usually 0.25-0.1mm, sometimes even less), which is used in such areas as low cost photoframes, performed much better. Some more mid-market areas, such as giftware and even cutlery, were fairly stable, though the market polarization seen in jewelry (see page 64) featured in silverware too; the very top end (which can include such striking items as silver and murano glass statuettes, cutlery inlaid with lapis lazuli or photoframes with 1.5kg of silver) did well.

Official Italian Jewelry Exports



Consumer Trends & Jewelry Consumption

Changes in taste are important in any review of jewelry consumption since, being a discretionary good, the impact of such factors as fashion can be critical. This is particularly true for silver jewelry as the vast bulk is consumed in largely price insensitive countries lacking an investment rationale for acquisition. Intangible factors seem needed to explain last year's changes in US sales, for example - those for gold jewelry fell (by 0.4%) but silver jewelry sales rose a few percent. This divergence was more marked for France; all retail sales rose by 1%, silver jewelry sales (on a piece basis) rose by 3%* yet gold jewelry fell by 4%*.

This leads us to this season's favored choice of metal color. Much has been made in the last year or two in the glossy magazines of the return of the 'yellow' look. However, there is scant evidence of this materializing generally, for example in mainstream US malls. This left room for silver to take market share from gold at the bottom end. In Germany for example, silver jewelry consumption rose (perhaps by over 5%) while the fall for gold jewelry was greatest for 8-karat pieces, with some fabricators quitting this segment.

The above was due in part to the white look's continued hold on the youth market with its ageist disdain of yellow gold. Silver has also benefited from market polarization - consumers focusing on expensive, heavily branded items (such as diamond-set watches) or low-priced accessories that can be discarded one season later (and which are increasingly a self-purchase rather than a gift).

Silver, however, has not been the sole beneficiary of this; steel jewelry has also done well recently. In some markets, for example Italy, steel's growth has even cut silver jewelry sales, thanks mainly to steel's heavy promotion and successful branding. Given Italy's reputation as a style leader, some may fear falling sales there may presage declines elsewhere, but some comfort can be drawn from the fact that silver in Italy has never really been perceived as sufficiently precious for proper jewelry. Nonetheless, steel's success highlights the power of advertising, and not forgetting the heavy promotion that rival, discretionary goods, such as cell phones or luxury accessories, receive.

Another factor behind the success of steel is the cultural change of it being increasingly acceptable for men to wear jewelry. This retains a non-precious focus, using such materials as titanium or leather, but there has been some benefits for silver, certainly more so than for gold. The use of non-traditional materials has been a significant factor in cutting gold consumption in weight terms but silver has not suffered from this as much, nor is it expected to do so. This is largely price point driven - the cost advantage, for example, of replacing a pendant's metal chain with say a silk cord is far less for silver than gold. Such styles do exist in silver but are far less numerous.

While non-traditional material incorporation may have been limited, the weight of silver used in jewelry is under pressure from the ongoing swing to gemset. In France, for example, sales (by piece) of plain silver from 2002 to 2005 rose by 13% yet gemset soared by 76%*. The drivers of this are a combination of the promotion of the stones (especially diamonds), the ability to offer greater novelty (important for one-season accessory pieces) and the opportunity for distributors to earn fatter and less transparent margins.

In terms of styles, one interesting change last year was the rehabilitation of the chain. This strode back onto the runway worn in a multi-sized layered manner, often accessorising clothes or sporting unique charms and so forth to personalise outfits in an age of mass branding. While at present a high fashion niche and more gold focused, the weight potential of resurgent sales of mass market silver chains could prove significant.

** figures courtesy of Société 5*

Illustrations of 2006 Trends

from top - men's steel bracelet by Palm Beach Jewelry (photo courtesy of VogueGioiello.net); silver & enamel charm bracelet; silver & cubic zirconia bracelet (photos courtesy of Gecko Trading Ltd)

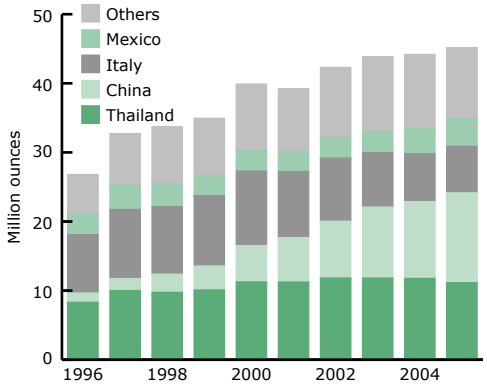
The official statistics show a 9% drop in the gross weight of silverware exports but, on a fine basis and allowing for possible errors, the true drop looks higher at more like 15%. The weakness of Italy's largest market, the United States, whose take fell by 23% in gross weight terms, explained much of this overall drop. Sales to the, often newly, wealthy of Russia, China and the Middle East rose but this is often not reflected in export statistics as much is bought on shopping visits to the West. Domestic sales fell by a not dissimilar amount to exports. There were some inroads made by imports but the bulk of the drop was due to a continuation of the secular decline in consumption, in particular of traditional heavy items.

The sharp drop in **French** jewelry and silverware offtake was chiefly due to the relocation of jewelry semis fabrication. Jewelry consumption, in contrast, rose slightly last year, imports' market share held roughly constant and exports grew modestly. **German** jewelry and silverware fabrication also fell last year, though by a more modest 6%. This was caused mainly by another marked fall for silverware, as a result of the secular trend of declining local consumption plus further growth of imports' market share. Jewelry fabrication, however, was broadly stable as the benefits of higher exports and domestic consumption were eroded by market share loss to imports, in particular from China and Thailand.

In the **United Kingdom**, both imports and locally fabricated silverware and jewelry experienced double digit declines last year though the number of articles delivered to retailers registered a smaller year-on-year fall. This apparent disparity was due to a shift to lighter, stone-set pieces away, for example, from heavier chains, which were a feature of the UK retail market in 2004. As a result, although units shipped to retailers last year were quite weak, the trend towards lower average weights, described above, exacerbated this development, resulting in a greater year-on-year fall in the fine quantity of silver being imported and manufactured domestically.

Robust consumption figures (local fabrication and implied imports rose sharply in 2005) marked another good year for **Russia** with double-digit growth in both the jewelry and silverware categories. The improvement was reflected in a sharp rise in the hallmarking statistics, which reported an 8% increase in the number of silver pieces stamped and a 24% year-on-year rise in the absolute weight.

US Silver Jewelry Imports



North America

North American fabrication recorded its fourth successive year of growth in 2005. However, last year's rise at just under 1% suggested that output was reaching a peak. Furthermore, the hike in the silver price in the fourth quarter and in the first few months of this year has impacted demand, which is expected to fall back in 2006.

Following a period of healthy increases during the late 1990s and the early part of this millennium, the rate of growth in **US** jewelry and silverware demand has slowed in the past two years. As in 2004, there was only moderate growth in the US silver jewelry industry although this was enough to push up total jewelry and silverware fabrication for the fourth year in succession. Turning to imports, in 2005 these rose at a similar rate to US jewelry production, with sharply higher imports from both China and India offsetting lower shipments from Thailand and Italy.

In contrast, the fabrication of silverware products fell last year. This was again due to a structural shift in consumer tastes for these products, with demand instead shifting to steel and, to a lesser extent, silver plated items.

Mexican jewelry and silverware fabrication is estimated to have increased by just over 1% last year to 16.4 Moz (510 t). This overall flat picture was the product of a reasonably strong first half, helped by some growth in exports to the United States, and a soft second half, with demand in the latter period suffering from the rise in the silver price. The United States remains the destination for most of Mexico's jewelry exports. Although for the year as a whole, there was some incremental growth in shipments to the United States, the official trade data

exaggerates the gain. Part of the explanation for the discrepancy is the scope for confusion between semis and jewelry. Other factors are a shift to more official trade and that the higher silver price has also boosted export values (but not the metal content). Finally, more stone-set pieces are being exported.

Middle East

Jewelry and silverware fabrication in the Middle East fell by 6% in 2005 as gains for some were outweighed by a slump in Egypt and Turkey.

The year saw contrasting trends in the **Turkish** silver jewelry market. While retail consumption remained strong, domestic fabrication weakened significantly further. This was due to increasing competition from lower cost countries, in particular China and Thailand. The rise in market share, accounted for by rising East Asian jewelry imports into Turkey, has forced an increasing number of Turkish companies to move their factories to these centers, with this relocated production then imported into Turkey. Although this trend was by no means new to 2005, the pace of these offshore moves quickened last year, resulting in a sharp fall in local jewelry fabrication.

The slide in **Egyptian** offtake last year was due to weakness in both jewelry and silverware. The higher local silver price hit both areas, with the domestic market seeing a shift to lighter jewelry articles, while a rise in demand for plated products resulted in lost market share for sterling silverware. **Israeli** jewelry and silverware fabrication rose at the margin in 2005. Both jewelry and solid silverware, which is dominated by religious pieces, grew, driven in large part by higher export sales.

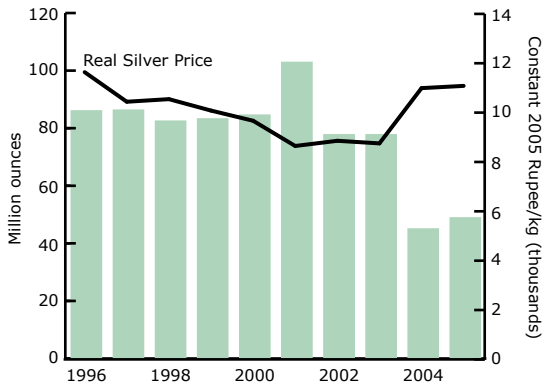
Indian Sub-Continent

Indian jewelry and silverware fabrication rose by 8.5% to 48.9 Moz (1,520 t) in 2005. Notwithstanding this increase, offtake was far lower than the peak seen in 2001 of around 103 Moz (3,200 t) and still 37% lower than in 2003, which was in itself a weak year for demand.

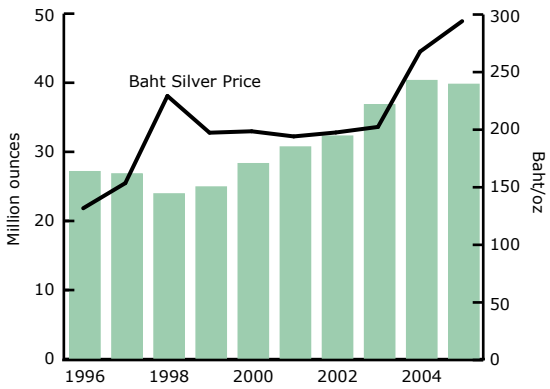
Those who have delved into the trade flows chapter (Chapter 6) first will be slightly surprised by the modest demand growth recorded here. In that chapter, we noted that gross Indian bullion imports rose a spectacular 70%, a market reality that would have in the past been expected to translate into far higher jewelry and silverware demand. There were both non-jewelry market and jewelry market specific factors explaining why this did not transpire, the former discussed in more detail in Chapter 6.

As far as the jewelry and silverware market itself is concerned, we should note from the outset that some trade sources are of the opinion that demand (certainly for silver jewelry) actually fell in 2005. At first sight, this may appear plausible given the price action during the year and India's notorious price sensitivity. The price averaged over Rs.11,000 per kilogram in 2005, way above what would have constituted the seemingly impenetrable price barrier of Rs.8,000/kg of only two years ago. Quite clearly, price expectations have shifted markedly upwards recently, as they have in gold, and this has certainly mitigated the price effect. However, all things being equal, one might reasonably have expected demand to fall in the face of higher prices (as things currently stand, our view is that the "reservation" price level has probably shifted to around Rs.10,000/kg). Our view is that offtake did increase in spite of higher prices.

Indian Jewelry and Silverware Fabrication



Thai Jewelry and Silverware Fabrication



The price did, however, have a disproportionate impact on the relative growth rates in jewelry and silverware (it is GFMS' intention to publish a split between these two markets later in 2006). Our market information points very strongly to silverware having been less affected by recent price moves, reflecting perhaps the different motivations for buying silver in the first instance. The most obvious of these is the gifting motive behind many silverware purchases (particularly during Diwali) compared with the reasons for buying jewelry which are more closely aligned with investment and marriages. Certainly, GFMS data for 2005 points to there having been good growth last year in the gifting of coin, bar and silverware by individuals and corporates, pointing perhaps to one future direction of the market.

Another factor to consider is the apparent secular shift away from silver jewelry. As GFMS have noted before, the issue of quality and purity of the white metal has been a major cause of concern for many years, and has prompted buyers to look to alternatives such as gold and diamond jewelry. Interestingly, these quality issues do not appear to have adversely affected decisions to buy and gift silverware to the same degree (perhaps reflecting the fact that silverware is not seen as primarily an investment purchase). The problem of under-karat jewelry has been accentuated by the sharp rise in the price, and it seems that some consumers have simply decided to turn away from jewelry altogether.

Coupled to this, there has been tremendous growth in costume jewelry (see the industrial section earlier in this chapter), which has adversely impacted silver jewelry. In effect, silver jewelry has become stuck between two stools; on the one hand, consumers have been migrating up to gold when looking for an investment purchase (silver has always been seen as a lower cost substitute for the yellow metal), while on the other hand they have been shifting down to costume jewelry when looking for a purely adornment item (although, some costume jewelry is being sold on a buyback basis suggesting that investment can be a motivation here too).

In spite of the negative impact of rising prices and secular shifts in the market place, why is it that demand in jewelry and silverware rose in 2005 (albeit at different rates)? Our view is that growth across all sectors of the economy drove offtake higher. Firstly, agricultural output rose by 3%, modestly boosting rural incomes and silver offtake. This was in spite of a monsoon that was only good in parts. For example, heavy rains caused severe floods in parts of the country, adversely affecting crops, but elsewhere supported higher production levels. The real boost to offtake, however, came from growth in the service and industrial sectors feeding through to the gifting of (particularly) silverware (as well as coin and bar as mentioned above). On current trends, it seems likely that the strength of these two sectors of the economy and their impact on the gifting market will become increasingly important for silver demand.

Turning to the first few months of 2006, it is not surprising that demand all but ceased as prices scaled new record highs (reaching all of Rs.22,950/kg in mid-April). Significantly, however, investment demand in silver coins and bars has re-emerged as investors perceive further upside potential for the price.

East Asia

Jewelry and silverware demand in **Thailand** last year eased by a marginal 1.5%, after six years of continued growth, to 39.8 Moz (1,237 t). Despite this fall, Thailand became the second largest fabricator behind India in this segment of the market, after Italy's 10% fall in 2005.

As noted in previous surveys, the changes to Value Added Tax (VAT), introduced in mid-2003, have led to far greater transparency in the industry, especially among the larger fabricators, and annual increases in official bullion import statistics are proof that a far greater proportion of trade is now being captured. However, contacts in Thailand advise that the 'underground' trade still exists, especially in the export of jewelry where substantial quantities are hand carried by the 'back pack' trade to be sold in small shops or markets in the visitors' country of origin. Thai customs authorities are reported to have cracked down on these shipments but a large proportion is still believed to leave the country undetected.

Several traders expressed concern over the strong competition in the lucrative US and European markets. There has been a sharp rise in local fabricators vying for this export business but of greater importance is other competing nations like China, India and Mexico who are eroding the Thai market share. Jewelry exports to the United States were down 20% while China, for example, reported a 15% rise in exports in 2005. China looms as the major competitor for Thailand as the former has far

lower production costs and has modernized machinery to produce high quality plain and gemset jewelry.

Margins on silver jewelry, typically higher then gold, have been eroded by competition in recent years with the labor charges, which make up to 35% of costs, often forced down to remain competitive. Movement of the spot price of silver does not have an immediate impact on the price of each piece as the precious metal contributes only 30% of the total cost, though it is the fabricator that often absorbs the rise, reducing profitability. Last year saw a decline in plain silver jewelry demand with orders for higher value, more elaborate stone-set pieces on the increase. This trend assists fabricators as margins on this range of products are higher then plain jewelry though the volume of silver required is reduced.

The outlook for 2006 is that Thai offtake will drop sharply as exports react to the higher silver price. However, as other precious metal costs have also risen sharply, silver may become the more affordable alternative.

Chinese silver jewelry and silverware offtake rose by an impressive 20% in 2005 to 16.4 Moz (511.2 t). The growth in popularity of silver jewelry in the past year has been remarkable though understandable in the context of soaring precious metal prices, industry profit margins and design trends. Firstly, the gold price has continued to perform strongly over the year which has given consumers a reason to explore alternative types of jewelry. The image of silver as a 'cheap' or 'old-fashioned' jewelry metal is fading, partially because of industry efforts to promote silver because of its better profit margins. In addition, jewelry exports also performed well, with shipments to the United States, the United Kingdom and other European markets all rising.

Demand for jewelry and silverware in **South Korea** rose by 1% to 4.7 Moz (147 t). Consumer spending last year began to show signs of recovering from a two year slump brought on by a credit card induced shopping spree. The increased local demand made up for an almost 30% decline in exports (Korean trade data suggests exports to the key US market were down over 40%). Exports were also hit hard by silver's rally towards year end.

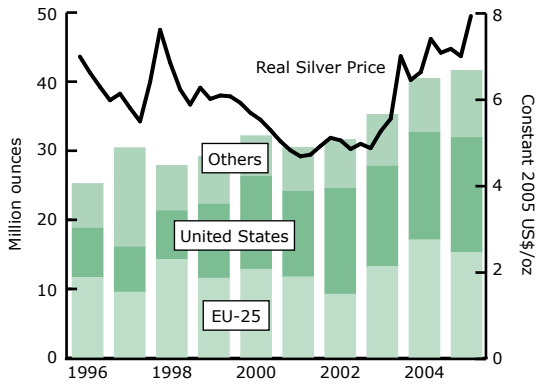
Indonesian silver jewelry and silverware fabrication demand dipped by 2% last year to 4.8 Moz (148 t). After the industry rebounded in 2004 after recovering from the terrorist bombings on Bali in 2002, the resort island (home to much of Indonesia's silver fabrication) was again the target of terrorist attacks in October last year. The 'back packer' trade, which plays a significant role in the distribution of Indonesian jewelry and silverware, was again severely impacted by the bombing and the subsequent decline in tourist visitors. Exporters of Indonesian jewelry also experienced a difficult year with official trade flow statistics indicating a significant decline in exports to the United States after strong growth the previous year. UK imports of Indonesian jewelry and silverware increased marginally though fabricators will be encouraged by the rise in exports to Australia and Japan.

Coins & Medals

• ***Weaker European fabrication, in particular, contributed to the 4% fall in global coin minting.***

Following three years of successive increases, world silver coin fabrication edged lower in 2005, but remained comfortably above the levels seen during much of the past ten years. In spite of higher US and German

World Coin Fabrication



US Silver Eagle Coin Sales

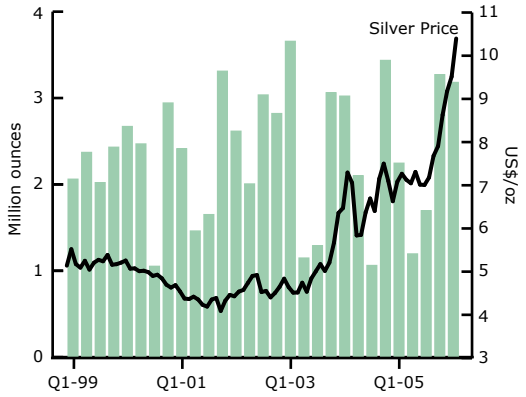


Table 7 - Silver Fabrication: Coins and Medals (including the use of scrap - million ounces)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
United States	7.1	6.5	7.0	10.7	13.4	12.3	15.3	14.5	15.5	16.6
Germany	6.2	5.3	10.0	7.0	8.8	8.1	6.0	9.7	9.7	10.4
Mexico	0.5	0.4	0.2	0.4	0.7	1.1	1.1	1.5	2.7	2.6
China	1.4	2.8	2.4	2.3	1.2	1.5	2.1	2.3	2.3	1.8
Spain	2.8	1.8	1.7	1.5	1.8	1.8	1.5	1.1	2.2	1.7
Canada	0.7	0.7	1.1	1.4	1.0	0.9	1.0	0.3	1.3	1.6
Australia	0.8	0.8	1.0	0.9	1.0	0.8	0.6	1.3	1.2	1.0
Austria	0.4	0.3	0.3	0.3	0.2	0.3	0.4	0.4	0.5	0.6
France	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.5	0.5
Poland	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.6	0.5
UK & Ireland	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5
Russia	0.6	0.4	0.2	0.2	0.1	0.2	0.3	0.4	0.4	0.4
Switzerland	0.6	0.6	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3
Portugal	0.8	0.8	1.0	0.9	1.2	0.7	0.0	0.8	2.4	0.3
Thailand	0.5	0.3	0.2	0.1	0.2	0.2	0.3	0.3	0.1	0.2
Other Countries	1.7	8.6	1.2	1.9	1.2	1.1	1.2	1.2	2.1	1.6
World Total	**25.2**	**30.4**	**27.8**	**29.1**	**32.1**	**30.5**	**31.6**	**35.6**	**42.3**	**40.6**

fabrication, lower minting in a number of other European countries, together with weakness in China, resulted in a 4% fall.

In the **United States**, minting of the one-ounce Eagle silver bullion coin fell back by nearly 13% to its lowest level since 1998. The weakness was almost entirely concentrated in the first half, with production in each month (with the exception of March 2005) sharply lower on a year-on-year basis. The recovery which followed, produced a third quarter year-on-year rise of 60%, although this proved to be short-lived, with minting during the final three months of 2005 some 5% lower than the corresponding period a year ago. In spite of the slowdown in the primary silver Eagle market, minting of silver proof sets continued to grow last year and initial estimates suggest that the increase in this area comfortably outweighed the decline noted above, leaving total US coin production some 7% higher.

German coin fabrication rose to a record level in 2005 of 10.4 Moz (334 t), although only a small amount of new bullion was used last year, the majority being manufactured from recycled circulating coins (in 2004, Germany's coin minting was entirely satisfied by old scrap). As in recent years, the coins were produced in sterling silver, each weighing 18 grams with a €10 face value. The five core issues celebrated, in sequential order: the Bayerischer Wald National Park; the 200th Anniversary of the death of Friedrich von Schiller; the centenary of Albert Einstein's discovery of Relativity; 1,200 years of Magdeburg and the centenary of Bertha von Suttner's Nobel Peace Prize. In addition and for the third year, a special issue commemorating 2006's German Soccer World Cup was issued. In this regard, it is worth noting that 2006 will mark the last in this series, after which minting is expect to return to the levels seen at the turn of the millennium.

In **Spain**, fabrication was notably weaker last year, principally due to lower minting of the €12 silver circulating coin which, in 2005, celebrated the fourth centenary of the publication of Don Quixote. This issue accounted for nearly 1.9 million coins, which fell short of the 2.5 million pieces minted in 2004. However, the coin issue that year was unusually high and, excluding 2004, last year's release was the highest (in terms of consumed silver) since 2001. The other notable decline, within Europe, was seen in **Portugal**, although 2004's total was boosted by the production of commemorative issues celebrating the country's soccer championship, of which there was no repeat last year.

Elsewhere, **Mexican** production remained in the top three, largely due to the country's ongoing circulating coin program, while **China** registered lower coin fabrication in 2005, largely due to fewer commemorative coin issues during the year.

8. Appendices

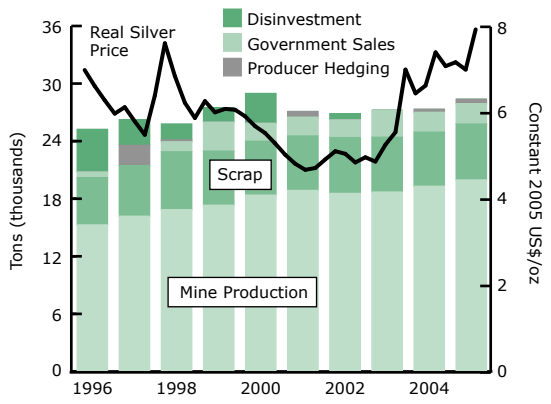
Contents

Appendix 1

Table 1 - World Silver Supply and Demand (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Supply										
Mine Production	15,270	16,173	16,857	17,316	18,373	18,861	18,552	18,693	19,297	19,954
Net Government Sales	589	-	1,041	3,022	1,874	1,961	1,841	2,819	2,068	2,114
Old Silver Scrap	4,925	5,265	6,032	5,636	5,611	5,674	5,818	5,710	5,636	5,826
Producer Hedging	-	2,118	203	-	-	587	-	-	312	469
Implied Net Disinvestment	4,443	2,682	1,653	1,518	3,109	-	642	-	-	-
Total Supply	**25,227**	**26,239**	**25,786**	**27,491**	**28,967**	**27,082**	**26,852**	**27,222**	**27,313**	**28,364**
Demand										
Fabrication										
Industrial Applications	9,260	9,977	9,842	10,549	11,678	10,462	10,582	10,910	11,457	12,732
Photography	6,535	6,761	7,011	7,087	6,790	6,628	6,353	5,999	5,629	5,126
Jewelry & Silverware	8,203	8,533	8,067	8,450	8,648	8,924	8,163	8,515	7,707	7,763
Coins & Medals	784	945	866	907	999	948	983	1,108	1,316	1,264
Total Fabrication	24,782	26,217	25,786	26,992	28,115	26,962	26,080	26,532	26,109	26,885
Net Government Purchases	-	22	-	-	-	-	-	-	-	-
Producer De-Hedging	445	-	-	499	852	-	772	651	-	-
Implied Net Investment	-	-	-	-	-	121	-	39	1,204	1,478
Total Demand	**25,227**	**26,239**	**25,786**	**27,491**	**28,967**	**27,082**	**26,852**	**27,222**	**27,313**	**28,364**
Silver Price (London US$/oz)	5.199	4.897	5.544	5.220	4.951	4.370	4.599	4.879	6.658	7.312

World Silver Supply



World Silver Demand

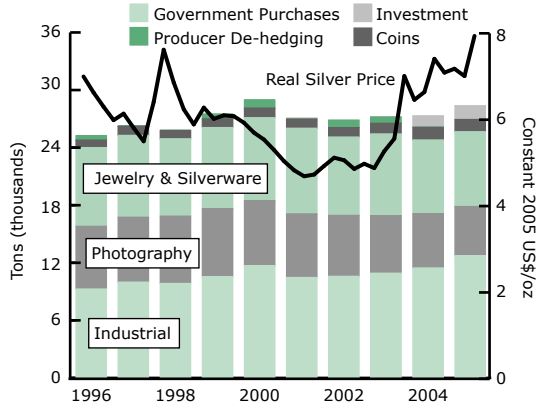


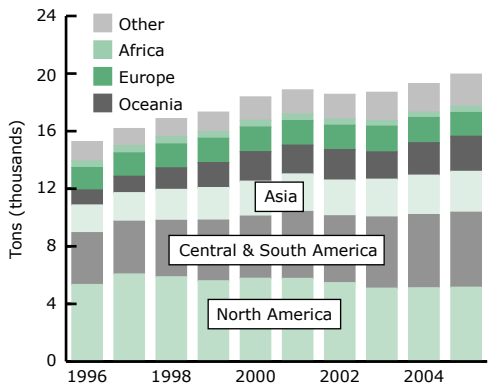
Table 2 - World Silver Mine Production (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Europe										
Poland	953	1,050	1,119	1,115	1,140	1,183	1,211	1,376	1,362	1,261
Sweden	241	265	268	275	294	275	293	307	291	284
Romania	44	43	39	39	34	38	32	29	28	27
Portugal	34	34	31	27	21	23	19	22	25	24
Bulgaria	35	31	25	21	18	24	25	22	19	20
Yugoslavia (former)	92	65	56	31	31	21	17	6	4	8
Czech & Slovak Republics	7	8	8	8	7	8	7	7	7	7
Ireland	15	13	11	10	17	9	8	9	7	6
Spain	103	66	47	118	115	55	13	2	4	4
Italy	9	4	4	4	2	2	2	2	3	3
Greece	16	36	45	40	31	62	75	4	0	2
France	3	2	1	1	1	1	1	0	1	1
Norway	4	4	4	0	0	0	0	0	0	0
Total Europe	**1,554**	**1,620**	**1,658**	**1,688**	**1,711**	**1,701**	**1,702**	**1,786**	**1,749**	**1,647**
North America										
Mexico	2,528	2,679	2,688	2,483	2,620	2,760	2,747	2,569	2,569	2,870
United States	1,570	2,180	2,060	1,950	1,980	1,740	1,350	1,240	1,250	1,220
Canada	1,243	1,213	1,131	1,166	1,174	1,265	1,373	1,276	1,295	1,061
Total North America	**5,340**	**6,072**	**5,879**	**5,600**	**5,775**	**5,765**	**5,470**	**5,085**	**5,114**	**5,151**
Latin America										
Peru	1,968	2,077	2,025	2,231	2,438	2,674	2,761	2,921	3,060	3,192
Chile	1,145	1,092	1,341	1,381	1,242	1,349	1,210	1,312	1,360	1,379
Bolivia	383	386	407	424	462	381	462	491	434	399
Argentina	31	34	69	102	102	176	135	146	151	162
Honduras	38	45	46	49	53	50	56	54	50	55
Brazil	10	7	10	7	7	7	8	7	8	9
Dominican Republic	17	12	7	3	0	0	0	0	0	0
Other Countries	11	10	11	13	13	12	11	14	14	14
Total Latin America	**3,602**	**3,663**	**3,916**	**4,211**	**4,317**	**4,648**	**4,644**	**4,944**	**5,078**	**5,210**
Asia										
China	1,212	1,267	1,358	1,494	1,596	1,729	1,646	1,828	1,967	2,011
Indonesia	237	250	311	271	312	374	332	297	266	308
Turkey	90	90	87	108	109	114	114	113	126	162
Iran	67	74	77	79	83	82	82	82	84	80
India	36	50	52	60	56	54	59	60	64	65
Japan	89	87	94	94	104	80	81	79	76	54
Papua New Guinea	60	49	58	59	73	69	64	63	54	49
Mongolia	29	31	33	33	32	37	35	34	37	38
North Korea	40	36	32	26	22	19	20	25	25	25
Thailand	8	3	4	5	5	6	22	18	16	20
Saudi Arabia	16	16	14	11	9	10	10	17	15	14
Philippines	25	20	19	18	23	34	9	7	8	8
Malaysia	10	10	7	3	0	0	0	0	0	0
Other Countries	4	2	6	4	2	2	5	3	5	6
Total Asia	**1,923**	**1,986**	**2,152**	**2,264**	**2,428**	**2,609**	**2,481**	**2,628**	**2,744**	**2,839**

Table 2 - World Silver Mine Production (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Africa										
Morocco	200	260	306	278	289	283	263	193	209	231
South Africa	171	163	157	152	144	126	118	108	77	87
Dem. Rep. of the Congo	1	1	1	1	1	1	3	36	34	54
Namibia	64	39	14	0	17	19	20	29	27	30
Zambia	9	7	8	5	5	5	6	6	8	9
Zimbabwe	10	10	6	6	4	4	4	4	4	3
Other Countries	12	12	13	15	14	18	18	21	24	24
Total Africa	**466**	**490**	**504**	**457**	**474**	**457**	**432**	**398**	**383**	**439**
Oceania										
Australia	1,010	1,106	1,469	1,709	2,024	1,970	2,077	1,864	2,222	2,407
New Zealand	31	33	26	24	23	27	29	30	30	32
Fiji	2	2	2	2	1	2	2	1	1	1
Total Oceania	**1,043**	**1,141**	**1,496**	**1,736**	**2,048**	**1,999**	**2,108**	**1,895**	**2,254**	**2,439**
CIS										
Russia	758	649	605	617	628	646	772	1,056	1,166	1,314
Kazakhstan	482	440	527	642	890	940	849	802	703	805
Uzbekistan	70	77	82	64	62	53	49	53	60	68
Armenia	28	31	33	33	35	38	39	41	40	37
Tajikistan	3	3	3	3	4	4	4	4	4	3
Kyrgyz Republic	0	1	1	1	1	1	1	1	1	1
Total CIS	**1,341**	**1,202**	**1,252**	**1,360**	**1,620**	**1,682**	**1,715**	**1,957**	**1,974**	**2,229**
World Total	**15,270**	**16,173**	**16,857**	**17,316**	**18,373**	**18,861**	**18,552**	**18,693**	**19,297**	**19,954**

World Silver Mine Production



Silver Producer Hedging: Outstanding Positions

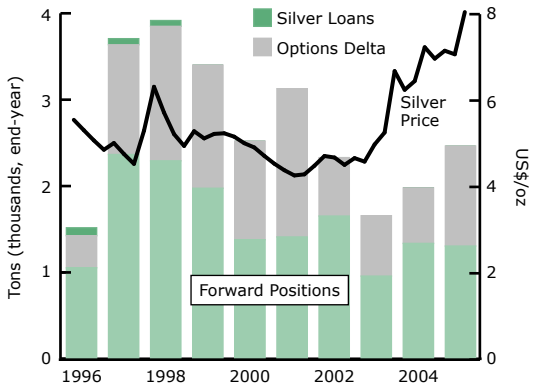


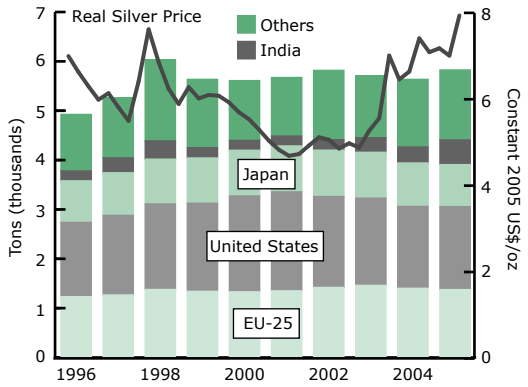
Table 3 - Supply of Silver from the Recycling of Old Scrap (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Europe										
Germany	480	500	510	500	520	523	520	592	568	546
UK & Ireland	236	261	337	358	338	346	423	404	386	360
Italy	110	105	145	105	105	110	113	112	104	133
France	140	133	127	124	110	122	120	126	118	127
Netherlands	39	40	40	40	45	42	44	44	45	42
Austria	55	56	57	52	50	62	58	48	50	40
Sweden	34	35	34	34	33	33	32	32	32	31
Belgium	20	20	20	20	20	21	20	20	20	20
Denmark	19	19	19	19	18	18	17	17	17	16
Czech & Slovak Republics	28	25	22	19	19	14	13	13	14	14
Portugal	13	14	14	14	14	13	14	14	14	13
Spain	14	14	13	12	13	13	13	14	14	13
Finland	15	15	15	15	13	13	12	13	12	12
Switzerland	52	24	14	10	10	10	10	10	10	10
Norway	30	30	25	29	33	21	21	14	10	9
Other Countries	36	37	36	36	35	34	36	34	34	32
Total Europe	**1,321**	**1,328**	**1,428**	**1,387**	**1,376**	**1,395**	**1,466**	**1,506**	**1,446**	**1,418**
North America										
United States	1,505	1,612	1,733	1,785	1,941	2,005	1,842	1,766	1,659	1,680
Mexico	75	134	330	71	48	44	48	55	60	64
Canada	55	50	60	50	45	45	44	47	44	46
Total North America	**1,635**	**1,796**	**2,123**	**1,906**	**2,034**	**2,094**	**1,934**	**1,868**	**1,763**	**1,790**
Latin America										
Brazil	60	50	50	55	48	50	32	36	32	32
Argentina	20	20	20	20	20	23	20	20	20	20
Chile	14	14	17	13	12	12	12	12	12	14
Other Countries	23	23	29	27	25	24	24	25	24	29
Total Latin America	**117**	**107**	**116**	**115**	**105**	**109**	**88**	**93**	**88**	**95**
Middle East										
Turkey	60	50	53	43	40	40	45	55	60	64
Saudi Arabia	40	101	64	232	70	24	224	23	40	50
Egypt	22	10	13	10	28	35	40	35	42	43
Oman	5	5	6	5	5	5	5	5	5	5
Other Countries	11	11	12	11	10	11	11	11	15	13
Total Middle East	**138**	**177**	**148**	**301**	**153**	**115**	**325**	**130**	**163**	**175**
Indian Sub-Continent										
India	200	300	370	207	200	200	210	294	324	500
Other Countries	5	10	15	11	13	15	15	15	15	16
Total Indian Sub-Continent	**205**	**310**	**385**	**218**	**213**	**215**	**225**	**309**	**339**	**516**
East Asia										
Japan	842	865	908	917	927	931	940	930	880	852
China	139	143	180	182	187	192	196	206	240	270
South Korea	107	111	244	164	164	170	180	190	195	198
Taiwan	22	24	26	28	28	28	27	30	31	32
Thailand	11	25	30	12	10	11	14	15	16	16
Singapore	11	11	12	12	12	12	13	13	14	14
Hong Kong	9	11	15	11	11	11	12	12	13	13
Indonesia	11	11	12	13	15	13	10	10	11	11

Table 3 - Supply of Silver from the Recycling of Old Scrap (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Vietnam	11	12	12	12	11	10	9	10	10	11
Philippines	6	6	7	7	7	6	6	6	6	6
Malaysia	3	3	4	3	3	3	4	4	4	4
Total East Asia	**1,172**	**1,223**	**1,450**	**1,361**	**1,374**	**1,387**	**1,411**	**1,426**	**1,419**	**1,428**
Africa										
Morocco	14	16	17	16	16	16	16	16	40	19
Other Countries	20	17	17	17	18	17	17	17	17	17
Total Africa	**35**	**33**	**34**	**33**	**34**	**33**	**33**	**33**	**57**	**36**
Oceania										
Australia	73	71	74	75	76	74	73	65	64	55
Total Oceania	**73**	**71**	**74**	**75**	**76**	**74**	**73**	**65**	**64**	**55**
CIS										
CIS	230	220	275	240	245	252	263	280	297	312
Total CIS	**230**	**220**	**275**	**240**	**245**	**252**	**263**	**280**	**297**	**312**
World Total	**4,925**	**5,265**	**6,032**	**5,636**	**5,611**	**5,674**	**5,818**	**5,710**	**5,636**	**5,826**

World Silver Scrap Supply



World Scrap Supply, 2005

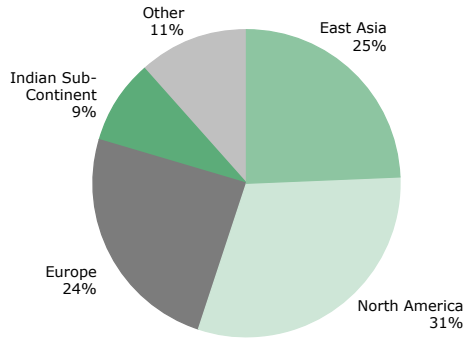


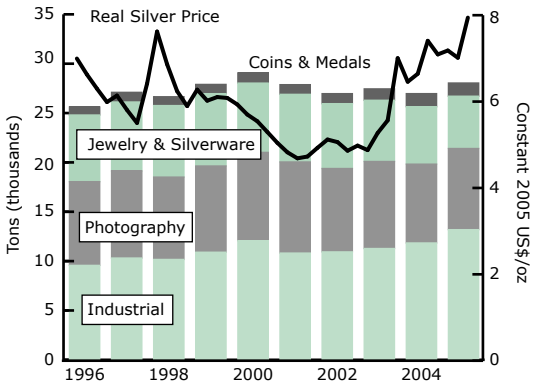
Table 4 - World Silver Fabrication Including the Use of Scrap (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Europe										
Italy	1,624	1,757	1,750	1,932	2,028	1,813	1,733	1,699	1,690	1,531
UK & Ireland	1,071	1,104	1,219	1,241	1,344	1,442	1,356	1,386	1,639	1,461
Germany	1,469	1,481	1,505	1,309	1,262	1,258	1,101	1,216	1,255	1,276
Belgium	788	847	1,052	1,167	1,098	999	958	910	858	814
France	845	892	892	837	910	909	862	819	404	389
Spain	288	271	275	234	210	171	161	148	195	168
Poland	94	104	111	117	120	107	100	120	134	145
Switzerland	243	298	332	344	281	108	106	94	96	101
Greece	133	140	126	126	104	94	87	90	90	90
Netherlands	77	74	70	88	60	57	64	60	79	69
Norway	45	46	47	94	89	71	60	60	65	56
Portugal	88	89	96	100	107	80	53	82	127	54
Austria	46	42	42	38	33	34	37	37	40	40
Sweden	46	52	43	42	41	31	33	37	38	38
Denmark	31	35	32	31	32	28	24	22	21	21
Czech & Slovak Republics	23	24	28	24	25	31	21	22	21	20
Hungary	14	14	13	14	15	13	13	13	13	12
Romania	13	11	16	13	13	12	12	12	12	12
Finland	30	29	21	21	17	14	14	13	12	12
Cyprus & Malta	13	12	11	12	12	10	10	9	9	9
Yugoslavia (former)	5	5	5	5	5	7	7	7	8	8
Other Countries	6	4	6	5	5	4	4	4	5	5
Total Europe	**6,989**	**7,332**	**7,691**	**7,793**	**7,809**	**7,291**	**6,815**	**6,862**	**6,809**	**6,331**
North America										
United States	4,592	4,890	5,277	5,782	5,988	5,276	5,503	5,452	5,608	5,892
Mexico	646	732	682	675	537	530	564	629	682	692
Canada	83	87	106	109	92	90	96	78	106	111
Total North America	**5,320**	**5,709**	**6,065**	**6,566**	**6,617**	**5,896**	**6,163**	**6,158**	**6,396**	**6,694**
Latin America										
Brazil	262	260	253	238	210	204	198	204	227	232
Argentina	118	118	97	84	70	56	58	72	72	80
Peru	34	35	34	32	30	32	32	22	21	21
Colombia	33	33	33	27	24	22	22	22	22	21
Chile	15	15	15	14	13	13	13	13	13	13
Ecuador	21	21	21	17	17	14	14	12	12	10
Other Countries	27	41	50	56	35	27	23	27	34	38
Total Latin America	**510**	**523**	**503**	**468**	**399**	**368**	**360**	**373**	**402**	**416**
Middle East										
Turkey	208	215	204	187	229	171	213	238	255	228
Israel	116	125	120	120	112	102	103	101	103	106
Egypt	70	65	58	63	64	55	49	57	62	55
Iran	54	49	42	43	45	48	43	45	47	50
Other Countries	44	54	54	57	60	57	56	56	59	61
Total Middle East	**492**	**508**	**478**	**469**	**509**	**432**	**464**	**496**	**526**	**501**
Indian Sub-Continent										
India	3,801	3,824	3,567	3,779	4,075	4,789	3,809	3,810	2,463	3,200
Bangladesh & Nepal	180	200	160	178	187	185	150	140	132	116
Other Countries	84	127	87	105	98	67	66	66	71	73
Total Indian Sub-Continent	**4,065**	**4,151**	**3,814**	**4,062**	**4,360**	**5,041**	**4,025**	**4,016**	**2,666**	**3,389**

Table 4 - World Silver Fabrication Including the Use of Scrap (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
East Asia										
Japan	3,487	3,955	3,508	3,809	4,200	3,711	3,693	3,604	3,893	4,006
China	890	1,003	1,055	1,030	1,047	1,109	1,327	1,469	1,624	1,726
Thailand	859	843	751	779	885	961	1,014	1,155	1,258	1,242
South Korea	575	579	429	519	611	531	555	596	617	628
Taiwan	198	214	210	210	293	263	279	319	351	364
Indonesia	104	126	84	99	121	132	148	153	170	167
Hong Kong	117	138	112	120	138	100	105	99	107	110
Vietnam	21	22	19	22	22	23	26	28	30	32
Myanmar, Laos & Cambodia	34	30	25	28	26	28	30	32	28	28
Malaysia	12	13	12	15	18	18	19	21	22	23
Other Countries	11	10	11	12	13	14	14	15	14	15
Total East Asia	**6,308**	**6,931**	**6,216**	**6,644**	**7,372**	**6,891**	**7,210**	**7,490**	**8,114**	**8,339**
Africa										
Morocco	18	20	18	17	18	19	18	18	19	19
Tunisia	9	10	10	10	10	10	10	11	11	11
South Africa	9	8	8	8	8	7	7	8	8	8
Algeria	8	7	6	6	6	6	5	6	6	6
Libya	6	4	4	4	4	4	4	4	4	4
Other Countries	7	8	8	8	8	8	8	8	9	9
Total Africa	**57**	**56**	**53**	**53**	**54**	**53**	**52**	**54**	**57**	**57**
Oceania										
Australia	162	161	176	180	218	184	180	193	176	121
New Zealand	1	1	1	1	1	1	1	1	1	1
Total Oceania	**162**	**162**	**177**	**181**	**219**	**186**	**181**	**195**	**177**	**122**
CIS										
CIS	878	846	789	757	775	804	810	887	963	1,036
Total CIS	**878**	**846**	**789**	**757**	**775**	**804**	**810**	**887**	**963**	**1,036**
World Total	**24,782**	**26,217**	**25,786**	**26,992**	**28,115**	**26,962**	**26,080**	**26,532**	**26,109**	**26,885**

World Silver Fabrication



World Silver Fabrication, 2005

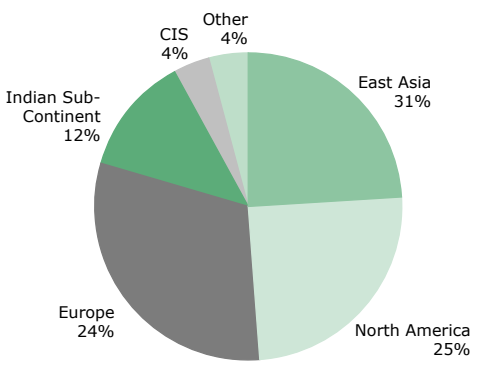


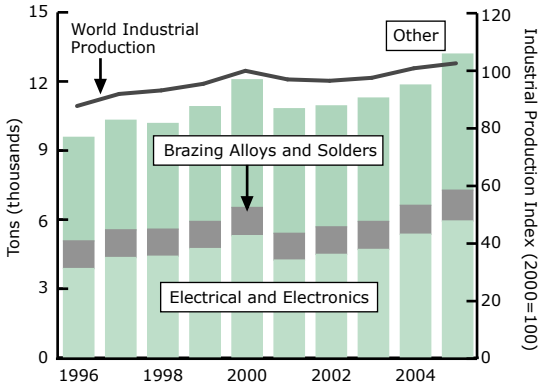
Table 5 - Silver Fabrication: Industrial Applications Including the Use of Scrap (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Europe										
Germany	535	555	571	571	647	665	659	675	730	741
UK & Ireland	381	388	506	472	549	480	466	498	518	516
Italy	348	354	329	331	340	324	324	317	357	335
France	363	418	349	362	384	496	455	430	320	317
Switzerland	215	269	311	322	259	85	84	72	76	81
Spain	61	91	95	83	62	40	40	38	65	60
Netherlands	54	52	52	52	52	48	48	47	48	49
Poland	24	23	23	23	23	22	21	21	22	22
Norway	12	12	11	45	37	23	20	19	26	22
Austria	19	18	17	17	17	17	17	17	17	17
Sweden	10	11	11	11	11	10	10	10	10	10
Czech & Slovak Republics	17	13	13	16	8	11	9	9	8	8
Belgium	10	10	10	10	10	8	8	8	8	8
Other Countries	23	23	24	23	23	21	21	22	22	22
Total Europe	**2,071**	**2,236**	**2,322**	**2,338**	**2,421**	**2,249**	**2,180**	**2,181**	**2,228**	**2,208**
North America										
United States	2,120	2,343	2,520	2,757	2,958	2,449	2,584	2,699	2,931	3,134
Mexico	81	85	92	103	107	94	93	96	93	101
Canada	20	20	17	17	17	16	16	16	16	16
Total North America	**2,221**	**2,448**	**2,629**	**2,877**	**3,082**	**2,559**	**2,693**	**2,811**	**3,040**	**3,251**
Latin America										
Brazil	102	105	108	98	98	98	98	94	115	139
Argentina	36	36	36	30	25	20	20	20	20	28
Colombia	9	9	9	7	6	6	6	6	6	5
Ecuador	2	2	2	2	2	2	2	2	2	2
Other Countries	12	12	12	12	12	13	13	12	12	12
Total Latin America	**161**	**164**	**167**	**149**	**143**	**139**	**139**	**134**	**155**	**186**
Middle East										
Turkey	38	43	41	38	44	35	39	46	51	53
Israel	33	31	31	30	30	26	24	24	24	25
Egypt	4	3	4	4	4	4	3	3	3	3
Other Countries	3	4	4	4	4	4	4	4	4	4
Total Middle East	**77**	**81**	**79**	**75**	**82**	**68**	**70**	**76**	**82**	**86**
Indian Sub-Continent										
India	1,105	1,120	992	1,180	1,435	1,579	1,381	1,382	1,053	1,670
Pakistan	14	22	15	18	16	10	8	8	9	9
Total Indian Sub-Continent	**1,119**	**1,142**	**1,007**	**1,198**	**1,451**	**1,589**	**1,389**	**1,390**	**1,062**	**1,679**
East Asia										
Japan	1,622	1,848	1,643	1,890	2,244	1,723	1,839	1,876	2,292	2,628
China	593	632	645	651	681	693	795	859	936	990
South Korea	370	382	349	379	459	387	416	452	472	481
Taiwan	181	197	193	196	274	250	270	309	339	351
Hong Kong	88	107	93	101	121	85	93	90	97	99
Indonesia	13	15	16	16	16	14	15	17	19	19
Total East Asia	**2,866**	**3,181**	**2,939**	**3,233**	**3,795**	**3,152**	**3,427**	**3,603**	**4,154**	**4,568**

Table 5 - Silver Fabrication: Industrial Applications Including the Use of Scrap (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Africa										
Morocco	7	7	7	7	8	8	8	8	8	8
South Africa	5	5	5	5	5	4	4	4	4	4
Other Countries	7	5	5	5	5	5	5	5	6	6
Total Africa	**19**	**17**	**17**	**17**	**18**	**17**	**17**	**17**	**18**	**19**
Oceania										
Australia	70	66	72	76	77	65	66	68	69	63
Total Oceania	**70**	**66**	**72**	**76**	**77**	**65**	**66**	**68**	**69**	**63**
CIS										
CIS	655	642	610	586	609	624	600	630	650	672
Total CIS	**655**	**642**	**610**	**586**	**609**	**624**	**600**	**630**	**650**	**672**
World Total	**9,260**	**9,977**	**9,842**	**10,549**	**11,678**	**10,462**	**10,582**	**10,910**	**11,457**	**12,732**

Components of Industrial Demand



World Silver Industrial Fabrication, 2005

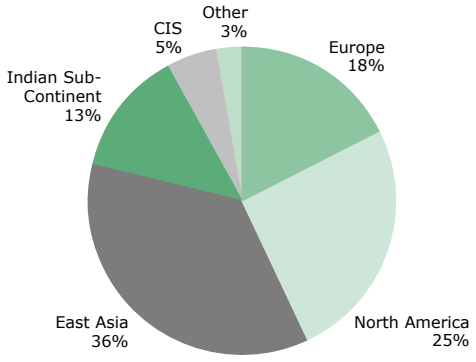


Table 5a - Silver Fabrication: Electrical and Electronics Including the Use of Scrap (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
United States	1,129	1,303	1,373	1,464	1,603	1,062	1,168	1,228	1,474	1,622
Japan	706	804	738	933	1,140	828	913	940	1,181	1,360
Germany	360	370	380	380	445	488	484	503	551	566
China	293	316	305	308	320	320	340	368	397	420
India	100	130	130	140	150	145	151	159	167	300
Taiwan	130	146	148	150	216	203	223	260	287	298
South Korea	199	201	188	206	255	224	236	260	275	280
France	195	238	207	210	228	342	309	297	252	248
UK & Ireland	155	160	210	179	211	153	164	172	180	192
Italy	103	100	90	92	95	86	87	90	118	108
Hong Kong	68	85	77	90	110	77	87	85	92	94
Brazil	45	45	45	40	40	40	40	38	52	66
Mexico	34	36	40	60	64	56	56	58	56	64
Turkey	28	31	28	24	28	22	25	30	33	34
Australia	16	15	17	18	19	18	20	21	21	22
Netherlands	20	18	18	18	18	16	16	16	16	17
Switzerland	127	172	228	232	165	12	12	14	14	13
Spain	28	29	30	30	9	0	0	0	10	10
Austria	7	7	7	7	7	7	7	7	7	7
Romania	3	3	4	4	4	4	4	4	4	4
Egypt	4	3	4	4	4	4	3	3	3	3
World Total	**3,749**	**4,212**	**4,266**	**4,588**	**5,131**	**4,106**	**4,345**	**4,552**	**5,191**	**5,729**

Table 5b - Silver Fabrication: Brazing Alloys and Solders Including the Use of Scrap (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
China	170	179	196	198	208	215	247	270	301	320
United States	255	260	269	280	272	258	260	247	228	240
India	65	50	47	50	55	57	60	64	67	130
Japan	160	155	130	131	137	109	104	104	116	120
Germany	90	95	97	94	101	88	95	97	100	98
UK & Ireland	72	72	75	68	72	82	72	80	88	90
Italy	65	59	54	62	65	63	64	63	64	64
Switzerland	52	52	49	48	50	41	40	42	42	48
South Korea	36	35	25	26	31	38	42	44	45	47
Taiwan	35	34	31	32	37	29	31	33	35	36
France	42	43	32	29	33	32	32	25	22	25
Brazil	27	25	25	23	23	23	23	22	23	25
Spain	18	29	32	33	33	30	30	28	25	20
Mexico	27	28	30	20	20	17	16	17	16	16
Australia	21	20	22	23	24	20	19	20	20	16
Canada	13	13	10	10	10	9	9	9	9	9
Netherlands	8	8	8	8	8	7	7	7	8	7
Austria	3	3	3	3	3	3	3	3	3	3
Israel	3	3	3	3	3	2	2	2	2	2
World Total	**1,161**	**1,163**	**1,138**	**1,140**	**1,184**	**1,123**	**1,156**	**1,176**	**1,214**	**1,316**

Table 6 - Silver Fabrication: Photographic Use Including the Use of Scrap (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Europe										
EU-25	2,193	2,282	2,400	2,396	2,253	2,225	2,081	2,022	1,915	1,700
Other	7	6	8	6	6	5	5	5	5	5
Total Europe	**2,200**	**2,287**	**2,408**	**2,402**	**2,260**	**2,231**	**2,086**	**2,028**	**1,921**	**1,705**
North America										
United States	1,863	1,955	2,147	2,285	2,185	2,037	2,017	1,832	1,716	1,753
Mexico	107	127	107	91	0	0	0	0	0	0
Total North America	**1,970**	**2,082**	**2,254**	**2,376**	**2,185**	**2,037**	**2,017**	**1,832**	**1,716**	**1,753**
Latin America										
Argentina	56	56	56	49	40	32	34	48	48	48
Brazil	105	105	100	100	76	70	64	68	68	43
Total Latin America	**161**	**161**	**156**	**149**	**116**	**102**	**98**	**116**	**116**	**91**
Indian Sub-Continent										
India	20	20	10	10	10	10	10	10	10	10
Sri Lanka	9	10	12	12	12	4	4	4	4	4
Total Indian Sub-Continent	**29**	**30**	**22**	**22**	**22**	**14**	**14**	**14**	**14**	**14**
East Asia										
Japan	1,800	1,822	1,810	1,864	1,902	1,935	1,799	1,677	1,543	1,312
China	180	187	190	114	120	140	176	180	190	167
Other Countries	1	1	1	1	0	0	0	0	0	0
Total East Asia	**1,981**	**2,010**	**2,001**	**1,979**	**2,022**	**2,075**	**1,975**	**1,857**	**1,733**	**1,479**
Oceania										
Australia	49	51	51	52	85	74	71	64	47	4
Total Oceania	**49**	**51**	**51**	**52**	**85**	**74**	**71**	**64**	**47**	**4**
CIS										
CIS	145	140	119	107	100	95	92	88	83	80
Total CIS	**145**	**140**	**119**	**107**	**100**	**95**	**92**	**88**	**83**	**80**
World Total	**6,535**	**6,761**	**7,011**	**7,087**	**6,790**	**6,628**	**6,353**	**5,999**	**5,629**	**5,126**

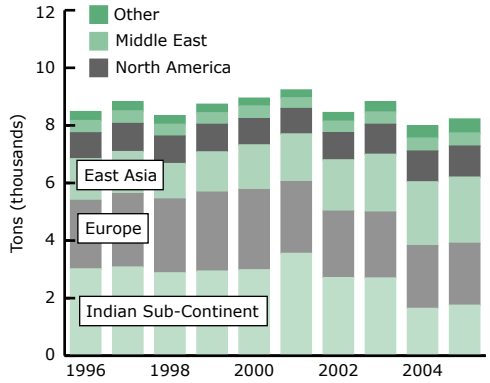
Table 7 - Silver Fabrication: Jewelry and Silverware Including the Use of Scrap (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Europe										
Italy	1,260	1,392	1,410	1,592	1,680	1,481	1,405	1,372	1,316	1,185
Germany	310	310	315	312	290	292	244	240	224	212
Poland	57	71	83	89	92	78	71	91	95	107
Greece	130	140	126	126	104	94	87	90	90	90
France	62	69	81	85	88	85	84	81	69	55
Spain	140	124	126	105	93	76	74	76	60	54
UK & Ireland	104	105	102	98	100	90	68	52	48	43
Portugal	58	59	60	66	66	55	49	52	48	42
Norway	33	33	35	47	51	46	40	42	37	32
Sweden	35	40	31	30	29	20	22	26	27	27
Denmark	28	32	29	28	29	25	21	19	18	18
Switzerland	10	9	12	10	10	10	10	10	10	10
Cyprus & Malta	13	12	11	12	12	10	10	9	9	9
Finland	26	26	18	18	14	11	11	10	9	9
Austria	13	13	15	11	8	7	7	7	7	5
Other Countries	23	26	25	24	23	23	23	23	23	22
Total Europe	**2,302**	**2,462**	**2,480**	**2,653**	**2,689**	**2,404**	**2,226**	**2,200**	**2,091**	**1,921**
North America										
Mexico	442	508	477	470	410	401	437	486	504	510
United States	387	389	391	407	427	406	426	469	478	488
Canada	41	47	55	48	45	47	48	52	50	44
Total North America	**870**	**944**	**923**	**925**	**882**	**854**	**911**	**1,007**	**1,032**	**1,042**
Latin America										
Brazil	55	50	45	40	36	36	36	42	44	50
Peru	32	33	32	30	28	29	29	19	18	18
Colombia	24	24	24	20	18	16	16	16	16	16
Ecuador	19	19	19	15	15	12	12	10	10	8
Argentina	26	26	5	5	5	4	4	4	4	4
Other Countries	31	45	54	59	37	29	25	30	37	41
Total Latin America	**187**	**197**	**179**	**169**	**139**	**126**	**122**	**121**	**129**	**137**
Middle East										
Turkey	170	171	163	147	184	135	170	188	201	171
Israel	82	92	88	89	80	74	77	75	77	79
Egypt	67	62	54	58	60	51	46	53	58	52
Saudi Arabia	12	20	16	18	20	18	18	18	19	21
Other Countries	82	80	76	79	81	83	77	79	83	86
Total Middle East	**412**	**425**	**397**	**391**	**425**	**361**	**388**	**414**	**438**	**409**
Indian Sub-Continent										
India	2,676	2,684	2,565	2,589	2,630	3,200	2,418	2,418	1,400	1,520
Bangladesh & Nepal	180	200	160	178	187	185	150	140	132	116
Other Countries	61	95	60	75	70	53	54	54	58	60
Total Indian Sub-Continent	**2,917**	**2,979**	**2,785**	**2,842**	**2,887**	**3,438**	**2,622**	**2,612**	**1,590**	**1,696**
East Asia										
Thailand	844	834	744	775	880	955	1,004	1,145	1,254	1,237
China	75	96	145	195	208	229	291	358	426	511
Indonesia	92	111	68	83	105	118	133	136	151	148
South Korea	205	197	80	140	152	144	139	144	145	147

Table 7 - Silver Fabrication: Jewelry and Silverware Including the Use of Scrap (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Japan	65	60	55	55	54	53	52	49	56	64
Vietnam	21	22	19	22	22	23	26	28	30	32
Myanmar, Laos & Cambodia	34	30	25	28	26	28	30	32	28	28
Malaysia	12	13	12	15	17	18	19	21	22	23
Taiwan	16	16	16	13	13	10	9	10	12	13
Hong Kong	29	31	19	19	17	15	12	10	10	10
Other Countries	9	9	9	9	10	11	11	11	11	11
Total East Asia	**1,401**	**1,418**	**1,191**	**1,354**	**1,504**	**1,604**	**1,726**	**1,943**	**2,146**	**2,225**
Africa										
Morocco	11	13	11	10	10	11	11	10	11	11
Tunisia	8	9	9	9	9	9	9	10	10	10
Algeria	7	6	5	5	5	5	4	5	5	5
Other Countries	12	11	11	11	12	11	11	12	13	13
Total Africa	**38**	**39**	**36**	**35**	**36**	**36**	**35**	**37**	**39**	**39**
Oceania										
Australia	17	18	22	23	24	22	23	22	23	22
New Zealand	1	1	1	1	1	1	1	1	1	1
Total Oceania	**18**	**19**	**23**	**24**	**25**	**23**	**24**	**23**	**24**	**23**
CIS										
CIS	59	52	54	57	62	78	109	158	219	271
Total CIS	**59**	**52**	**54**	**57**	**62**	**78**	**109**	**158**	**219**	**271**
World Total	**8,203**	**8,533**	**8,067**	**8,450**	**8,648**	**8,924**	**8,163**	**8,515**	**7,707**	**7,763**

World Jewelry & Silverware Fabrication



World Jewelry & Silverware Fabrication, 2005

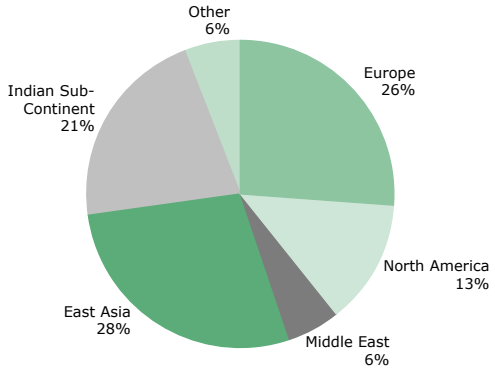


Table 8 - Silver Fabrication: Coins and Medals Including the Use of Scrap (tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
United States	222	203	219	333	418	384	476	452	483	517
Germany	194	166	312	218	273	251	187	301	301	323
Mexico	16	12	6	11	20	35	34	47	85	81
China	43	88	75	71	38	47	65	72	72	57
Spain	87	56	54	46	55	55	47	34	70	54
Canada	22	20	34	44	30	27	32	10	40	51
Australia	26	26	31	29	31	23	20	40	37	32
Austria	14	11	10	10	8	10	13	13	15	18
France	9	10	10	10	11	13	16	17	15	17
Poland	4	3	5	5	5	7	8	8	17	16
UK & Ireland	20	19	19	19	17	14	16	15	14	14
Russia	19	12	6	7	4	7	9	12	11	12
Switzerland	18	20	9	12	12	13	12	12	10	10
Portugal	25	25	31	29	36	21	0	26	75	9
Thailand	15	9	7	4	5	6	10	10	4	5
Other Countries	53	266	38	59	37	34	38	39	65	49
World Total	**784**	**945**	**866**	**907**	**999**	**948**	**983**	**1,108**	**1,316**	**1,264**

Appendix 2

Silver Prices, 1985 - 2005 (The Effects of Exchange Rates and Inflation)

1. Actual Prices* (money of the day)

	London US$/oz	India* Rupee/kg	Thailand Baht/oz	Japan Yen/10g	Korea Won/10g	Eurozone** Euro/kg	Mexico Peso/oz
1985	6.132	3,880	166.54	470	1,715	296	1.58
1986	5.465	4,105	143.71	296	1,549	195	3.34
1987	7.016	5,124	180.46	326	1,855	208	9.67
1988	6.532	6,231	165.23	269	1,536	189	14.85
1989	5.500	6,803	141.36	244	1,187	170	13.54
1990	4.832	6,779	123.62	225	1,099	129	13.59
1991	4.057	6,993	103.51	176	956	111	12.24
1992	3.946	7,580	100.24	161	991	101	12.21
1993	4.313	6,163	109.20	154	1,113	117	13.44
1994	5.285	6,846	132.92	174	1,365	141	17.84
1995	5.197	6,864	129.49	157	1,289	122	33.36
1996	5.199	7,291	131.77	182	1,345	128	39.51
1997	4.897	7,009	153.60	191	1,498	139	38.78
1998	5.544	8,016	229.30	233	2,498	160	50.65
1999	5.220	8,022	197.38	191	1,995	158	49.90
2000	4.951	8,002	198.61	172	1,800	173	46.82
2001	4.370	7,420	194.15	171	1,814	157	40.82
2002	4.599	7,934	197.57	185	1,850	156	44.41
2003	4.879	8,138	202.39	182	1,869	138	52.64
2004	6.658	10,606	267.79	232	2,452	172	75.14
2005	7.312	11,083	294.07	259	2,407	189	79.68

* Prices are calculated from the London price and the average exchange rate for the year.
In the case of India, the price shown is the one actually quoted in the Bombay market.
** From 1985 to 1998, the DM/kg price is expressed in Euro/kg at the official conversion rate of 1.95583

2. Real Prices*** (Constant 2005 money)

	London US$/oz	India* Rupee/kg	Thailand Baht/oz	Japan Yen/10g	Korea Won/10g	Eurozone** Euro/kg	Mexico Peso/oz
1985	11.129	16,714	350.59	534	4,318	438	151.60
1986	9.737	16,263	297.07	334	3,795	288	172.78
1987	12.050	18,660	363.94	368	4,412	306	215.55
1988	10.788	20,745	321.01	301	3,409	276	154.57
1989	8.664	21,334	260.66	267	2,493	241	117.43
1990	7.222	19,509	215.15	239	2,126	178	93.07
1991	5.817	17,673	170.39	181	1,692	150	68.37
1992	5.493	17,137	158.55	163	1,648	131	59.04
1993	5.831	13,100	167.10	154	1,768	145	59.18
1994	6.963	13,203	193.55	172	2,041	170	73.45
1995	6.660	12,010	178.21	156	1,844	145	101.75
1996	6.474	11,706	171.35	180	1,834	150	89.68
1997	5.958	10,501	189.15	186	1,956	160	72.97
1998	6.642	10,607	261.29	226	3,034	185	82.21
1999	6.120	10,141	224.23	186	2,404	179	69.48
2000	5.615	9,726	222.14	168	2,121	192	59.53
2001	4.819	8,698	213.66	168	2,053	171	48.80
2002	4.993	8,909	216.09	184	2,039	167	50.54
2003	5.179	8,804	217.44	181	1,989	145	57.30
2004	6.884	11,056	279.96	231	2,518	176	78.14
2005	7.312	11,083	294.07	259	2,407	189	79.68

*** Derived from the actual prices shown above using consumer price indices.

Appendix 3

Silver Prices in US$ per ounce

	London Silver Market - Spot			Comex Settlement		
	High	Low	Average	High	Low	Average
1980	49.4500	10.8900	20.9837	48.7000	10.8000	20.6568
1981	16.3030	8.0300	10.4869	16.2900	7.9850	10.5014
1982	11.1100	4.9010	7.9219	11.2100	4.9800	7.9311
1983	14.6680	8.3700	11.4301	14.7150	8.4000	11.4340
1984	10.1100	6.2200	8.1446	10.0640	6.2950	8.1585
1985	6.7500	5.4500	6.1319	6.8350	5.5250	6.1459
1986	6.3100	4.8530	5.4645	6.2850	4.8540	5.4653
1987	10.9250	5.3600	7.0156	9.6600	5.3790	7.0198
1988	7.8215	6.0500	6.5324	7.8270	5.9980	6.5335
1989	6.2100	5.0450	5.4999	6.1940	5.0300	5.4931
1990	5.3560	3.9500	4.8316	5.3320	3.9370	4.8174
1991	4.5710	3.5475	4.0566	4.5450	3.5080	4.0355
1992	4.3350	3.6475	3.9464	4.3180	3.6400	3.9334
1993	5.4200	3.5600	4.3130	5.4430	3.5230	4.3026
1994	5.7475	4.6400	5.2851	5.7810	4.5730	5.2808
1995	6.0375	4.4160	5.1971	6.1020	4.3750	5.1850
1996	5.8275	4.7100	5.1995	5.8190	4.6760	5.1783
1997	6.2675	4.2235	4.8972	6.3070	4.1550	4.8716
1998	7.8100	4.6900	5.5442	7.2600	4.6180	5.4894
1999	5.7900	4.8800	5.2198	5.7600	4.8720	5.2184
2000	5.4475	4.5700	4.9514	5.5470	4.5630	4.9691
2001	4.8200	4.0500	4.3696	4.8570	4.0280	4.3594
2002	5.0975	4.2350	4.5990	5.1250	4.2230	4.6007
2003	5.9650	4.3700	4.8787	5.9930	4.3460	4.8958
2004	8.2900	5.4950	6.6578	8.2110	5.5140	6.6871
2005	9.2250	6.3900	7.3115	9.0000	6.4270	7.3223

US Prices in 2005

Comex Settlement

	High	Low	Average
January	6.8450	6.4270	6.6299
February	7.5170	6.5450	7.0820
March	7.6040	6.9100	7.2664
April	7.3330	6.9030	7.1261
May	7.4440	6.8400	7.0454
June	7.5260	7.0280	7.3093
July	7.2380	6.8300	7.0151
August	7.2840	6.6910	7.0067
September	7.5120	6.9430	7.1796
October	7.8270	7.3750	7.6805
November	8.3490	7.4420	7.9067
December	9.0000	8.3120	8.6288

Leasing Rates in 2005

Monthly Averages

	3-month	6-month	12-month
January	0.02%	0.25%	0.65%
February	0.04%	0.27%	0.60%
March	0.06%	0.32%	0.85%
April	0.05%	0.31%	0.73%
May	0.98%	1.42%	2.03%
June	0.84%	1.52%	2.54%
July	0.43%	1.02%	2.17%
August	0.33%	0.85%	1.95%
September	0.66%	1.26%	2.39%
October	0.84%	1.69%	3.02%
November	0.68%	1.28%	2.67%
December	0.58%	1.03%	1.96%

Appendix 4

Leading Primary Silver Mines

Rank	Mine	Country	Operator	2004 Moz	2005 Moz
1	Cannington	Australia	BHP Billiton	45.91	48.80
2	Fresnillo (Proaño)	Mexico	Industrias Peñoles SA de CV	31.60	33.93
3	Dukat	Russia	Polymetal*	12.60	13.85
4	Uchucchacua	Peru	Compañia de Minas Buenaventura SA	9.83	10.21
5	Greens Creek	United States	Kennecott Minerals/Hecla Mining Company	9.75	9.66
6	Arcata	Peru	Minera Ares	7.94	7.61
7	Imiter	Morocco	Société Métallurgique d'Imiter	5.33	5.82
8	Rochester	United States	Coeur d'Alene Mines Corp	5.67	5.72
9	Tayahua	Mexico	Grupo Carso*	3.38	4.30
10	Lunnoye	Russia	Polymetal*	3.70	3.74
11	Huaron	Peru	Pan American Silver Corp	4.08	3.69
12	Tizapa	Mexico	Industrias Peñoles SA de CV	3.04	3.44
13	Selene	Peru	Minera Ares	2.93	3.34
14	La Colorada	Mexico	Pan American Silver Corp	2.04	3.09
15	Morococha	Peru	Pan American Silver Corp	1.50	2.74

*estimated 2005 production

Silver Mine Production by Source Metal

(million ounces)

	2002	2003	2004	2005
Primary				
Mexico	49.4	45.4	46.9	53.6
Australia	42.4	38.2	45.9	48.8
Peru	22.8	28.8	30.8	31.2
Other	43.2	48.0	50.2	54.7
Total	**157.9**	**160.5**	**173.8**	**188.2**
Gold				
Chile	17.3	23.3	20.4	22.0
Canada	23.0	23.5	23.7	16.8
Peru	6.6	5.8	8.1	9.9
Other	30.6	27.6	25.7	25.5
Total	**77.5**	**80.2**	**77.9**	**74.2**
Copper				
Poland	38.3	43.7	43.2	40.0
Chile	21.3	18.7	23.1	22.2
Kazakhstan	21.7	19.5	17.7	20.5
Other	71.6	73.9	75.9	81.8
Total	**153.0**	**155.8**	**159.9**	**164.5**
Lead/Zinc				
Peru	49.4	46.3	44.8	45.3
China	33.9	38.3	42.7	43.5
Mexico	27.9	27.1	26.5	28.7
Other	92.2	88.5	90.1	92.4
Total	**203.4**	**200.2**	**204.1**	**209.9**
Other	4.6	4.4	4.7	4.6
World Total	**596.4**	**601.0**	**620.4**	**641.5**

Silver Mine Production by Main Region and Source Metal

(million ounces)

	2002	2003	2004	2005
North America				
primary	74.1	68.8	67.8	73.5
lead/zinc	40.7	38.9	40.0	41.7
copper	22.5	18.7	20.0	21.2
gold	36.7	35.6	35.0	27.6
other	1.9	1.5	1.7	1.6
Total	**175.9**	**163.5**	**164.4**	**165.6**
Central & South America				
primary	24.1	30.3	32.5	33.3
lead/zinc	65.9	63.8	60.7	60.1
copper	32.4	32.7	38.9	39.5
gold	26.7	31.7	30.9	34.3
other	0.2	0.3	0.3	0.3
Total	**149.3**	**159.0**	**163.3**	**167.5**
Asia & CIS				
primary	10.2	18.2	22.2	26.9
lead/zinc	57.7	63.9	67.1	68.6
copper	53.6	53.2	50.8	55.6
gold	11.1	9.7	9.2	9.5
other	2.3	2.4	2.4	2.4
Total	**134.9**	**147.4**	**151.7**	**162.9**
Rest of the World				
primary	49.5	43.2	51.2	54.6
lead/zinc	39.2	33.6	36.3	39.6
copper	44.5	51.1	50.3	48.2
gold	3.1	3.1	2.8	2.8
other	0.2	0.2	0.3	0.3
Total	**136.4**	**131.2**	**141.0**	**145.5**
World Total	**596.4**	**601.0**	**620.4**	**641.5**

Appendix 5

Comex Futures and Options Turnover and Open Interest, and London Bullion Market (LBM) Turnover

	Comex Number of Contracts				LBM Clearing Turnover[3]		
	Futures		Options				
	Turnover[1]	Open Interest[2]	Turnover[1]	Open Interest[2]	Ounces transferred (millions)	Value (US$bn)	Number of transfers
Jan-03	291,120	103,510	40,685	59,528	89.7	0.4	216
Feb	409,737	84,202	53,682	57,466	107.5	0.5	247
Mar	216,660	88,711	34,079	64,726	90.0	0.4	215
Apr	315,240	78,337	26,530	54,820	79.2	0.4	178
May	251,096	78,871	35,606	62,237	78.9	0.4	228
Jun	352,564	79,156	21,939	47,517	61.3	0.3	193
Jul	407,931	112,011	79,976	75,341	108.3	0.5	251
Aug	442,762	106,251	41,053	71,554	97.8	0.5	233
Sep	335,508	105,542	54,298	83,031	96.2	0.5	267
Oct	373,493	94,349	57,230	92,444	101.3	0.5	268
Nov	464,244	104,122	58,403	48,585	89.6	0.5	248
Dec	256,020	102,250	44,274	60,865	110.1	0.6	246
Jan-04	385,058	109,268	99,729	89,994	143.4	0.9	332
Feb	544,939	110,578	82,987	71,347	121.5	0.8	329
Mar	408,447	120,328	91,090	90,383	128.7	0.9	380
Apr	671,204	97,865	139,732	99,921	133.8	0.9	431
May	278,703	85,696	65,310	113,465	94.7	0.6	317
Jun	425,501	89,133	73,248	98,451	95.1	0.6	280
Jul	316,264	91,850	80,230	105,785	93.6	0.6	305
Aug	427,973	95,230	71,223	87,408	82.5	0.6	259
Sep	281,737	93,209	57,455	90,962	82.3	0.5	252
Oct	364,158	117,328	105,397	105,135	92.0	0.7	337
Nov	541,366	116,958	78,530	52,635	75.5	0.6	319
Dec	360,775	100,586	77,417	63,637	102.2	0.7	375
Jan-05	285,449	96,665	78,701	85,481	76.9	0.5	272
Feb	513,617	101,638	95,885	65,973	77.5	0.5	299
Mar	370,338	99,251	83,178	79,260	93.8	0.7	321
Apr	488,832	107,264	72,391	62,464	87.6	0.6	299
May	392,156	113,358	67,998	80,544	152.1	1.1	357
Jun	621,647	115,021	88,041	65,376	123.4	0.9	355
Jul	334,903	124,378	74,055	71,103	95.1	0.7	289
Aug	600,961	117,356	71,351	61,294	104.4	0.7	318
Sep	455,033	126,796	111,708	80,686	126.8	0.9	356
Oct	424,972	138,138	139,371	104,293	124.7	1.0	349
Nov	652,917	140,909	103,995	79,106	132.0	1.0	359
Dec	398,526	131,229	145,115	105,533	131.3	1.1	403

1 Monthly total; 2 Month-end; 3 Daily average; Source: LBMA, Comex